

October 11-16 2015
Montpellier (France)
ICID2015 CONFERENCE

Innovate to Improve Irrigation Performance

PROGRAM BOOK



ICID2015
26th ERC & 66th IEC



A FEID 



EDITORIAL

by F. BRELLE
President of AFEID,
Vice-President of ICID

The French Association for Water, Irrigation and Drainage and the International Commission of Irrigation and Drainage are pleased to welcome you to Montpellier from October 11 to 16, 2015 for the ICID2015 Conference "Innovate to Improve Irrigation Performance".

A step between the 7th World Water Forum and the Climate Conference COP21 in Paris, the ICID2015 Conference will highlight water issues for agriculture on the international agenda. The event will consist of an international scientific conference with Euro-Mediterranean zoom, numerous parallel sessions and side events, ICID workshops and 66th ICID International Executive Council meetings. Over 600 participants from 60 countries are expected: scientists, engineers, decision-makers, funders. Additionally, about 15 companies working in the irrigation sector will present their know-how.

We hope that this Conference will give to you the opportunity for rich scientific exchanges and fruitful meetings. We also invite you to share our experience in agricultural water management and to discover the cultural heritage of Montpellier and its surroundings.

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ORGANIZERS AND PARTNERS



More than **300 articles** submitted to the Conference

Over **600 participants** from **60 countries** expected

15 companies at the Exhibition Hall

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LIST OF ABBREVIATIONS

66 th IEC	66 th International Executive Council
PCSO	Permanent Committee on Strategy and Organization
PCTA	Permanent Committee on Technical Activities
PFC	Permanant Finance Committee
AFR WG	African Regional Working Group
ASRWG	Asian Regional Working Group
C CONGR	Congress, conferences committee
C PR & P	Committee on Public Relations and Publications
EB JOUR	ICIDJournal Editorial Board
ERWG	European Regional Working Group
TF VE	Task Force on Value Engineering
TF WWF 7	Task Force to Guide ICID Inputs to World Water Forum 7
WG BIO ENERGY	Task Force on Water for Bio Energy and Food
WG CAFM	Working Group on Comprehensive Approach to Flood Management
WG CLIMATE	Working Group on Global Climate Change and Agricultural Water Management (WG CLIMATE)
WG CROP	Working Group on Water and Crop
WG DROUGHT	Working Group on Water Management in Water Stressed Regions
WG ENV	Working Group on Environment
WG HIST	Working Group on history of irrigation, drainage and flood
WG IDM	Working Group on Irrigation Development and Management
WG IDSST	working group on irrigation and drainage in the states under socio economic transformation
WG M&R**	Working Group on Modernization & Revitalisation of Irrigation Schemes
WG OIA**	Working Group on Institutional Aspects of Irrigation / Drainage System Management
WG ON FARM	Working Group on On Farm Irrigation Systems
WG PQW	Working Group on Use of Poor Quality Water for Irrigation
WG SDRG	Working Group on Sustainable Drainage
WG STDA	Working Group on Sustainable Development of Tidal Areas
WG WATS**	Working Group on Water Saving for Agriculture
WG YPF	Working Group on Young Irrigation Professionals Forum
GR/PE Meeting	General Reporters Meeting
MB	Management board
Mtg. NCs- Office Bearers	Meeting between National committees and Office Bearers
OBC	Office Bearers Committee
SC	Staff Committee
MT JOUR	Management Team Journal
YP Meeting	(sponsored by ICID) Young Professionals Meeting
WG STDA ws	Internal Workshop by WG STDA
W4CROPS	“Analysis of the resilience of new forms of agriculture irriguated with groundwater in North Africa” research project restitution
COSTEA	“Scientific and Technical Committte on Water for Agriculture” (financed by AFD) Internal meeting
Initiative Sahel (SIIP)	West African states “Sahel Initiative” (Financed by the World Bank) internal meeting
TF VE ws	Internal Workshop organized by TF VE
Water For Crop	“Euro india collaborative projects on biotechnological wastewater treatments and reuse in agronomical systems” internal meeting
WG CAFM ws	Open Workshop by WG CAFM
WG CROPS ws	Open Workshop by WG CROPS
WG ENV ws	Open Workshop by WG ENV
WG HIST ws	Open Workshop by WG HIST
WG SDRG ws	Open Workshop by WG SDRG
Irrigation & Energy ws	Open Workshop on Irrigation and Energy
Round Table on reuse	Open debate on waste water reuse in Agriculture
PPP ws	Open workshop on Public Private Partnership
26 th ERC	26 th ICID European (euro-mediterranean) Regional Conference

AT A GLANCE

CONFERENCE PROGRAM

MONDAY, OCTOBER 12, 2015

WHEN	WHAT	WHERE
All day	Registration - welcome desk	Joffre
	Organizing Committee	Sully 3 bis
	ICID Rooms	Sully 3
	Posters Exhibition	Joffre 1
	Exhibition (companies)	Joffre 2 & 3
9:00 - 12:30	OPENING CEREMONY for the 26th ERC and 66th IEC Welcome Cocktail offered by AFEID	Pasteur Joffre 1, 2 & 3
12:30 - 14:00	Press Meeting	Joffre 5
All afternoon	Visit to Saint Guilhem le Désert	
14:00 - 17:30	26 th ERC - Theme DRIP 1/2	Rondelet 1 & 2
	26 th ERC - Theme REUSE 1/2	Sully 1
	26 th ERC - Theme GOUV 1/2	Sully 2
	Water ressource quantitative management under climat change : the French Mediterranean case (AERMC)	Barthez 1 & 2
	Workshop on Non-Structural Adaptations to Flood Management (WG CAFM)	Joffre 5
16:00 - 17:30	Poster Session 1/2	Einstein
19:00 - 21:00	Thai Reception (on invitation only)	Level 3

LEGEND

■ Plenary sessions	■ International workshops proposed by ICID Working groups	■ Cultural and Technical Tours
■ 26 th ERC - Theme DRIP	■ International workshops proposed by other initiatives	■ Exhibition
■ 26 th ERC - Theme REUSE		■ Reception
■ 26 th ERC - Theme GOUV		

ICID RELATED MEETINGS AND OTHER PROJECT MEETINGS

14:00 - 17:30	PFC	Joffre 4
17:30 - 19:00	Pleneray IEC	Einstein

LEGEND

■ ICID Committees meetings
■ ICID IEC

TUESDAY, OCTOBER 13, 2015

WHEN	WHAT	WHERE
All day	Registration - welcome desk	Joffre
	Organising Committee and ICID Rooms	Sully 3 bis
	ICID Rooms	Sully 3
	Posters Exhibition	Joffre 1
	Exhibition (companies)	Joffre 2 & 3
	Visit to Carcassonne	
9:00 - 12:30	26 th ERC - Theme DRIP 2/2	Rondelet 1 & 2
	26 th ERC - Theme REUSE 2/2	Sully 1
	26 th ERC - Theme GOUV 2/2	Sully 2
	Lunch	Joffre 1, 2 & 3
14:00 - 17:30	Workshop on Precision Irrigation - 1/2 (WG CROP)	Rondelet 1 & 2
	Round Table on REUSE Waste water reuse in agriculture (AFEID/WG PQW)	Sully 1
	Workshop on Future of drainage under environmental challenges and emerging technologies (WG SDG)	Barthez 1
	Workshop on History of water crisis, old and recent issues (WG HIST)	Barthez 2
19:00 - 21:00	Mexican Reception (on invitation only)	Level 3

LEGEND

■ Plenary sessions	■ International workshops proposed by ICID Working groups	■ Cultural and Technical Tours
■ 26 th ERC - Theme DRIP	■ International workshops proposed by other initiatives	■ Exhibition
■ 26 th ERC - Theme REUSE		■ Reception
■ 26 th ERC - Theme GOUV		

ICID RELATED MEETINGS AND OTHER PROJECT MEETINGS

8:00 - 9:00	WIF2-ITAC	Joffre 5	14:00 - 15:30	WG WATS**	Joffre 4
9:00 - 10:30	WG IDSST	Barthez 1		WG STDA	Joffre 5
	WG IDM**	Barthez 2	14:00 - 17:30	ARENA	Sully 2
	EB JOUR	Joffre 4		WIF2-ISC	Sully 3 bis
	C-CONGR	Joffre 5	16:00 - 17:30	WG ON FARM	Joffre 4
	AFR WG	Barthez 1		WG STDA ws	Joffre 5
11:00 - 12:30	ASR WG	Barthez 2	17:30 - 19:00	Mtg. NCs - Office Bearers	Rondelet 1-2
	WG CAFM	Joffre 4			
	CPR&P	Joffre 5			

LEGEND

■ ICID Working Group meetings	■ Internal workshops held within ICID Working Groups
■ Project meetings	■ ICID other meetings

** Newly constituted workbodies

WEDNESDAY, OCTOBER 14, 2015

WHEN	WHAT	WHERE
All day	Registration - welcome desk	Joffre
	Organising Committee	Sully 3 bis
	ICID Rooms	Sully 3
	Posters Exhibition	Joffre 1
	Exhibition (organizers)	Joffre 2 & 3
All morning	Visit to Aigues Mortes	
	Pond of Montady - Technical Tour	
	NOWMMA Project - Technical Tour	
	IRSTEA Experimental Platform - Technical Tour	
	Visit of Gignac WUA - Technical Tour	
9:00 - 12:30	Workshop Irrigation & Energy	Rondelet 1
	Workshop on Precision Irrigation - 2/2 (WG CROP)	Barthez 1
	Workshop Ecosystem Services and Multi-Functionality of Irrigation and Drainage Systems (WG ENV)	Joffre 5
	Lunch	Joffre 1, 2 & 3
All afternoon	Visit to Montpellier	
14:00 - 15:30	Workshop Irrigation & Energy	Rondelet 1
	Poster Session 2/2	Einstein
16:00 - 18:00	CLOSING CEREMONY for the 26 th ERC and 66 th IEC	Einstein
19:00 - 23:00	Gala dinner (on invitation only)	Château de Pouget

ICID RELATED MEETINGS AND OTHER PROJECT MEETINGS

WHEN	WHAT	WHERE
9:00 - 10:30	TF VE	Rondelet 2
	WG DROUGHT	Joffre 3 C
	WG IOA**	Joffre 4
9:00 - 12:30	SICMED	Barthez 2
	ARENA	Joffre 3 D
9:00 - 17:30	SAAO Workshop	Sully 1
11:00-12:30	TF VE Workshop	Rondelet 2
	WG BIO ENERGY	Joffre 3 C
	TF WWF7	Joffre 4
14:00 - 15:30	ICID YPF	Rondelet 2
	WG CROPS	Barthez 1
	WG PQW	Barthez 2
	WG SDG	Sully 2
	WG M&R**	Joffre 3 C
	WG HIST	Joffre 3 D
16:00 - 17:30	Sahel Business Meeting	Joffre 5
	OBC	Joffre 4
	ER WG + 20 th anniversary	Joffre 5
17:30 - 19:00	COSTEA / SIIP	Joffre 3 D
	W4C WP1	Joffre 3 C

- LEGEND**
- International workshops proposed by ICID Working groups
 - International workshops proposed by other initiatives
 - Cultural and Technical Tours
 - Exhibition
 - Reception
 - ICID Working Group meetings
 - Project meetings
 - ICID Committees meetings
 - ICID other meetings
 - Internal workshops held within ICID Working Groups
 - ** Newly constituted workbodies

THURSDAY, OCTOBER 15, 2015

WHEN	WHAT	WHERE
All day	Registration - welcome desk	Joffre
	Organising Committee	Sully 3 bis
	ICID Rooms	Sully 3
	Visit to Nîmes and Pont du Gard	
	Exhibition (organizers)	Joffre 2 & 3
9:00 - 12:30	Workshop Public-Private Partnerships (WB / AFD / AFEID)	Joffre 1
	Lunch	Joffre 1, 2 & 3
14:00 - 17:30	Workshop Public-Private Partnerships (WB / AFD / AFEID)	Joffre 1

ICID RELATED MEETINGS AND OTHER PROJECT MEETINGS

WHEN	WHAT	WHERE
8:00 - 9:00	Sub-Committee-Themes	Joffre 5
9:00 - 12:30	PCSO	Joffre 5
9:00 - 17:30	YP training	Joffre 3 C
	ARENA	Joffre 3 D
9:00 - 19:00	W4CROPS	Joffre 4
14:00 - 19:00	PCTA	Joffre 5

- LEGEND**
- International workshops proposed by other initiatives
 - Cultural and Technical Tours
 - Exhibition
 - ICID Working Group meetings
 - Project meetings
 - ICID Committees meetings
 - ICID other meetings

FRIDAY, OCTOBER 16, 2015

WHEN	WHAT	WHERE
All day	Registration - welcome desk	Joffre
	Organising Committee	Sully 3 bis
	ICID Rooms	Sully 3
	Visit to Sète	
	BRL Technical tour	

ICID RELATED MEETINGS AND OTHER PROJECT MEETINGS

WHEN	WHAT	WHERE
9:00 - 17:30	66 th IEC	Joffre 1
	COSTEA	Joffre 5
9:00 - 19:00	W4CROPS	Joffre 3 D
14:00 - 17:30	PTF meeting (SIIP)	Joffre 4
17:30 - 19:00	MB-2	Joffre 4

- LEGEND**
- Cultural and Technical Tours
 - Exhibition
 - ICID Working Group meetings
 - ICID IEC
 - Project meetings
 - ICID other meetings

You can consult all papers on the website of the Conference: icid2015.sciencesconf.org

DAY BY DAY CONFERENCE PROGRAM

MONDAY, OCTOBER 12

9:00 - 12:30 - PASTEUR

OPENING CEREMONY

Master of Ceremony: Philippe Lefebvre, journalist at France Inter

9:00

Beginning of the Opening Ceremony

Introduction, welcome speeches

- Speech of François BRELLE, President of AFEID, ICID2015 organizer
- Speech of René REVOL, Vice-President of Montpellier Méditerranée Métropole
- Speech of Saeed NAIRIZI, ICID President
- Speech of Damien ALARY, President Languedoc-Roussillon Region
- Speech of Laurent ROY, President of Water Agency Rhône Méditerranée Corse
- Keynote speech of Alain VIDAL, Director for Strategic Partnerships, CGIAR
- VIP Presentations and introduction of the roundtable

10:30

Coffee Break

11:00

High-Level Round Table:

“What policies to achieve sustainable food security through an irrigated agriculture that adapts to and mitigates climate change?”
With participation of several Ministers and high officials from the Mediterranean and from other horizons.
Testimony interventions from international VIP

12:30

End of the Opening Ceremony

MONDAY - 14:00 - 17:30 - RONDELET 1-2

THEME DRIP (1/2)

Drip irrigation for water savings : the winning formula?

