Conférence Parmenides IX – GID-CIHEAM – Bari – octobre 2021
Gestion durable des bassins versants méditerranéens face aux impacts des changements sociétaux et climatiques

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Session 1 Report Template

Session Title: FOOD SECURITY

19/10/2021, 14.00-18.30

- Moderator Name: Mr. Roberto Bassi
- Rapporteur Name: Mr. Chariton Kalaitzidis

Round Table 1
TITLE: Demand management (productivity, efficiency of water use, aridoculture, etc.)

Speakers and Panelists

Keynote Speaker: Mr. Guillaume BENOIT, Académie d'agriculture (France)
"La Mediterranee, la terre, l'éau, …"

Panelists of the round table:

Name	Organization	Title of the presentation
Eran FRIEDLER	TECHNION (Israel)	(Israeli experience of CC and urban growth)
Abdelouahid FOUIAL (Nicola LAMADDALENA)	CIHEAM Bari	Water efficiency / productivity and water saving
Celine HUGODOT	ASA	Action plan of the association Syndicate de Proprietairs du Canal de Gignac

Main findings, ideas/innovations:

1. The North and South differ significantly in terms of