CHAIRMAN: Jöhren FROEBRICH

MODERATOR: Jean-Philippe VENOT

Today drip irrigation systems are speeding fast across the world, spurred on Government incentives, by subsidies to individual farmers and large modernization programs, but also through farmer's private investments. This technical revolution creates new business opportunities for local (and sometimes informal) entrepreneurs who install, repair and even produce irrigation equipment at the local level. However the reasons why farmers adopt drip irrigation systems could be broader than the “more crop per drop” paradigm.

Taky Abdelilah FR PAPER

► **Reconversion des systèmes d'irrigation existants à l'irrigation localisée. Cas du périmètre du Gharb au Maroc.**

Djamel Latrech FR PAPER

► **Quelles innovations techniques et sociales pour une gestion durable des agrosystèmes et des ressources en eaux souterraines en zones arides : Le Cas du Système Aquifère du Sahara Septentrional.**

Ract Madoux Alice ENG PAPER

► **Converting to Drip: Interfacing farmers and managers practices in public irrigation schemes.**

Sanchis-Ibor Carles ENG PAPER

► **Effects of drip irrigation on water consumption at basin scale (Mijares River, Spain).**

Rossel Frédéric FR PAPER

► **Le refus collectif de l'irrigation localisée dans un système très intégré au marché urbain et international. Le cas de la Real Acequia de Moncada au Nord de Valencia (Espagne).**

Lacroix Bernard ENG PAPER

► **What interest of drip irrigation for cash crops in France?**

Pinel Bertrand ENG POSTER

► **Drip irrigation for corn in France : a technical and economical approach and the commercial launch of AquaTempo®, a re-usable surface drip irrigation solution.**

Ferchichi Intissar ENG POSTER

► **When adopting drip irrigation disrupts water delivery in a Tunisian irrigation scheme.**

Reinders Felix ENG POSTER

► **Drip irrigation as an efficient water saving practice.**

MONDAY - 14:00 - 17:30 - SULLY 1

THEME REUSE (1/2)

What potential for wastewater use in agriculture?

CHAIRMAN: Tom SOO / MODERATOR: Bruno MOLLE

The way wastewater is reused is shaped by the standards of many countries that have defined standard treatments for different possible uses (agricultural food and non-food, green areas). These standards are sometimes very restrictive resulting from a strict application of the precautionary principle. However the actual use of wastewaters by farmers often does not comply with these rules and generates health and environmental hazards. In particular, the development of peri-urban farming is often based on an increasing use of non-treated wastewater.

Gamri Souha ENG PAPER

► **Biofilm growth at high cod and particle concentration levels: application to the case of micro-irrigation emitters used for wastewater reuse.**

Rodda Nicola ENG PAPER

► **Use of water for food production in urban and peri-urban homestead gardens of South Africa.**

Li Jiusheng ENG PAPER

► **Effects of lateral depth and water applied on transport of E. coli in soil and residuals within plants and asparagus lettuce production for drip irrigation applying secondary sewage effluent.**

You can consult all papers on the website of the Conference: icid2015.sciencesconf.org

Patole Sanjay ENG PAPER

► **Impact of treated waste water from food processing industries in agriculture through drip irrigation system.**

Karimi Leili ENG PAPER

► **Wastewater use in arid agriculture zones Case study: Esfarayen city of Iran.**

Tas Ismail ENG POSTER

► **Effects of oxygen concentration of wastewater on soil and tomato.**

Adedugbe Adebola ENG POSTER

► **Urbanization : effect of waste water on sustainable agriculture.**

Hsieh Ming-Kai ENG POSTER

► **Utilizing Total Amount Control to Manage Wastewater Discharge into Irrigation-Drainage Channels ? A Case Study of Yilan Irrigation Association, Taiwan.**

Rachmadyanto Herry ENG POSTER

► **Wastewater Use for Irrigation in Jatiluhur Integrated Irrigation System.**

MONDAY - 14:00 - 17:30 - SULLY 2

■ THEME GOUV (1/2)

What governance for groundwater and surface water use in agriculture?

CHAIRMAN: Jean VERDIER / MODERATOR: Olivier PETIT & Marcel KUPER

Groundwater use is increasing worldwide due to easy access to this resource. It generates a groundwater economy but creates the conditions for overexploitation. Access to groundwater occurs most often individually but with many arrangements between farmers at the local level. This occurs both within existing irrigated schemes, thus exposing the inadequacies of conventional surface water governance, as well as in new irrigated territories, which shall require a new institutional arrangement.

Kuper Marcel ENG PAPER

► **Liberation or anarchy ? The Janus nature of groundwater on North Africa's new irrigation frontiers.**

Villholth Karen ENG PAPER

► **Groundwater Irrigation for Smallholders in Sub-Saharan Africa? A Review.**

Gonzalez Juan-Manuel ENG PAPER

► **Mexican experiences to control groundwater use in agriculture.**

Molle François ENG PAPER

► **State regulations in groundwater management: they bark but do they bite?**

Lavenus Raphaëlle ENG PAPER

► **Shall we trust local stakeholders to manage groundwaters?**

Rojat Dominique FR PAPER

► **Quelles solutions à la surexploitation des eaux souterraines en Méditerranée ?**

Petit Olivier ENG PAPER

► **Worker, peasant or entrepreneur? Analysis of the entrepreneurial logics and practices of family farmers in agrarian reform cooperatives in the Saiss (Morocco).**

MONDAY - 14:00 - 17:30 - BARTHEZ 1-2

■ AERMC WORKSHOP

Water resources quantitative management under climate change: The French Mediterranean example

(by Rhone - Mediterranean and Corsica Water Agency)

CHAIRMAN: Patrick SAINT-LÉGER / MODERATOR: Jean-Michel LOBRY

PCC latest scientific findings confirmed that climate change is strengthening. This is particularly true on the shores of the Mediterranean Sea, hot spot at the world scale, as well as in the mountains. The facts speak for themselves: the grapes harvest season has already shifted by a month in half a century, and the phenomenon is just beginning. It is necessary to adapt the territory to the effects of climate change. Concerning water, we need to improve the knowledge about climate change impacts on water resources and as well as about the impacts of different scenarios of adaptation. Without waiting longer, given the high vulnerability of some of the Mediterranean territories, we need to improve water savings and water use efficiency. The objective of this seminar is to share knowledge and experiences acquired on the French Mediterranean area, and beyond that, on the Euro-Mediterranean region.

Introduction

J.M. Lobry and Laurent Roy FR SPEECH

Adaptation to climate change:

Thomas Pelte FR PAPER

► **Presentation of the climate change adaptation plan of the Rhône Mediterranean Basin.**
 ► **Adaptation scenarios on the refitted basin of the Durance.**

Sébastien Chazot FR PAPER

► **Quantitative analysis of the Rhône river.**

Julien Dubuis FR PAPER

► **The cost recovery : the example of a civil engineering structure of raw water transfer.**

Feedback of local experience:

Jacques Chabaud FR PAPER

► **From the diagnosis to the management: the example of the Aude.**

Yannis Gilbert FR PAPER

► **When the water savings allow the agricultural development - the example of the Saint André à Roquebrun Canal ASA.**

Hervé Roullin FR PAPER

► **No regret water savings: the example of the Saint Julien canal ASA.**

Julie Fabre FR PAPER

► **Evolution of the quantitative imbalances, adaptation to climate and anthropogenic change within two mediterranean basins, The Hérault and The Ebre.**

Conclusion

Laurent Roy FR SPEECH

MONDAY - 14:00 - 17:30 - JOFFRE 5

■ WG CAFM WORKSHOP

Non-Structural Adaptations to Flood Management (by ICID - WG CAFM)

CHAIRMAN: Kamran EMAMI

The European Union implemented, in 2007 a directive on the assessment and management of flood risks. This directive has to be incorporated in the national laws and under this directive the member states have to prepare flood hazard maps and flood risk maps and flood risk management plans until 2015. So, all member states of the European Union have been very active in preparing flood maps/plans. Different experiences in other regions of the world exist with different kind of flood mapping as an important tool to manage flood risks. Other non-structural measures could help reduce the flood risk too. In nutshell, this will lead to a situation where communities would be better prepared and adapted to local flood risks. The aim of the workshop is to share these experiences and to study the different solutions adopted worldwide.

Emami Kamran ENG PAPER

► **ENSO based climate forecasting for early impoundment of large reservoirs, case study: Karkheh Dam in Iran.**

Piergiorgio Manciola ENG PAPER

► **The Effects of Culverts in Hydraulic modeling for flood risk mitigation.**

Suttigarn Arthon ENG PAPER

► **Adaptive flood management in Thailand : adjusted operation rule curves of dams.**

Masumoto Takao ENG PAPER

► **Utilization of Flood Prevention Function of Paddies as an Adaptive Counter-measure.**

Rakcheep Patsorn ENG PAPER

► **Reservoir Management of Banglang Dam for Flood Mitigation: The Case Study of Flood Situation in Pattani River Basin, 2014.**

Bozorgi Ali ENG POSTER

► **A method to map flooding-prone areas in Iran using Landsat satellite images and GIS.**

Lucio Ubertyni ENG POSTER

► **Continuous and discrete numerical modeling: a comparison for flood inundation mapping.**

Minakawa Hiroki ENG POSTER

► **Development of assessment tools for flood damage risk on paddies and its application to low-lying areas in Japan.**

Mpandeli Sylvester ENG POSTER

► **An assess of flood vulnerability in Ntlhaveni Block D village, Malamulele North East, Limpopo Province, South Africa.**

Piergiorgio Manciola ENG POSTER

► **A procedure for evaluating the vulnerability of hydraulic constructions in flood prone areas.**

Nowroozy Sahar ENG POSTER

► **Flood Non-Structural Management with River Conservation and Operations Works.**

Makvandi Ashraf ENG POSTER

► **Study of Sand and Gravel Mining Impacts on Floods in Hake River (Shazand City- Iran).**

MONDAY - 16:00 - 17:30 - EINSTEIN

■ POSTER SESSION (1/2)

Two POSTER SESSIONS will give the stage to some authors who submitted to ICID 2015 Scientific Committee an abstract dealing interesting issues that couldn't be discussed during the scientific and technical sessions scheduled within the conference.

Authors will have three minutes to introduce themselves and deliver the key messages of their works while their POSTER appears on the screen.

All Posters are exhibited in the Exhibition Space, speakers stay at disposal during the conference to exchange with participants. These two sessions are an opportunity for speakers to be identified by interested participants.

Cortés Teresa FR POSTER

► **TOM® PVC-B0 pour l'irrigation.**

Davidson Michael ENG POSTER

► **A New Paradigm for Sustainable Adoption of Advanced Irrigation in LDCs.**

Figueres Caroline FR POSTER

► **Données ouvertes et PPPs : convergence ou divergence en matière de développement ?**

Hosseinzadeh Ghazi Chaki Zeinab ENG POSTER

► **Comparison of automated control systems for main canal of Qazvin irrigation network.**

Jin-Yong Choi ENG POSTER

► **Evaluation for the application of WRF meteorological data on grid-based soil moisture model in upland.**

You can consult all papers on the website of the Conference: icid2015.sciencesconf.org

Kovalenko Petro ENG POSTER

► **Mapping and evaluation of dryness conditions with GIS and remote sensing.**

Lee Sung-Hack ENG POSTER

► **Estimation of stage-storage curve of unmeasured reservoir in South Korea.**

Lingannagowda Savithamma ENG POSTER

► **Genetic variability for root traits and its association with the fruit yield in tomato (Solanum spp.).**

Lingannagowda Savithamma ENG POSTER

► **Assessment of drought tolerance in Tomato germplasm based on quantitative indices (Solanum spp.).**

Mouhouche Brahim FR POSTER

► **L'eau virtuelle des produits agricoles d'importation : un moyen de contrecarre le problème du manque d'eau en Algérie.**

Rijal Krishna Prasad ENG POSTER

► **Improving Water Productivity on rice: principles and practices.**

Sabri Ahmed FR POSTER

► **Valorisation de l'eau par la variété phoenicicole Majhoul conduite sous les conditions arides du Tafilalet au Maroc.**

Shatkovsky Andriy ENG POSTER

► **State, perspectives and scientific support of irrigation development in Ukraine.**

Ghahreman Nozar ENG POSTER

► **Feasibility of sugarcane cultivation during the next five decades under RCP climate change scenarios (Case study: Khuzestan province, Iran).**

J D Sophia ENG POSTER

► **Enhancing quality of distillery spent wash (DSW) through sequential adaptation of indigenous bacterial and algal consortium and its reuse potential for irrigation.**

Oh Chansung ENG POSTER

► **Numerical Simulation on Hydrodynamic Characterization Changes Associated with the Stage of Internal Development Construction in Saemangeum Reclaimed Area.**

Shabou Marouen ENG POSTER

► **Distributed large-scale unsaturated soil properties of a semi-arid area of Kairouan plain (Tunisia).**

Park Namsik ENG POSTER

► **Effects of saline groundwater pumping for mitigating sea water intrusion in coastal aquifers.**

Tandjir Larbi FR POSTER

► **L'irrigation seule n'optimise pas les rendements des cultures.**

TUESDAY, OCTOBER 13

TUESDAY - 9:00 - 12:30 - RONDELET 1-2

THEME DRIP (2/2)

CHAIRMAN: Johren FROEBRICH

MODERATOR: Jean-Philippe VENOT

Bekkari Lahssan FR PAPIER

► **L'accès collectif à la technique de l'irrigation localisée dans les systèmes communautaires d'irrigation, analyse à partir d'études de cas au moyen Atlas, Maroc.**

Kulkarni Suresh ENG PAPER

► **Challenges of Introducing Micro irrigation in Canal Irrigation Schemes in India.**

Sofiyuddin Hanhan ENG PAPER

► **Process of adoption and adaptation towards sustainable implementation of micro irrigation (lesson learned from several dryland small holder farmers in Indonesia).**

Coulibaly Rémi FR PAPER

► **L'irrigation goutte à goutte pour l'économie de l'eau : cas du Burkina Faso.**

Khalifa Ahmed ENG POSTER

► **Introduction of family drip system for improving livelihood of small-scale farmers, north Kassala, Sudan.**

Malota Mphatso ENG POSTER

► **Evaluation of the low adoption rate of drip irrigation in Malawi and lessons learnt from farmers experiences.**

Lohanee Bashu ENG PAPER

► **Non-conventional method of irrigation for Livelihood enhancement (A case study of Micro-Irrigation Piloting in Ripin Dhotar Irrigation System).**

Eamen Leita ENG POSTER

► **Role of Modern Irrigation Methods and Farmers' Participation in Agricultural Water Consumption Management of Urmia Lake Basin, Iran.**

TUESDAY - 9:00 - 12:30 - SULLY 1

THEME REUSE (2/2)

CHAIRMAN: Tom SOO / MODERATOR: Bruno MOLLE

Deshmukh Santosh ENG PAPER

► **Monitoring and simulation of wastewater irrigation dynamics in the vadose zone.**

Datta Aviraj ENG PAPER

► **Assessing the performance of free water surface constructed wetlands in treating domestic wastewater: a potential alternative for irrigation.**

Bouzit Madjid ENG PAPER

► **Valuing treated wastewater and reuse: a review of applications and issues for further actions.**

Declercq Rémi ENG PAPER

► **Socio-economic interests of treated wastewater reuse in agriculture: Clermont-Ferrand case of projects' costs-benefits analysis.**

De Sanctis Marco ENG PAPER

► **Municipal wastewater reuse in agriculture by an innovative reactor with low environmental impact.**

Patil Mukund ENG PAPER

► **Decentralized Wastewater Treatment System for Safe Reuse of Wastewater as Business Model in Rural Area.**

Tilak Amey ENG PAPER

► **Assessing the Potential of Ageratum conyzoides in Constructed Wetlands for Treating Domestic Wastewater.**

Pollice Alfieri ENG PAPER

► **Reuse of treated municipal wastewater as a sustainable approach to irrigation and fertirrigation in Mediterranean countries: a case study.**

Juwarakar Asha ENG POSTER

► **Phyto-treatment Technology for Wastewater Reuse in Agriculture.**

Borgarino Jean ENG POSTER

► **Design and testing of an emitter dedicated to treated waste water distribution: From fluid mechanics simulation to prototyping.**

TUESDAY - 9:00 - 12:30 - SULLY 2

THEME GOUV (2/2)

CHAIRMAN: Jean VERDIER / MODERATOR: Olivier PETIT & Marcel KUPER

Closas Alvar ENG POSTER

► **No carrots, no sticks? Limits to the implementation of regulatory tools to control and manage groundwater over-abstraction in the Arab world.**

El-Agha Doaa ENG POSTER

► **Below the radar: the boom of groundwater use in the Nile Delta.**

Aarnoudse Eefje ENG POSTER

► **Surface water supply as an indirect measure to regulate groundwater use: a case study in Northwest China.**

Arturo González ENG POSTER

► **Governance and management of aquifers in Mexico.**

Yuksel Hasanbasri ENG POSTER

► **Drought Management in Central Part of Turkey with special reference to recent drought effect experienced on water resources.**

Gungor Aysen ENG POSTER

► **Water Governance and Groundwater Management Approaches in Turkey.**

Basharat Muhammad ENG POSTER

► **Assessment of the performance and conjunctive management of surface water and groundwater supplies : a case study of Indus Basin irrigation.**

Chang-Chi Cheng ENG POSTER

► **Water Governance for Drought/Water-Scarcity in Taiwan - a Multi-Layer Management System.**

Altchenko Yvan ENG PAPER

► **Mapping irrigation potential from renewable groundwater in Africa : a development perspective.**

Franklin Bradley ENG PAPER

► **Solar Irrigation Pumps in India: Can Power Buy-Back Ensure Sustainable Groundwater Use?**

Del Vecchio Kévin FR PAPER

► **Lire les appropriations territoriales du problème de « surexploitation » des eaux souterraines à travers la mise en œuvre des « contrats de nappe » au Maroc.**

Lepercq Daniel FR PAPER

► **Gestion des nappes phréatiques en amont du Marais Poitevin : coexistence d'une agriculture performante et d'un milieu naturel remarquable.**

Fayrap Aynur ENG PAPER

► **Agricultural groundwater management in Turkey.**

Amichi Farida FR PAPER

► **De l'archipel oasien à l'eldorado pionnier.**

Ruf Thierry FR PAPER

► **Comment se sont adaptés les agriculteurs de la zone d'El Guerdane à la diminution de l'accès à l'eau et à la mise en place d'un système de distribution d'eau pour l'irrigation localisée ?**

You can consult all papers on the website of the Conference: icid2015.sciencesconf.org

TUESDAY - 14:00 - 17:30 - RONDELET 1-2

WG CROPS WORKSHOP (1/2)

Precision Irrigation (by AFEID and ICID WC CROPS)

CHAIRMAN: Ragab RAGAB / MODERATOR: Pierre RUELLE

The traditional meaning of precise irrigation is about applying precise amounts of water to crops at precise locations (e.g. within the soil profile) at precise times and uniformly across the farm. Precision irrigation, as a concept, slightly differs from this traditional definition. Precision irrigation focuses on individual plants or small areas within a farm, while the traditional definition takes a holistic approach at farm level. It is much more than the precise application of water; it seamlessly combines the optimal performance of the application system with the crop, water and nutrient management. It is a systems approach. It is applicable to all irrigation methods and all crops at appropriate area and time scales. The main objective of the precision irrigation is to optimize water application efficiency based on real climatic data collected at the farm.

This requires understanding soil spatial variability, cropping practices and topography. Precision irrigation for irrigation water management is still in the development stage and requires research and development to allow it to become more widely used and applicable.

Sharing country experiences based on aspects of precision irrigation will be key to the success of this workshop.

El Mokh Fathia **ENG PAPER**

► **Assessment of on-farm vegetable crop response to drip-irrigation scheduling with saline water in the southern Tunisia.**

Nagaz Kamel **ENG PAPER**

► **Impact of deficit irrigation on yield and fruit quality in orange (Citrus Sinensis L. Osbeck, CV. Meski Maltaise) in southern Tunisia.**

Lin Yi-Ju **ENG PAPER**

► **The impact of management practice on yield and irrigation water use efficiency for paddy rice under shortage environment.**

Seidel Sabine **ENG PAPER**

► **Automated soil water tension-based drip irrigation for precise irrigation scheduling.**

Jean Jacques Weber **FR PAPER**

► **Expérimentation du goutte à goutte sur la culture de maïs dans le sud-ouest de la France : enseignements et perspectives.**

Tangara Brehima **FR PAPER**

► **Irrigation goutte à goutte, une technologie appropriée pour la production de la patate douce en zone sahéenne (Mali).**

Mahjoubi Arash **ENG PAPER**

► **Estimation the soil Salinity of Sugarcane Root Zone in Different Management of Irrigation and Drainage Using SaltMod in the Imam Khomeini Agro-Industry.**

Amna Tanveer **ENG PAPER**

► **Evaluation of irrigation scheduling using real time soil moisture monitoring system.**

Malamasuri Kadasiddappa **ENG PAPER**

► **Determination of optimum water requirement under drip irrigation by various water production functions in rabi maize (Zea mays L.) at southern peninsular region of India.**

Duttarganvi Shantappa **ENG PAPER**

► **Management practices for water conservation, enhanced productivity and methane mitigation in irrigated lowland rice.**

Yilma Wubengeda **ENG PAPER**

► **Determining of Optimal Irrigation Regimes and NP Fertilizer Rate for Potato (Solanum tuberosum L.) at Kulumsa, Arsi Zone, Ethiopia.**

Albasha Rami **ENG PAPER**

► **Performances of subsurface drip irrigation for maize under Mediterranean and temperate Oceanic climate conditions.**

Khalifa Ahmed **ENG PAPER**

► **Comparison of surface and drip irrigation regimes on growth and yield of banana (Musa AAA) in Gezira, Sudan.**

Gasmi Ines **ENG PAPER**

► **Impact of drip irrigation and buried diffuser systems on water conservation and pepper crop yields in greenhouse.**

TUESDAY - 14:00 - 17:30 - SULLY 1

AFEID - WG PQW ROUND TABLE (REUSE)

Waste water reuse : time for solutions!

(by AFEID and ICID WG PQW)

CHAIRMAN: Akissa BAHRI / MODERATOR: Nicolas CONDOM & Samia EL GENDY

The success of the wastewater reuse projects in agriculture is based on technical feasibility, economic viability, social acceptability, agronomic and environmental sustainability, and also on their ability to respond to agricultural production targets under water and climate constraints.

Noting that reuse is a complex and an eminently multi-actors issue requiring adaptations to the local context, the objective of this multi-stakeholders round table is to address the issue of the reuse of wastewater in agriculture with an integrative approach, "solutions" oriented, highlighting and articulating inspiring experiences that illustrate how obstacles to agricultural reuse projects have been overcome. The objective is also to contextualize these "solutions" to specify whether their application framework is general or specific to a climate, regulatory, economic or social particular context. The following experiences will be presented shortly to debate together the two questions :

- Which are the best practices, technologies and methodologies to create effective, safe and cost effective water reuse chains?
- Can we successfully reuse raw or low treated water ?

Ouedraogo Salifou

► **Les micro-jardins en République de Djibouti ou une pratique agricole dans un contexte de rareté des terres et de l'eau utilisant les eaux usées domestiques.**

Purwadi Hanugrah

► **Utilization of Urbanized Waste Water for Irrigation. Case: Wadaslintang Irrigation Area (31,853 Ha), Central Java, Indonesia.**

Van Der Laan Michael

► **Irrigation as part of an acid mine drainage treatment strategy.**

Savey Pierre

► **PROJET NOWMMA - New process for Optimizing Wastewater Reuse from Mauguio to the Mediterranean area.**

Beraud Jacques

► **La réutilisation des eaux usées traitées : une ressource alternative pour l'agriculture de l'arrière-pays provençal ?**

Farag Hanan

► **Kafer EL-Shiekh -Delat-Egypt.**

Serezat Dimitri

► **Carto Reuse: a webplatform to share experiences.**

Hayek Bassam

► **Decentralized integrated sludge management: developing the approach in Jordan.**

Sadi Ali

► **North Gaea Emergency Sewage Treatment project - NGEST-Recovery and Reuse Scheme.**

Pierre-Louis Mayaux

► **Building on existing conditions: the Settat experiment, Morocco.**

TUESDAY - 14:00 - 17:30 - BARTHEZ 1

WG SDG WORKSHOP

Future of drainage under environmental challenges and emerging technologies (by AFEID and ICID WG SDG)

CHAIRMAN: Bernard VINCENT

Sustainable drainage management at both resource and system level is not only an important requirement in support of global food production, but also for the livelihood of the rural population and for environment. Excess water control (in both irrigated and rainfed regions), soil salinization and sodic soil control (in both cases of poor irrigation management and in case of fashioned deficit irrigation), soil acidification control (in tropical or Nordic humid regions), flood control, drought control, re-use and multiple use of water, surface and underground water quality, ecosystems preservation, creation or control of biodiversity are the keywords related to drainage water management.

All these roles and services are often dramatically neglected. Therefore a crucial question that need to be answered is what may be the new technologies in drainage management to meet the environmental challenges.

Wu Jingwei **ENG PAPER**

► **Shall we adjust drainage strategies to water-saving practices- a case study in China.**

Dong Bin **ENG PAPER**

► **Construction of New Irrigation and Drainage Systems Aimed at Pollution Emission Reduction in Rice-based Cropping Systems, South of China.**

Wang Shaoli **ENG PAPER**

► **Laboratory evaluation of improved subsurface drainage performance.**

Casillas Arturo Gonzales **ENG PAPER**

► **Achievements and progress of agricultural drainage in Mexico.**

Hartani Tarik **ENG PAPER**

► **Drip irrigation and drainage between water saving and salinity control: Field evidence from the Lower Cheliff (Algeria).**

Virtanen Seija **ENG PAPER**

► **Sub-Irrigation and Controlled Drainage Increase Yields and Mitigate Acid Loading in Finnish Cultivated Acid Sulfate Soils.**

Mika Turunen **ENG POSTER**

► **Simulating impacts of land-use, topography and hydrology on sediment loading in clayey subsurface drained agricultural fields in high-latitude conditions.**

Lecollinet Julien **ENG PAPER**

► **Reuse of drainage water in Iraq.**

Gowda Ramana **ENG PAPER**

► **Assessment of Traditional Drainage System with Special Reference to Karnataka State, India - A Case Study.**

Kchouk Sarra **FR PAPER**

► **Les zones tampons humides artificielles pour réduire les pollutions des nappes par les pesticides issus des réseaux de drainage : une innovation en marche ?**

Ismail Ashraf **ENG PAPER**

► **Drainage Water Reuse Strategic Options and Measures to Alleviate Risk of Failure, Egypt.**

Khaddam Issam **ENG PAPER**

► **Optimal layout and salinity management of drip irrigation systems.**

Tuyishime Olive **ENG POSTER**

► **Impact of Irrigation Regime and Controlled Drainage on Nitrogen - Salt dynamics and Rice Performance in the Muvumba Salt affected Soils, Rwanda.**

Vincent Bernard **ENG PAPER**

► **Simplified hydrological and nitrogen transfer modeling in a subsurface drained Catchment (Orgeval, France) and undrained catchment (Porijõgi, Estonia).**

You can consult all papers on the website of the Conference: icid2015.sciencesconf.org

TUESDAY - 14:00 - 17:30 - BARTHEZ 2

WG HIST WORKSHOP

History of water crisis, old and recent issues (by AFEID and WG HIST)

CHAIRMAN: Kamran EMAMI / MODERATOR: Thierry RUF

At the start of the 21st century, in many regions, water crisis seems to be one of the most complex issues for humankind. In this context, the water wisdom of the past can be regarded as previous experiences of many generations who face the great challenge of looking for adaptations for ensuring sustainable development.

Ruf Thierry **ENG** **PAPER**

► **History of the participatory irrigation management and the transfer of management authority: science issues, general governance and local actions to solve water crisis.**

Emami Kamran **ENG** **POSTER**

► **The synergy of history and El Niño Southern Oscillation for enhanced drought and flood management.**

Backeberg Gerhard **ENG** **PAPER**

► **Sustainable irrigation in South Africa: Evidence from history.**

Jones Bruce **ENG** **PAPER**

► **Water Management and Mismanagement in Early China.**

Piergiorgio Manciola **ENG** **PAPER**

► **The San Patrizio well: an alternative and defensible solution to the roman water supply systems.**

Agrawal Rajnikant **ENG** **PAPER**

► **Rainwater harvesting in Ancient Times and its Sustainable Modern techniques.**

Sudan Falendra Kumar **ENG** **PAPER**

► **Water Conflict and Cooperation between India and Pakistan: Opportunities and Challenges for Ensuring Food Security.**

Maughan Nicolas **ENG** **PAPER**

► **Water crises management in Marseilles in the early 19th century: specificities and temporalities of socio-political answers (1800-1850).**

Ansari Taha **FR** **PAPER**

► **La préservation des foggaras dans la province d'Adrar en l'Algérie.**

Fahimullah Ziaee **ENG** **PAPER**

► **Water Wisdom and Sustainability: Insights from Irrigation Systems in Afghanistan.**

Marco Arcieri **ENG** **PAPER**

► **Aqua Augusta: a system of aqueducts from the first century B.C. serving the Gulf of Naples.**

Prechawit Chaiwat **ENG** **POSTER**

► **History of water crisis in thailand and its preparation for the 2015 drought.**

Lucio Ubertini **ENG** **POSTER**

► **Hydraulic risk perception of Trasimeno lake: historical and actual issues.**

Tan Chih-Hung **ENG** **POSTER**

► **Water Wisdom in Taiwan-Irrigation Ponds on a Tableland.**

Goel Vratish **ENG** **POSTER**

► **Flood Control Management in Siem reap River Basin, Cambodia.**

Agrawal Rajnikant **ENG** **POSTER**

► **Smart Water for Smart Cities in India.**

Siddiqui Qazi **ENG** **POSTER**

► **Balloki Barrage in Pakistan-World Heritage Irrigation Structure.**

Abou El Hassan Waleed **ENG** **POSTER**

► **Actual Changes in the Irrigation Management with 30 Year Improvement Project: A Case of the Dakalt District in the Nile Delta.**

WEDNESDAY, OCTOBER 14

WEDNESDAY - 9:00 - 15:30 - RONDELET 1

IRRIGATION AND ENERGY WORKSHOP (by AFEID and CSIC Cordoba)

CHAIRMAN: Gilles BELAUD / MODERATOR: Luciano MATHEOS

Compared to the traditional gravity-fed irrigation systems, most modern systems are energy consumers. Irrigation energy footprint and cost are increasing steadily. Therefore, it is not surprising that, more and more, farmers and water users associations are engaged in active research and negotiations to reduce energy consumption, increase energy efficiency, and reduce energy costs and tariffs. On the other hand, on-farm energy generation, such as hydraulic energy, solar energy, geo-energy and bio-energy, is another option that farmers and water users associations are investigating and testing to reduce their energy dependence and cost. More specific energy saving measures are: optimization of the design and operation of pumping stations to minimize investment and energy cost; identification and correction of critical points in the network that are responsible for extra energy consumption; network sectoring for water rotation by grouping hydrants according to homogeneous energy demand. Irrigation & energy is therefore a multi-faceted multiple-actor issue. Technical, economic and environmental aspects are linked in many ways involving farmers, water users associations, energy suppliers, engineers, and other stakeholders.

The objective of the workshop is to open a forum where researchers can show their research outcomes, where all actors can discuss their interests, where innovation finds a medium to flow and spawn. The workshop could also be the seed of a new working group on irrigation & energy.

Rafael González Perea **ENG** **PAPER**

► **Reducing the energy demand in irrigation water supply systems. Experiences from southern Europe.**

Salem Osama **ENG** **PAPER**

► **Prospects of Concentrated PhotoVoltaic (CPV) System in Wadi El natron Area, Egypt.**

Elshaikh Sami **ENG** **PAPER**

► **Enhancing hydraulic performance and energy saving of pumps using Computational Fluid Dynamics (CFD).**

Maruejols Franck **ENG** **PAPER**

► **Optimisation énergétique du système BRL.**

Lejars Caroline **ENG** **PAPER**

► **What are the indirect and direct effects of irrigation policy on energy costs? A social accounting matrix assessment in Tadla (Morocco).**

Prevost François **FR** **PAPER**

► **Réalisation et exploitation d'une microcentrale : modalités d'un partenariat durable entre l'ASCO des irrigants de la Crau et la Société du Canal de Provence.**

Ben Elghali Seifeddine **ENG** **PAPER**

► **An analysis of energetic cost for an irrigation network in France.**

Gomrokchi Afshin **ENG** **PAPER**

► **Modeling Energy Saving in Operation of Pressurized Irrigation Systems.**

Yildiz Gülagaci Remziye **ENG** **PAPER**

► **Assessment Of Change From Existing Irrigation System To Pressure Irrigation System in SAP Region in the Framework of Value Engineering.**

Sethi Davinder **ENG** **PAPER**

► **Innovative Solar-Powered Solutions for Agriculture.**

Aliod Sebastian Ricardo **ENG** **PAPER**

► **Algorithms and tools for optimum scheduling of on-demand irrigation for an effective energy cost reduction.**

Mateos Luciano **ENG** **PAPER**

► **Irrigation pumping efficiency at smallholdings in North East Brazil.**

Anwar Nadjadji **ENG** **PAPER**

► **Water allocation optimization for combined users of energy generations and irrigation demands at the upstream Brantas River reach using mixed integer linear programming method.**

Gendre Sophie **ENG** **PAPER**

► **Hydraulic irrigation installation diagnosis: knowing of the system to improve it.**

Graziano Ghinassi **ENG** **PAPER**

► **Carbon Footprint of three different irrigation systems.**

Zapata Nery **ENG** **PAPER**

► **Collective irrigation network design and management for energy optimization: the CINTEGRAL tool.**

Pandey Divya **ENG** **PAPER**

► **Harnessing the sun for an evergreen revolution: A study of solar powered irrigation in Bihar, India.**

Buisson Marie-Charlotte **ENG** **PAPER**

► **What does pump sets electrification change? Impacts on cropping patterns, productivity and incomes in West Bengal.**

Auger Vincent **FR** **PAPER**

► **Modernisation de périmètres irrigués dans le nord ouest argentin.**

Farag Hanan **ENG** **POSTER**

► **Drip Irrigation System for Maize to Reduce Food, Water and Energy Scarcity in Egypt.**

You can consult all papers on the website of the Conference: icid2015.sciencesconf.org

WEDNESDAY - 9:00 - 12:30 - BARTHEZ 1

■ **WG CROPS WORKSHOP (2/2)**
Precision Irrigation (by AFEID and WG CROPS)

CHAIRMAN: Ragab RAGAB / MODERATOR: Pierre RUELLE

Patil Sachin ENG PAPER

► **Hydraulic study, design & analysis of different geometry of emitter labyrinths used in drip irrigation for clog free performance.**

Putthividhya Aksara ENG PAPER

► **Water Requirements and Irrigation Scheduling of Ban Khai Irrigation Project Using GIS and CropWat Model in Rayong Province Thailand.**

Roux Andre ENG PAPER

► **FruitLook: A spacial approach to assess and improve water use efficiency of vineyards and deciduous fruit crop orchards in South Africa.**

Heydari Nader ENG PAPER

► **Designing precise surface irrigation systems.**

Elbably Alaa ENG PAPER

► **Advanced irrigation technology for enhancing field water use efficiency and precision irrigation for rice (a case study-Egypt).**

Ragab Ragab ENG PAPER

► **Can measurements of actual evapo-transpiration and large-area soil moisture deficit improve irrigation scheduling to reduce water use?**

Hartani Tarik ENG PAPER

► **Low pressure subsurface irrigation with permeable pipes for a precision and optimal irrigation management.**

Li Jiusheng ENG PAPER

► **Field test of system performance of a variable rate center pivot applying to winter wheat irrigation.**

Kaluvai Yella Reddy ENG PAPER

► **Sensors for water monitoring in paddy fields for improved on farm water management.**

Bourziza Rqia ENG PAPER

► **Modeling of water transfert of subsurface drip irrigation under oases conditions.**

Wu Ray-Shyan ENG PAPER

► **In the Precision Irrigation Model of Paddy Field - A Case Study in Chang-hua, Taiwan.**

Ghazouani Hiba ENG PAPER

► **Using Hydrus-2D model for irrigation scheduling of potatoes crop under subsurface drip irrigation in Central Tunisia.**

Admasu Zeleke Belay ENG PAPER

► **Effect of drip lateral spacing and irrigation schedule on drip irrigated crops: tomato and onion production, Kobo Girrana valley, Ethiopia.**

Patil Mukund ENG PAPER

► **Simple and Farmers' Friendly Decision Support System for Enhancing Water Productivity in Agriculture.**

Wang Ruo-Qian (roger) ENG PAPER

► **A Novel Bio-inspired Pressure Compensating Emitter for Low-Cost Drip Irrigation Systems.**

Randev Ashwani ENG PAPER

► **Economic analysis of crops' productivity potential and drip irrigation system in India - Policy Implications.**

Perniola Michele ENG PAPER

► **Sustainable use of water resources for food security.**

Abou El Hassan Waleed ENG PAPER

► **Validation of accurate determination of maize water requirements in Nile Delta**

Yildiz Gülagaci Remziye ENG POSTER

► **Salinisation dynamics and solution suggestions in soil of Harran Plain irrigation projects.**

Mukhamedjanov Shukhrat ENG POSTER

► **Adaptation to climate change in irrigated agriculture.**

Gaafar Ibrahim ENG POSTER

► **Assessment of irrigation water management in Nasrallah Area, Damanhour Governorate, Egypt.**

Anwar Nadjadjji ENG POSTER

► **Optimization of Nipah reservoir operation for irrigation using linear programming.**

Elmaghraby Taha ENG POSTER

► **Effect of compost on Maize (Zea mays) yield and some clay soil physical properties under deficit irrigation.**

Barakat Mohammad ENG POSTER

► **Influence of the irrigation technique on the nitrogen budget: a review.**

WEDNESDAY - 9:00 - 12:30 - JOFFRE 5

■ **WG ENV WORKSHOP**
Ecosystem Services and Multi-Functionality of Irrigation and Drainage Systems (by AFEID and WG ENV)

CHAIRMAN: Sylvain PERRET

Irrigation and drainage systems worldwide interact with complex, dynamic and diverse environments which include physical, chemical, ecological, climatic, social, human and economic dimensions. Environmental sustainability is a moving target which evolves as the complexities of the 'Nature' unfold, as new societal challenges emerge. The three pillars of 'Green Revolution', - high yielding varieties, chemical inputs like fertilizer and pesticides, and irrigation - have had a definite positive outcome in terms of increased food production, which prevented hunger in many parts of the world. But it also had negative impacts on the environment. The way water in general and water for agriculture in particular is managed, may harm the environment in a variety of ways: groundwater depletion; land degradation and water contamination; depletion of resources; and loss of ecosystem services, biodiversity, and habitats. However, most irrigation and drainage systems also produce a number of goods, services and positive amenities, which benefit local communities and societies at large.

ICID has long been concerned with the environmental impacts of irrigation and has been addressing the issues. In order to bank upon, the ICID Working Group on Environment (WG-ENV) was established in 2008 with the objective to provide guidance to policy makers, planners, designers, and managers in the irrigation and drainage sector on the environmental aspects of drainage and irrigation systems. Those aspects encompass environmental, social, and economic impacts of agricultural water systems, both positive and negative ones.

Damien Jourdain ENG PAPER

► **Value of Ecosystems Services provided by Rice Irrigated Agriculture: A case study in Thailand.**

Ricart Casadevall Sandra ENG PAPER

► **Stakeholders, multi-functionality, and governance: how to manage competing water uses and improve decision-making processes in three Southern European irrigation systems.**

Chiueh Ya-Wen ENG PAPER

► **How much does 1 degree celcius worth? The economic value of paddy field heat sink effect evaluate by the contingent valuation method.**

Abdullah Mohd Yazid ENG PAPER

► **Case Study for Monetary Assessment of Flood Control and Sediment Control Function of Paddy Fields in Muda Irrigation Scheme, Malaysia.**

Antonín Zajíček ENG PAPER

► **Harmonize various types of ecosystem services of agricultural drainage systems in the Czech Republic using preventive and remedial nitrogen strategies.**

Morardet Sylvie ENG PAPER

► **Exploring trade-offs between irrigation and other water-related services in a Mediterranean watershed: A deliberative valuation approach.**

Yoon Kwangsik ENG PAPER

► **Evaluation of Multi-Functionality of Agricultural Water in Korea by AHP method.**

Atsushi Marui ENG POSTER

► **Experimental Study of Swimming Characteristics of Japanese Rice Fish (Oryzias latipes latipes) for paddy-field Fishway Design.**

Aoda Tadao ENG POSTER

► **Breeding of the Environmental Awareness of Citizen through Dragonfly Investigation at Niigata, Japan.**

Soonthornnonda Puripus ENG POSTER

► **An Optional Approach for Flood Mitigation and Avoiding Groundwater Depletion in Thailand: A Review of the Conjunctive Water Management.**

Nakvachara Penpicha ENG POSTER

► **The Socio-Environmental Impacts of Water Resource Restoration Projects Taken at Some Local Areas in Thailand under Decentralized Management.**

WEDNESDAY - 14:00 - 15:30 - EINSTEIN

■ **POSTER SESSION (2/2)**

Abbas Muhammad ENG POSTER

► **On Farm Irrigation Practices and Climate Change Effects on Economic Growth.**

Agele Samuel ENG POSTER

► **Drip irrigation strategies for enhancing water productivity and hydrological assets of tropical wetland-based farming for food security.**

Aliod Sebastian Ricardo ENG POSTER

► **Advance optimum design and analysis tools for drip irrigation hydraulics in complex limiting conditions.**

Babitska Olena ENG POSTER

► **Directions of drainage systems improvement in the South of Ukraine.**

Barbe Audrey ENG POSTER

► **Water management in the Tiout Oasis, Morocco: friction between tourism development and agricultural improvements.**

Bondarik Irina ENG POSTER

► **Integrated use of ground water in agriculture.**

Changjo Oh ENG POSTER

► **Development of Smart Water Management System using IoT Technology.**

Chiueh Ya-Wen ENG POSTER

► **Evaluation of the farmers' willingness to accept price for transferring Agricultural water to industrial sectors during drought - The application of Contingent Valuation Method.**

Choi Joongdae ENG POSTER

► **Effect of selected structural and non-structural BMPs on agricultural NPS pollution reduction in Korea.**

You can consult all papers on the website of the Conference: icid2015.sciencesconf.org

Fayrap Aynur ENG POSTER

▶ **The Experiences of Modern Irrigation Systems and Methods in Turkey.**

Jan Ming-Young ENG POSTER

▶ **The simulation of water demand and supply scenarios by using the system dynamics tool.**

Jang Jeongryeol ENG POSTER

▶ **Pre Survey Results for Establishing of Governance to Manage Agricultural Nonpoint Source Pollution in Saemangeum Area.**

Jang Jeongryeol ENG POSTER

▶ **Monitoring and Modeling NPS Pollutant Loads in the Reservoir Irrigated Paddy Block.**

Jomaa Ihab ENG POSTER

▶ **The Alarming Unsustainable Use of Groundwater Resources in Lebanon.**

Ker Rault Philippe ENG POSTER

▶ **Wastewater Reuse for Irrigation in Saline Arid region: lessons learnt from Algerian Sahara desert.**

Kouadri Sameut Moussa ENG POSTER

▶ **The new irrigation with saline groundwater and artichoke production in Lower Cheliff (Algeria).**

Kumnerdpet Wachiraporn ENG POSTER

▶ **Local initiative for integrated governance of surface water and groundwater.**

Maria Laura Luprano ENG POSTER

▶ **Removal of antibiotic resistance genes by two innovative wastewater treatment solutions for water reuse in agriculture.**

Oladipo Isaac ENG POSTER

▶ **Development of Computer Aided Drip Irrigation Design System for Nigerian Agricultural Environment.**

Ongkosongo Otto Sudarmadji ENG POSTER

▶ **Strategies to combat coastal erosion and inundation in resilient low coastal land.**

Putthividhya Aksara ENG POSTER

▶ **Agricultural Contamination in Soil and Groundwater from Irrigated Farmland in Thailand: Risk Implications for Sustainable Agriculture and Food Safety.**

Rizk Nancy ENG POSTER

▶ **Chemical and biological clogging within pipes and emitters using treated waste water in irrigation.**

Saboory Mohammad Shoaib ENG POSTER

▶ **Determining Potential Sites of Water Harvesting Structures using Multi-Criteria Evaluation and GIS in Khulm Watershed, Afghanistan.**

Sakata Satoshi ENG POSTER

▶ **Sprinkler irrigation for preventing heat wave effects on rice.**

Soleymani Mirmahdi ENG POSTER

▶ **Status of green water in North Khorasan Province.**

Villtholth Karen ENG POSTER

▶ **Global food production: the contribution of groundwater and depleting aquifers.**

Wafae Elkhoumsi ENG POSTER

▶ **Contribution of saline groundwater table to date palm water use in oases area.**

Yuttaphan Aphantree ENG POSTER

▶ **Probability of Dry and Wet Spells in Northern Part of Thailand during El Niño, La Niña and Normal Events.**

Zare Bahari Mostafa ENG POSTER

▶ **Water management and economic affect in Determination of Irrigation Network area Case Study: Shorijeh irrigation project.**

Goel Vratish ENG POSTER

▶ **Quantitative assessment of surface water resources in Sankuru river basin, DR Congo.**

16:00 - 18:00 - EINSTEIN

CLOSING CEREMONY

Master of Ceremony: François BRELLE

16:00
Beginning of the Closing Ceremony
 • Speech of Sami BOUARFA, President of ICID2015 Scientific Committee

16:10
Sessions Reporting
 • Sessions key messages by sessions chairmen

17:20
Invitation for WIF 2
 • Speech of Lertviroj KOWATTNA, President of Thai Committee

17:30
Sahel Irrigation Initiative Program Presentation
 • Allocution de Amadou MOUSSA (ARID), François ONIMUS (World Bank), Djimé ADOUM (CILSS)

18:00
End of the Closing Ceremony
 • Speech of François BRELLE

THURSDAY, OCTOBER 15

THURSDAY - 9:00 - 17:30 - JOFFRE 1

■ PPP WORKSHOP

Public-Private Partnerships (by the World Bank, the French Agency for Development and AFEID)

CHAIRMAN: François BRELLE / MODERATORS: Nicolas DAURENSAN, Etienne DRESSAYRE & Florence MALERBE

During the last ten years, food security has come back to center stage as a major challenge for future development. Efficient, effective and sustainable irrigation and drainage schemes can play an important role to increase and stabilize agricultural production as well as boost economic development in rural areas. But irrigation and drainage development implies costly investments. Agricultural water management has also proved to be a challenge in many countries having to balance water rights, user rights and commercial interests. In this context, PPPs have been used as one of the tools to accelerate irrigation expansion, improve operation and maintenance services, and look at establishing a sustainable operations and maintenance regime that is less dependent on public subsidies. In addition, the introduction of the private sector can inject expertise and foster agricultural intensification.

The bringing together of public policies with reliable private partners through these partnerships can, in various forms, be a way to facilitate the financing of projects, optimize investments, professionalize irrigation water delivery service and intensify the food production. The Workshop on Public-Private Partnerships in irrigation aims at presenting and discussing contrasting PPP experiences in irrigation, showcasing successes and failures, so as to identify conditions under which financial and institutional arrangements could be defined in order to meet the objectives of the different stakeholders involved.

Format of the Day:

The day has been designed as an interactive platform in which different views from both the public and the private sector can be exchanged in an open and candid forum. The morning starts with two presentations aimed at providing some overarching issues related to the irrigation and drainage sector, highlighting the challenges of the sector, its recent trends and future prospects for partnerships between the public and private sectors. Given the pre-eminent experiences of the French irrigation and drainage sector these are highlighted through a historical perspective leading up to today's challenges, as well as setting out the future prospects for the sector.

The afternoon sessions are comprised initially of a 'Posters' exhibition in which a comprehensive array of projects have been selected to provide participants with the opportunity to learn about such varied experiences. Participants are expected to walk around an open floor where the projects posters will be exhibited and familiarize themselves with the different experiences in PPPs. The posters will present the most salient features of each project, and will provide an opportunity to have interactive discussions with the parties involved in each project. These cases will then be referred to during the two afternoon panel sessions.

The panel sessions after lunch will be seeking to highlight the different perspectives of the public and private sector when entering into PPPs in irrigation and drainage. These sessions will be panel discussions in which critical players will be present for each round table. A moderator will present panelists with a multitude of questions that seek to address the different perspectives and viewpoints that both the public and private sector have. The day will end with a wrap up session that will summarise how well (or not) the different expectations from both the public and private sector are met, and whether there are new points of view that can be integrated to better improve the design, development and sustainability of PPPs in irrigation.

9:00 - Introductory remarks

by Francois Brelle, AFEID President and Chairman of the Day

9:10 - Keynote

Reflection of Irrigation PPPs around the world and the new irrigation PPP toolkit

By Cledean Mandri-Perrott and Jyoti Bisbey (PPP unit, World Bank Group)

10:00

French model of PPP in irrigation : BRL, CACG and SCP, 3 Regional Water System concession-holders, operators and developers.

By Etienne Dressayre (BRL), Nicolas Daurensan (CACG) and Florence Malerbe (SCP)

11:00 - Coffee Break

11:30

Worldwide PPP cases presented through a Posters exhibition

13:00 - Lunch

14:00 - Round table 1

Public perspectives: Expectations about PPPs in irrigation, challenges for its implementation and how to ensure long term sustainability.

This session is designed to discuss what are the expectations that public entities typically have with respect to PPPs in irrigation. Issues related to the planning aspects prior to entering into a PPP will be discussed including aspects of the political economy and the challenges granting authorities have when planning and taking to market PPPs.

15:45 - Round table 2

Private Perspectives: What are the typical conditions that the private sector looks at when entering into a PPP?

After having heard the public perspective in the previous round table, this session will seek to explore what are the main drivers of the private sector. This will start by exploring what are the minimum preconditions that a private party would look at prior to entering into a PPP, especially in Irrigation. It will then look at aspects of investment, mobilisation of resources and technical expertise seeking ultimately to understand what are the drivers for their long-term involvement in the sector.

17:15 - Wrap up and conclusions

VISITS

TECHNICAL
AND CULTURAL

TECHNICAL TOURS

POND OF MONTADY



Wednesday, October 14, 2015 | 9:00-12:30

Departure: Montpellier's Corum (Level 0)
Place: Pond of Montady | **Supervisor:** Thierry Ruf
Target Audience: All participants, particularly the ICID Working Group on History (WG HIST) and the ICID Working Group on Drainage (WG SDG)
Accessibility: Free and open, subject to availability.



PROGRAM AND DETAILS

The Pond was drained in 1247. The phylloxera crisis (around 1870) then shaped the wine-making vocation of Montady. The Pond's natural form as a closed basin allows many vines to be submerged, which was an efficient method to fight the plague. In order to increase protection of the vineyard, a gravity irrigation network was installed in 1881 that draws water from the Midday Canal. The introduction of new crops, especially fodders and vegetables, that require more water, led to the installation of a second irrigation network after 1960 (by the BRL society). It consists of underground water supply pipes that pressurized water to allow it to spray. Moreover, cultivation of this area was further enhanced by its proximity with major communication routes (Roman Way, Midday Canal, Railway).

NOWMMA PROJECT



Wednesday, October 14, 2015 | 9:00-12:30

Departure: Montpellier's Corum (Level 0)
Place: Mauguio (34) | **Supervisor:** Bruno Molle
Target Audience: All participants, particularly the researchers of the W4CROP Project and the ICID Working Group on use of poor quality water for irrigation (WG PQW)
Accessibility: Free and open, subject to availability.



PROGRAM AND DETAILS

Visit to the Mauguio site, with its platform of dedication to the development of the reuse of treated wastewater (collaborative project NOWMMA). This station responds to the demographic evolution and common activities of Mauguio and Mudaison (Hérault, France). Its construction integrates the flood prone nature of the site, containment works (sound proofing, deodorization), an advanced treatment of the nitrogen and phosphorus in order to fight against the eutrophication of l'Etang de l'Or. After the transition through the rehabilitation of old lagoons in the environmental transit zone, the discharge of the treated water, takes place in either a Mediterranean waterway system ("Le Salaison") or in a bordering humid zone.

IRSTEA EXPERIMENTAL PLATFORM



Wednesday, October 14, 2015 | 9:00-12:30

Departure: Montpellier's Corum (Level 0)
Place: Montpellier Lavalette | **Supervisor:** Patrick Rosique
Target Audience: All participants and particularly the people interested by research activities
Accessibility: Free and open, subject to availability.



PROGRAM AND DETAILS

PRestI is the new platform created by Irstea on the Lavalette site located in the vicinity of Montpellier. This platform is constituted of an experimental station that was established in 1989 and a lab that was recently transferred from the center of Aix-en-Provence. The station has 5ha equipped for experimentation in irrigation. Automatic overpressure feeds the parcels with the water from the BRL network (Bas Rhône Languedoc, see the technical visit for 16/10/2015) to implement different irrigation systems such as drip irrigation, surface irrigation and sprinkler irrigation. The infrastructure is completed with measuring equipment for the water supply, the soil hydrodynamic, and the hydric and physiological condition of the crop. The field experimental work is also used to develop operational models of crops and of irrigation piloting as well as hydric transfers at the plot scale. The lab is equipped to conduct both tests for industry, R&D experiment and pure research on the performance of irrigation distribution systems, and the drivers of such performance changing over time, under climate influence or water quality. The main research focus could be summarized as follows:

- in sprinkler irrigation the consequences of dispersion mechanism on the sensitivity of sprinklers to wind, its consequences on uniformity of distribution, evaporation and drift. In the case of drift the last investigations concerned the potential dispersion of aerosols out of the wetted area when applying treated waste waters in a reuse perspective
- in drip irrigation the consequences of water quality (particles, nutrient) on drippers life duration. The work on the observation and simulation of flows in transparent drippers where particles may sediment, biofilm may develop and scaling may take place. High level equipment will be presented for droplet size and path in sprinkler irrigation or flow analysis inside transparent drippers flowpath (IR rain gauge, PIV and PTV facility)

The aim of this infrastructure is to be support for the research lead within the Axe 3 of the UMR G-Eau "Practices and use of water" but also to work in partnership with industrial irrigation and agricultural organizations.

VISIT OF GIGNAC WUA



Wednesday, October 14, 2015 | 9:00-12:30

Departure: Montpellier's Corum (Level 0)
Place: The Gignac Canal | **Time slot:** 9h-12h30 | **Supervisor:** Céline Hugodot
Target Audience: All participants and particularly the people interested by research activities
Accessibility: Free and open, subject to availability.



PROGRAM AND DETAILS

The ASA of the Gignac Canal is an Association located in the middle valley of the Hérault, 30 km north-west of Montpellier. It brings together landowners within a perimeter of 3000 ha. The Authorized Syndical Association was founded in 1879. It aims to create and maintain a Canal derived from the Hérault River in order to supply water to the concerned perimeter. With 50 km of transport networks (primary network) and 250 km of distribution networks (secondary network), it allows water to be taken from the Hérault River (the sole source) and to serve some 10,000 plots belonging to 4 000 members of the perimeter, spread over 11 municipalities. The irrigated area is occupied by 67% of vineyards and 22% of diversification crops or gardens. Approximately 10% of the perimeter is occupied by quarries and sandpits, at different stages of exploitation. Historically gravity-fed and organized around a water tower, water distribution among users has been the subject of a modernization program since 1990. The program aims to eventually implement a full conversion of networks towards a continued water supply under pressure. This modernization is required due to the scarcity of water resources and the need to organize the sharing between different users (drinking water, swimming, tourist use, fishing, aquatic needs, and irrigation). It consists of conversion of gravity-fed aboveground distribution networks to buried pipelines under pressure. Beyond the ecological interest, this modernization is an important factor for local development in agriculture, as well as for other uses (recreational use, use of raw water for industrial processes). It allows for a significant reduction in water withdrawals (efficiency gain), and enhances ease of use by adoption of innovative irrigation systems (in-field drip irrigation, fertirrigation, automation of watering systems, etc.). In 2015, nearly 40% of the perimeter provides distribution under pressure (overpressure at minimum 2 bar, with 150 micron collective filtration), one third of the perimeter is equipped with underground pipes allowing a continued water service without pressure and only 30% still operates traditionally. The modernization program (Canal Contract) is expected to be finalized in 2018. During this technical visit you will discover the Canal intake in the Hérault River at la Combe du Cor and an overpressure station in a recently modernized sector.



REGIONAL WATER SYSTEM: AQUA DOMITIA PROGRAM AND THE RHÔNE WATER TRANSFER STRUCTURES



Friday, October 16, 2015 | 9:30-17:00

Departure: Montpellier's Corum (Level 0)

Places: Mauguio, Nîmes, Fourques, Bellegarde

Target public: addressed to all participants of the Conference

Accessibility: 50 €

Organizer: BRL Group, the Languedoc-Roussillon Regional Water System concession-holder and the asset manager in charge of modernizing and extending the water system (Aqua Domitia program)

PROGRAM AND DETAILS

Aqua Domitia: a major project to secure water supply in the Languedoc-Roussillon Region

The Aqua Domitia program is the most important project for the extension of the Regional Water System since its creation. It provides nearly 150 km through buried pipelines as a second resource to guarantee the long-term satisfaction of the water needs of about one hundred towns between Montpellier and Narbonne in a sustainable manner. Its implementation within the framework of the Regional Public Water Service, launched by the Languedoc-Roussillon Region in 2011, aims to reconcile economic development and environmental protection. It is composed of 6 links (Mailion Sud, Mailion Nord and Ouest Montpellier, Mailion Nord Gardiole, Mailion Biterrois, Mailion Littoral Audois and Mailion Minervois).

During the visit the participants will discover one of the projects in progress on the South Montpellier link. It concerns the creation of a new pumping station on the site of la Méjanelle (Mauguio). This station will allow the pressurization of the entire Aqua Domitia project.



Key-pieces of the Regional Water System

The Rhône waters transfer structures are key-pieces of the Regional Water System, owned by the Languedoc-Roussillon Regional Council, designed and managed by BRL.

During the visit, the participants will discover the intake structure, equipped to take up to 75m³/s from the Rhône River, and the Aristide Dumont station, the most important of 80 pumping stations which puts pressure on the network. Equipped with 9 pumps of 2 to 7m³/s, this structure helps to raise the water from the Rhône and to transfer it into the Philippe Lamour canal to serve the 60 km of plains and littoral zone up to Montpellier, and into les Costières canal, then into Campagne canal to serve the Nîmes region on 26 km.

Interest of the sites

Designed and managed by BRL, the structures of the Regional Water System play a major role in the economic development of the Languedoc-Roussillon Region. They protect the territories they supply from droughts and provide for the future capacity to reduce the pressure on local weakened resources, through the provision of alternative resources with high capacity for renewal.

The program of this visit includes: presentation of the Aqua Domitia program / Visit to one of the projects in progress (Mauguio) / Visit of the intake in Fourques (Gard) near Arles / Visit of Aristide Dumont pumping station in Bellegarde (Gard) / Presentation of the remote monitoring system managed by BRL / Overview of Philippe Lamour canal.



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DINNER & RECEPTION

THAI RECEPTION

Monday, October 12, 2015 | 19:00

Place: Corum | Accessibility: Free

Target Audience: Open to any registered guest invited by the THAICID

DETAILS

Thai cocktail organized by the Thai National Committee on Irrigation and Drainage (THAICID).

MEXICAN RECEPTION

Tuesday, October 13, 2015 | 19:00

Place: Corum | Accessibility: Free

Target Audience: Open to any registered guest invited by the MXCID

DETAILS

Mexican dinner organized by the Mexican National Committee on Irrigation and Drainage (MXCID)

GALA DINNER

Wednesday, October 14, 2015 | 19:00

Place: The Château de Pouget | Accessibility: 50€

Target Audience: Open to any registered person with invitation



© CHÂTEAU DE POUGET
CHÂTEAU DE POUGET

DETAILS

The Gala Dinner is the most important social event of the ICID2015 Conference. It will be held on the evening of the 14th October 2015 in the marvelous Château de Pouget. With delicious French cuisine and musical performances and entertainment, it will be the occasion for you to have a little break in the middle of the week.

MENU

Marinated vegetables and red mullet, citron dressing

Salmon filet with fresh mint in crispy pastry

Roquefort (blue cheese) on crushed walnuts, bed of lettuce and muscat sirop

Lemon meringue on breton shortbread red berries and basil sauce

For special menus please contact us directly:
icid2015@irstea.fr

Wine is offered by Les Vignerons de la Vicomté
www.vicomtedaumelas.fr



CULTURAL VISITS

SAINT-GUILHEM-LE-DÉSERT AND CLAMOUSE'S CAVES

HALF-DAY
 Monday, October 12, 2015 | From 14:00 to 18:00
 Departure: Montpellier's Corum (Level 0) | Accessibility: 30 €
 Target Audience: Any registered participant, particularly accompanying persons

DETAILS

Accompanied by a guide, you will discover one of the most beautiful villages of France. This medieval town is a spiritual step on the way to Saint Jacques de Compostelle, home of the splendid old Abbey Gellone (11th century). You will discover this picturesque village and meet many amazing artisans walking around the village. The day will end with a visit of the famous Grotte de Clamouse. Discovered in 1945, its galleries were forged over many millenniums leaving us a legacy of subterranean marvel, unique in diversity and rarity of its consecrations.

CARCASSONNE

FULL-DAY
 Tuesday, October 13, 2015 | From 9:00 to 18:00
 Departure: Montpellier's Corum (Level 0) | Accessibility: 60 €
 Target Audience: Any registered participant, particularly accompanying persons

DETAILS

Carcassonne is a fortified Medieval City different from any other European city due to its dimensions and its state of preservation. You will discover its impressive fortifications, visible far off in the Aude countryside, and visit the extraordinary 12th century Count's Castle. This masterpiece of Gallo-Roman and medieval architecture is classified as a world heritage site of UNESCO. You will discover the most visited fortified city in Europe and its ramparts during an audio guided tour. Lunch at a restaurant, in the heart of the medieval city.

AIGUES-MORTES

HALF-DAY
 Wednesday, October 14, 2015 | From 9:00 to 12:30
 Departure: Montpellier's Corum (Level 0) | Accessibility: 30 €
 Target Audience: Any registered participant, particularly accompanying persons

DETAILS

You will explore the fortifications of the medieval town of Aigues-Mortes. In the heart of the Camargue, between beaches and vineyards, you will wander around the city of St. Louis and its ramparts, and admire the unique panoramic view over the Camargue wetlands and vineyards. The visit will end with a guided tour of the Salins du Midi. You will cross the salt table in a little train discovering the famous Camargue salt. Visit of the Salt museum.

TOURISTIC VISIT MONTPELLIER

HALF-DAY
 Wednesday, October 14, 2015 | From 14:00 to 16:30
 Departure: Montpellier's Corum (Level 0) | Accessibility: Free
 Target Audience: Any registered participant



DETAILS

The Organizing Committee is happy to suggest that all participants experience this free visit to the historic center of Montpellier. On a comfortable little train you will discover the heart of the city with all of its medieval charm: the place Comédie, the Peyrou Gardens, Saint Anne and Saint Roch, Arc de Triomphe, etc. You will discover the treasures of the city in friendly and original atmosphere and will get to keep an unforgettable souvenir from this visit!

PROGRAM

Four separate departures at 14:00, 14:15, 14:45 and 15:00. Each visit will last 40 minutes.

SAINT-GUILHEM-LE-DÉSERT



CARCASSONNE



NÎMES AND PONT DU GARD

FULL-DAY
 Thursday, October 15, 2015 | From 9:00 to 18:00
 Departure: Montpellier's Corum (Level 0) | Accessibility: 60 €
 Target Audience: Any registered participant, particularly accompanying persons

DETAILS

The day will begin with a tour of the famous Pont du Gard. You will then be taken to the Canal du Passage where you will be served lunch. Following, a guided audio tour of the roman city of Nîmes will be offered to you. During this tour you will discover the historic center of the city. The city is famous for its Bullfighting and Roman architecture, and its magnificent arena will surprise you. After this fabulous visit you will watch a film to be screened at "La Maison Carré de Nîmes". Finally, you will view the exceptional panorama of the city from the top of the Tour Magne.

SÈTE

FULL-DAY
 Friday, October 16, 2015 | From 9:00 to 18:00
 Departure: Montpellier's Corum (Level 0) | Accessibility: 60 €
 Target Audience: Any registered participant, particularly accompanying persons

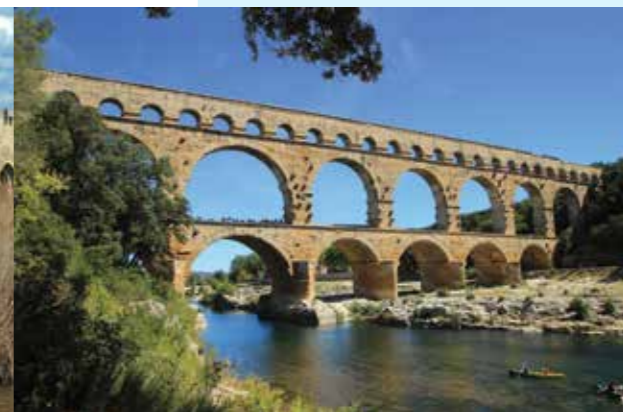
DETAILS

You will discover the city of Sète on the city bus tour with a guide. You will admire panoramic views of Sète, Mont Saint Clair's cross and white stones and Le Pycemetery (where Georges Brassens rests). You will have lunch at La Calanque Restaurant. You will then take a boat trip to discover another aspect of Sète. The day will end with a muscat degustation at the cooperative of Frontignan.

AIGUES-MORTES



PONT DU GARD



TOURISTIC WEEKEND

WEEK END
 From Saturday, October 17, 2015 until Sunday, October 18, 2015
 Departure: Place de l'Europe in Montpellier | Accessibility: 330 €
 Target Audience: Any registered participant



DETAILS

Saturday, October 17, 2015

Departure at 10:00 from the place de l'Europe in Montpellier to join the hotel Mercure at la Grande Motte. Free time in the morning and lunch. Meeting at 13:30 at the hotel to begin the visit with the team from "Camargue Autrement". You will explore the local fauna and flora. During the adventure, a Camargue bull breeder will welcome you for a gourmet break. We will continue the trip across the rice fields. We will then be received in the bicentenary mas with regional wine degustation. With an environmental approach, we offset our CO₂ emissions. We will arrive at the hotel at 18:00.

Sunday, October 18, 2015

Breakfast at the hotel. Departure at 11:00 for a one-hour sea trip to discover the Mediterranean landscape. Departure from la Grande Motte at the beginning of the afternoon for Montpellier.

ACCOMMODATION

The Mercure La Grande Motte welcomes you for the weekend. It is a 4 star hotel. Double or single rooms are available with breakfast.

SÈTE



INFORMATIONS

USEFUL INFORMATIONS
CORUM'S FLOOR PLANS

USEFUL INFORMATIONS

LE CORUM - MONTPELLIER

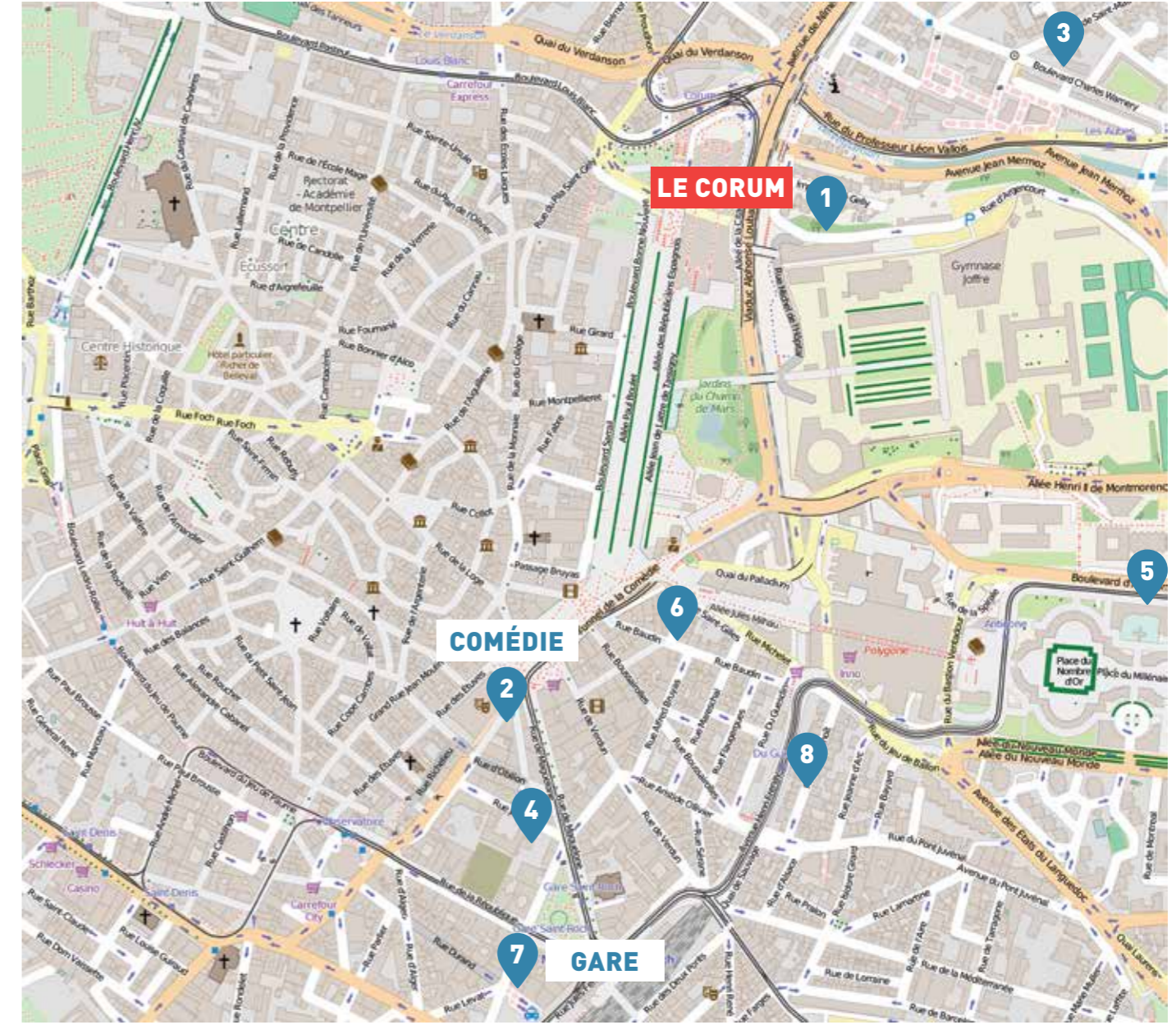
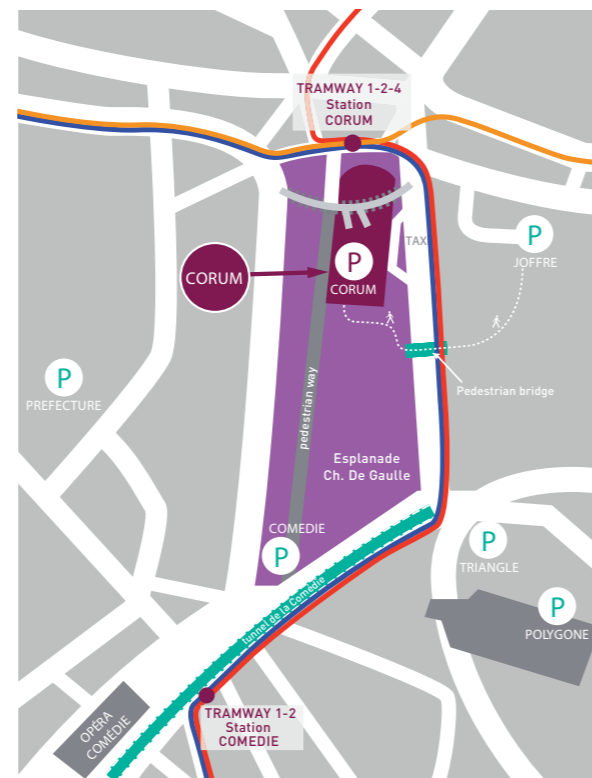


DL MARTORELL

Venue
The ICID2015 Conference will take place at the Corum Conference Center, located at the heart of the Mediterranean city of Montpellier, France.

Le Corum
Esplanade Charles de Gaulle
34000 Montpellier
More information: www.montpellier-event.com

About Montpellier
Situated in the south of France between the Mediterranean Sea and mountains, Montpellier, the city where the sun shines 300 days per year, is the ideal destination to discover one of the most beautiful regions of France.
You can explore the historical center named "Ecusson" with its Place de la Comédie in the heart of the city, and its charming medieval streets filled with artists and numerous cafés and restaurants. Discover Saint Pierre Cathedral and the oldest Medical University in Western Europe, Peyrou with its beautiful royal place and its statue of Louis XIV.
A city of a thousand facets, both modern and historical, young and dynamic, it welcomes numerous festivals, concerts and exhibitions. Montpellier is the place where the climate, the history and the southern French landscapes combine with the famous Mediterranean lifestyle, to make the ICID2015 Conference a unique event.



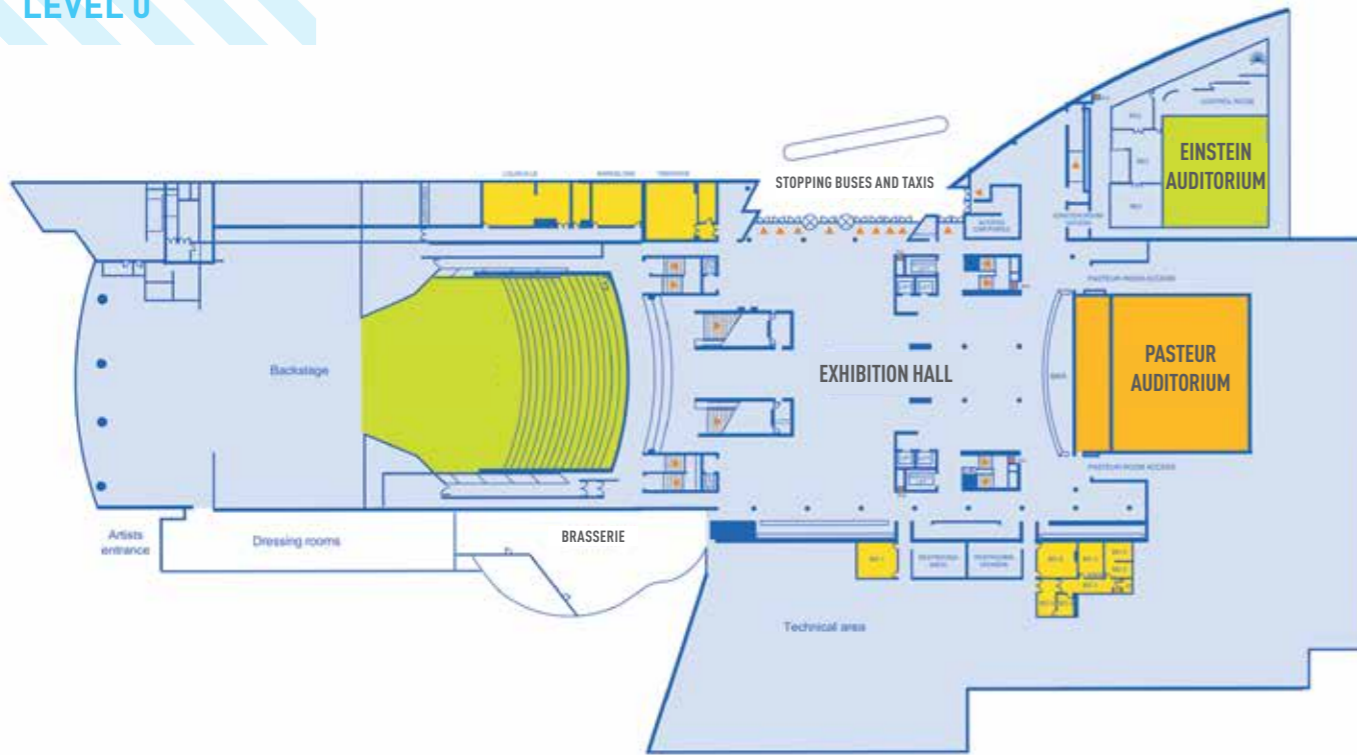
MAP: OPENSTREETMAP

Getting to the Corum is easy!
You will find an inexpensive local tramway system that can connect you to all parts of the city. Do not hesitate to consult the city map included in your Conference Kit. Several tram lines stop near the Corum, and all ICID2015 Conference hotels are within walking distance of the Venue.

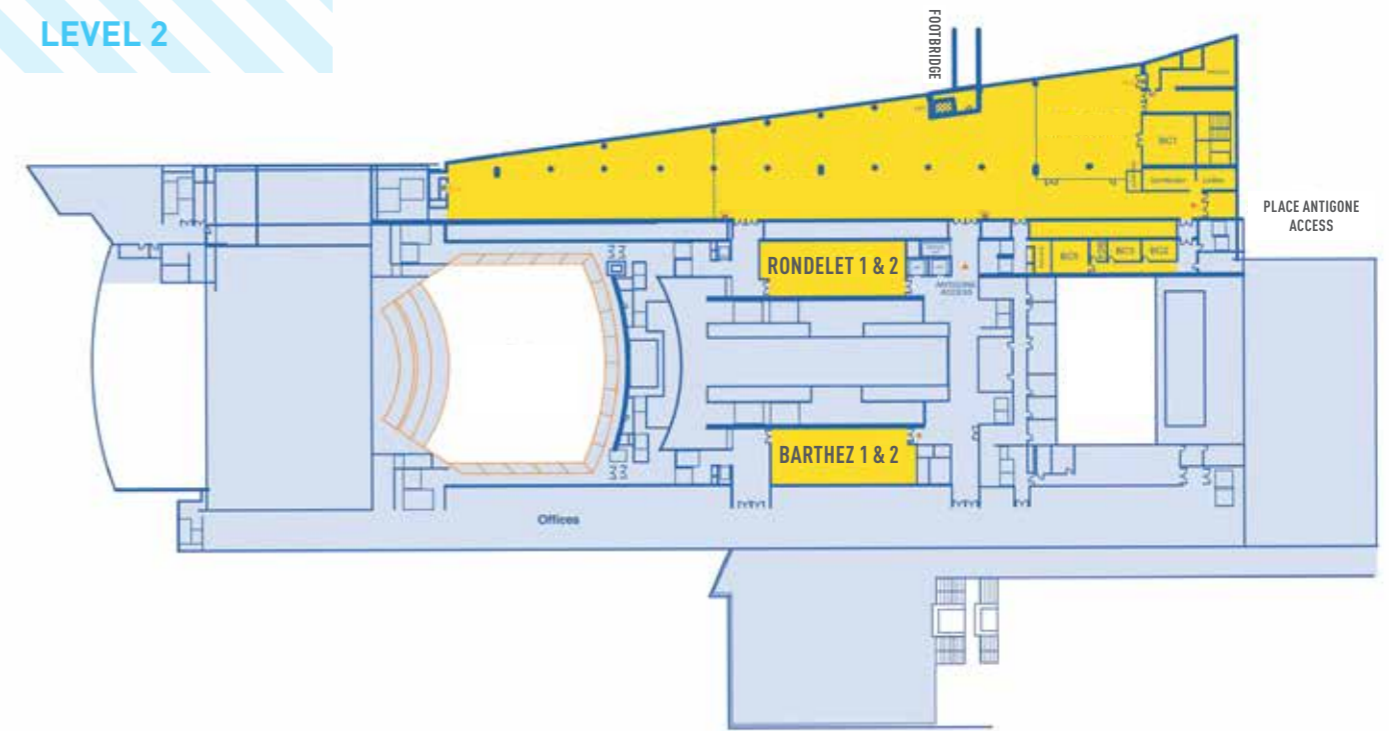
- Hotels**
- 1 Crowne Plaza 4*
 - 2 Grand Hotel du Midi 4*
 - 3 Hôtel Ulysse 3*
 - 4 Royal Hotel 3*
 - 5 Appart'Hotel Citadines Antigone 3*
 - 6 Hôtel Ibis Styles 3*
 - 7 Appart'Hotel Odalys les Occitanes 3*
 - 8 Hôtel Eurociel

CORUM'S FLOOR PLANS

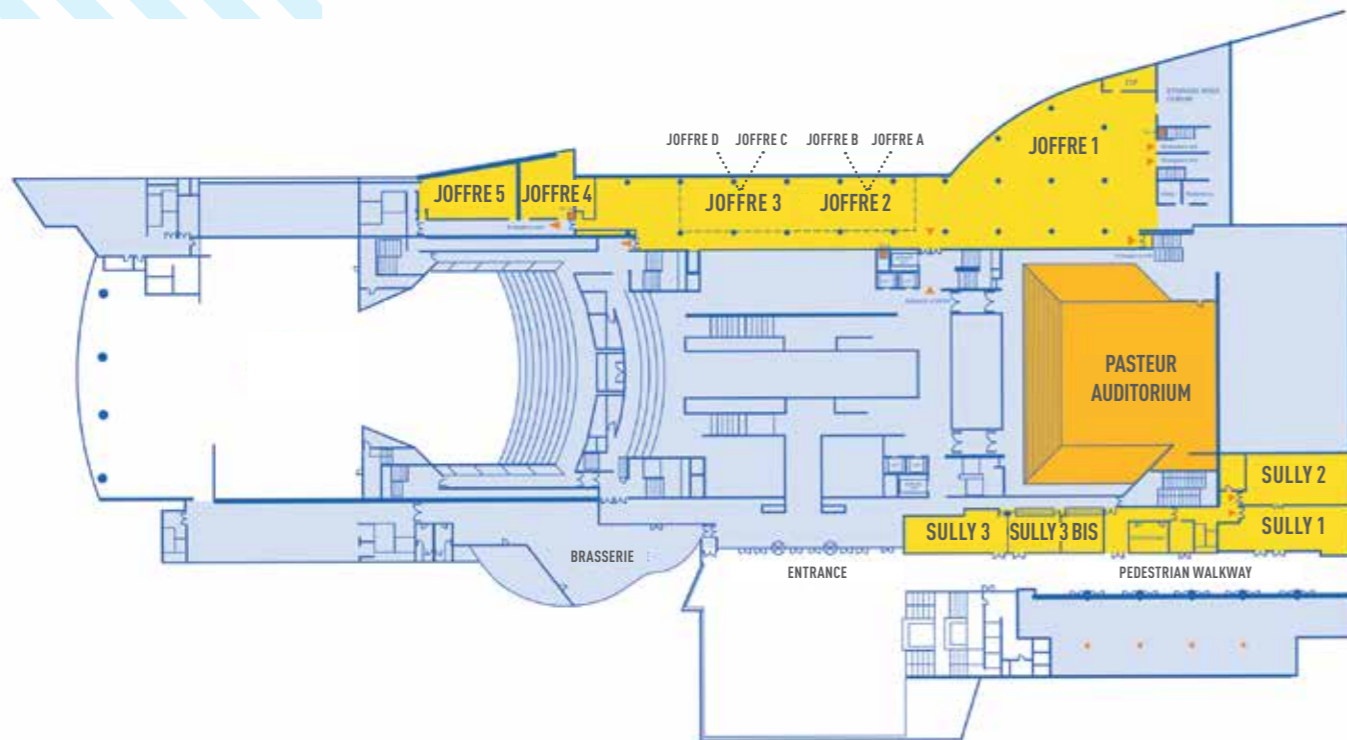
LEVEL 0



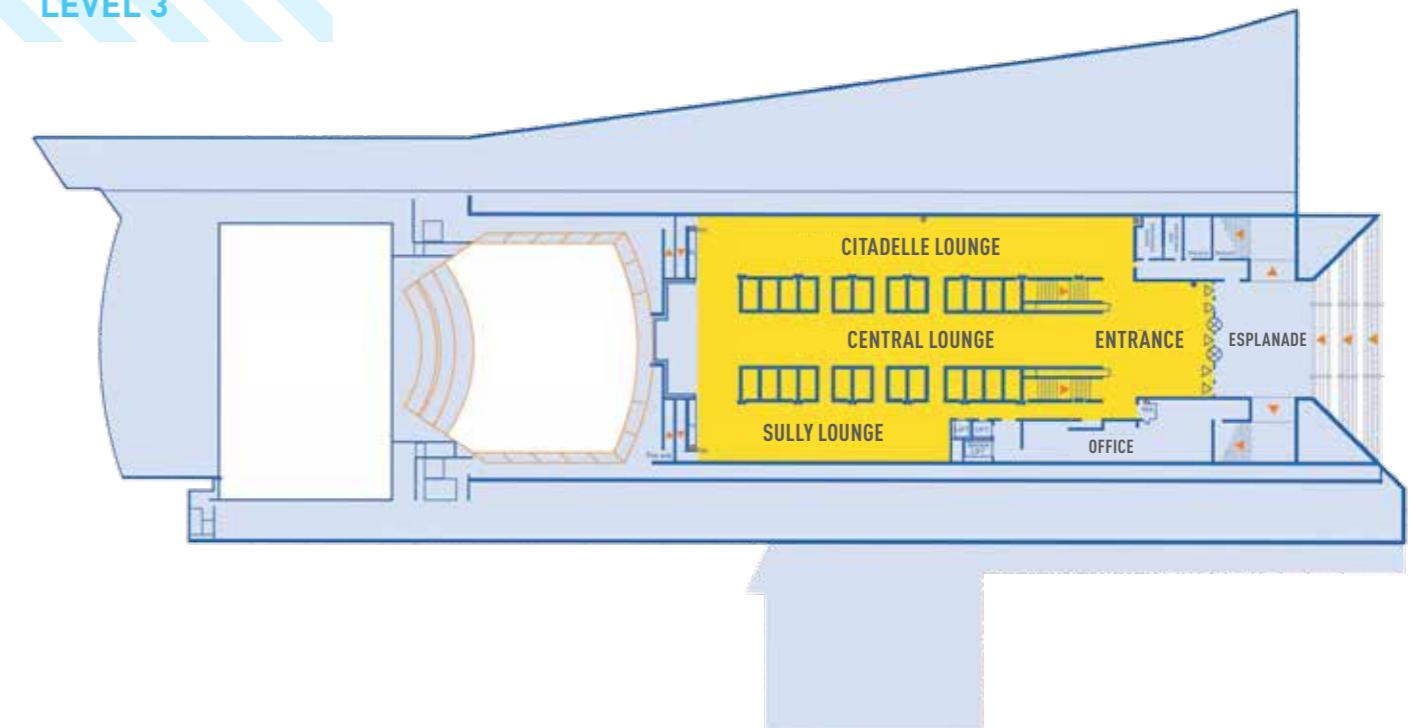
LEVEL 2



LEVEL 1



LEVEL 3



EXHIBITION

EXHIBITION

INTERNATIONAL COMMISSION ON IRRIGATION AND DRAINAGE (ICID)



ICID-CIID

Web site: www.icid.org

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The International Commission on Irrigation and Drainage (ICID), established in 1950 is the leading scientific, technical and not-for-profit Non-Governmental Organization (NGO). ICID, through its network of professionals spread across more than a hundred countries, has facilitated sharing of experiences and transfer of water management technology for over half-a-century. ICID supports capacity development, stimulates research and innovation and strives to promote policies and programs to enhance sustainable development of irrigated agriculture through a comprehensive water management framework.

Mission and Purpose: The mission of ICID is to stimulate and promote the development and application of the arts, sciences and techniques of engineering, agriculture, economics, ecological and social sciences in managing water and land resources for irrigation, drainage, flood management, for achieving sustainable agriculture water management.

ICID is dedicated to enhance the world wide supply of food and fibre for all people and believes that food security at various levels: global, national, local and household, and provision of assured livelihood starts with stable agriculture production. ICID encourages public private partnership in development and management of water resources.

BRL GROUP



BRL Groupe

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The BRL Group - A designer-builder and operator of large irrigation schemes in France and abroad

In France, BRL is a concession mandated Regional Development Company. As such, our experience is similar to a PPP agreement. In Languedoc-Roussillon, BRL designed and still manages (until 2051) all the infrastructure in a large-scale raw water system belonging to the Regional Council. The water system is composed of 105 km of canals, 4 dams and reservoirs, 80 pumping stations, 6 water treatment plants and almost 5 000 km of buried pressure pipes. By 2020, the Aqua Domitia pipeline project, engineered and run by BRL, again with full asset management and operation responsibility, will be extending the system to 150 km, compensating for the effects of climate change and responding to changing local demands. So far, it is the largest project of its kind in France.

In the last 60 years, BRL has equipped more than 120 000 ha for irrigation. Thanks to the Regional Water System, the BRL Group supplies more than half the irrigated area in the region and is providing for the irrigation of another 4000 ha, mainly thanks to Aqua Domitia.

In Morocco, BRL is a shareholder in AMENSOUSS, the concession grantee in charge of the construction, operation and maintenance (for 30 years) of the El Guerdane citrus farming scheme (10 000 ha). In Ethiopia, BRL is in charge of developing Megech and Ribb irrigation schemes (18 000 ha) in the frame of a management contract covering irrigation scheme design, construction supervision and scheme operation and maintenance for 6 years.

CACG (COMPAGNIE D'AMÉNAGEMENT DES COTEAUX DE GASCOGNE)



CACG
Valorisons votre territoire

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For more than 50 years, the CACG has worked daily to effectively implement development projects. Its ambition is to develop regions while respecting the environment, sharing resources and enhancing local economies.

Drawing on its know-how, the CACG adjudicates the sharing of water resources between agricultural and industrial users and environmental needs.

The CACG has built its regional development approach around the issue of water resources and proposes innovative solutions involving better management of resources, finding non-traditional water resources, optimizing irrigation and studying new management scenarios.

Beyond technological innovations (remote management systems, remote monitoring systems, data sharing via Internet, development of decision-support software, etc.), we are developing a social and economic policy for management of water resources which has a positive influence on both economy and environment.

THE SOCIETE DU CANAL DE PROVENCE (SCP)



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In its capacity as Regional Development Company, the Société du Canal de Provence contributes to hydraulic development in the Provence region. It also fulfils a public service mission through sustainable water management, both quantitative and qualitative, and through the supply of water to farmers, towns and villages, industries and private individuals living in rural areas within the reach of its concession.

As well as working closely with farmers in Provence, SCP offers its expertise to public and private customers both in France and in other countries:

- feasibility study, design and implementation of hydraulic development projects,
- management of and technical support for the operation and maintenance of hydraulics infrastructures,
- support for decision-makers (irrigation policies, development strategies, water management),

- support for Water Users Associations (WUA) : training and skills transfer, irrigation techniques, design, supply and implementation of equipment at the plot level.

IRSTEA



Web site: www.irstea.fr

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Irstea, the National Research Institute of Science and Technology for Environment and Agriculture, is a Public Scientific and Technical Research Establishment (EPST) coming within the purview of the Ministries of Research and Agriculture. Its multidisciplinary, action-oriented approach to research and expertise in support of public policy involves strong partnerships with French and European universities and research organisations, economic entities and public authorities. The Institute is a founding member of AllEnvi, the National Alliance for Environmental Research, and the European PEER (Partnership for European Environmental Research) network. Irstea has been endorsed by the Carnot Institute since 2006.

AGRALIS



Web site: www.aqualis-technology.com

www.agralis.fr

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Agralis works with professionals involved in water management, irrigation and fertigation, weather monitoring, climate change, agronomy, and soil conservation.

Whether you are a researcher, farmer, manager of green spaces, or environmental engineer, Agralis aims to satisfy you by implementing technical solutions adapted to your business.

Agralis is the exclusive distributor of Sentek capacitance probes for Francophone countries. These probes measure soil moisture, temperature and salinity through the entire soil profile with sensors placed every 10cm. Innovative installation methods result in minimal disturbance of the measurement site.

Sentek Capacitance probes are flexible and adaptable to multiple dataloggers (available protocols include SDI-12, Modbus over RS232 / RS485, ...).

Sentek also produces dataloggers, including the All-in-One - the first telemetry system without a solar panel in the Sentek range: Quick and easy to install.

Always innovating, our experts have developed a new concept for the automation of irrigation from measurements in situ: Aqualis.

Aqualis connects to soil, weather or environmental sensors, and allows remote control of your irrigation and fertilization in response to local conditions. The controller connects M2M over free band radio, GPRS or Ethernet. Thus, water is supplied according to plant consumption

and their requirements, and can be automated directly from our web interface www.aqualis.fr

Agralis works with you throughout project implementation and ongoing measurement campaigns, by providing users with training, installation, irrigation consultation, and maintenance.

DECAGON DEVICES EUROPE



Web site: www.decagon.com

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Decagon Devices specializes in the design and manufacture of in situ soil moisture sensors and loggers. The sensors are buried at different locations and depths in the soil profile in order to monitor changes in soil moisture, enabling to make better decisions on irrigation practices. We also manufacture environmental monitoring sensors that can be used to measure the microclimate in a field or orchard, in order to calculate the localized evapotranspiration for that area.

DEMAND SIDE INSTRUMENTS



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Demand Side Instruments (Demand Side) is a start-up technology company created in 2013 in Caen, France.

At Demand Side, we envision that Internet of Things technology is the technological driver for smart decision to preserve natural resources, deploy societal progress and serve sustainable agriculture.

Demand Side designs modular, easy to program, open source, end-to-end and cost optimized machine-to-machine (M2M) system solutions. Our pioneering solutions based on the re-use of the wireless broadcast technology and networks enable to benefit from a robust, reliable and long range connectivity at a minimum cost.

The company currently addresses three market sectors with solutions offering significant long range and low cost operational advantages:

1. Smart agriculture (smart irrigation and water flow management, wise and rational farming)
2. Smart City (smart lighting, smart parking, smart road and street traffic, air pollution)
3. Smart Energy Transition (distribution network balance management, demand side management, renewable energy management).

EXHIBITION

GACHES CHIMIE SPECIALITES



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GACHES CHIMIE offers chemicals and related services in several fields, and more particularly for water treatment: drinking water, process water, irrigation and swimming pools. The company has developed GARDOFiltre, a filter media produced with granular recycled glass from waste glass collection. It is used in substitution of sand in all sand filters whose applications range from swimming pool water treatment, process or drinking water production to wastewater tertiary treatment and irrigation.

NAANDANJAIN IRRIGATION



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With over 70 years of experience, NaanDanJain designs high quality, tailor-made irrigation solutions that deliver increased productivity per unit of resources. Our expertise drives higher crop yields, minimizes risks, and saves precious non-renewable resources.

NaanDanJain Irrigation Ltd. is the leading global provider of customized irrigation solutions. The company offers the widest range of cost-effective and customized technologies across more than 100 countries worldwide.

With nine subsidiaries, five international manufacturing plants, and a multinational network of sales representatives, the company has a strong presence on all continents. Implemented by highly trained professionals, NaanDanJain irrigation technologies comply with stringent ISO 900: 2008 quality and engineering standards.

The company's solutions are based on extensive know-how accumulated by a world-renowned team of agricultural experts, design engineers and technicians. The result is a cost-effective product portfolio, tailored to meet the challenging requirements of farmers worldwide.

NETAFIM



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Netafim is the global leader in drip and micro-irrigation solutions for sustainable productivity. With 28 subsidiaries, 16 manufacturing plants and over 4,000 employees worldwide, Netafim delivers innovative solutions in over 110 countries across the globe. Founded in 1965, Netafim pioneered the drip irrigation revolution, creating a paradigm shift toward low-flow agricultural irrigation. Today, Netafim offers a wide range of state-of-the-art irrigation and complementary solutions for agriculture, landscaping and mining. From drippers and dripperlines, through sprinklers and micro-emitters, to crop management technology (CMT) and greenhouse systems, Netafim's market-leading products and services enable cost-effective irrigation for optimal and sustainable results.

OYAS ENVIRONNEMENT



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Oyas® - Autonomous and environmentally friendly irrigation system Oyas®, the best for your plants watering ! Oyas are buried micro-porous ceramics.

Filled with water, they slowly diffuse needed moisture to plants. This constant watering and without excess avoids stressing the plants. It keeps substrate soft and wet and promotes the development of fauna and microflora.

It also prevents the growth of weeds because the top layer of the ground is not irrigated.

The main assets of Oyas® Exceptional water savings (50-70%)

Water supply 3 times less common (water tank)

Simple and fast filling

Natural, decorative, for inside and outside

A company environmentally oriented and ethical

We do not sell clay pots, we try to change the world

- Allowing each to reduce its water consumption by reducing watering his plants. Water is a precious resource that becomes scarce.
- By promoting local and artisanal economy. We have chosen to produce in France, in the potters' village of Saint-Jean-de-Fos.

S, M, L or XL, natural or enamelled, a complete range for all plants

Oyas® - Pots that water for you.

FRENCH WATER CLUSTER PÔLE EAU



Web site: www.pole-eau.com
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« The synergy of water industry strengths and skills for innovation »

French Government and regional authorities have funded the international French water cluster. Pôle EAU associates research institutions, educational organizations and companies from South of France (regions Languedoc-Roussillon, Midi-Pyrénées and Provence-Alpes-Côte d'Azur) to create value through innovative projects in the water sector. The aim of the World Competitiveness Cluster in Water is to develop and export technology as well as French know-how worldwide, and to deploy an ambitious strategy of global influence and reinforce international networks.

SDEC FRANCE



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SDEC-France, company specialized since 20 years in the measurement instrumentation for agriculture and environment, offers you a wide range of tools for your measurement and monitoring needs, both in research and agriculture.

Thanks to the involvement and expertise of its 40 employees, SDEC France is a privileged partner for customers of public or professionals organizations, research institutes, universities, consulting firms and farmers.

Our range of sampling / measuring instruments and Decision Making Tools: WEATHER

- Agromet weather stations (irrigation management, disease, ET,...)

- Compact and autonomous dataloggers

- Portable Instruments

GROUND

- Soil moisture sensors - TDR and capacitive

- Tensiometer and soil water samplers

- Compaction meters soil

- Soil pH and EC-meters

- Augers and samplers (manual and motorized)

PLANT

- Growth monitoring instruments (light radiation, nutrients, chlorophyll)

- IPM and disease modeling tools

WATER

- Level and quality loggers for groundwater and surface water

- Associated telemetry systems

- Groundwater sampling equipment

- Softwares for hydrogeology

SWELIA



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Solutions for a quality and optimized use of Water in Agriculture an Agro-Industries

With more than 110 member companies, Swelia is the premier expert network operating in the full water cycle; Swelia member companies area of competences encompass the identification, catchment, treatment, distribution, irrigation, analyses and control, water monitoring, and the reuse of all types of water.

The aim of SWELIA is the economic development of its member companies (mostly Small and Very Small companies) through the development of collective and integrated solutions.

Solutions related to agricultural water uses and issues are developed by more than 30 SWELIA Member Companies engaged in the development of integrated solutions for agricultural water, irrigation, aquaculture, agro-industries and water reuse and recycling, in France and abroad.

SWELIA is active member of ADEPTA, Mediterranean Water Institute, French Water Partnership, and founding member of France Water Team, Pôle EAU, PEXE and MEDEF International.

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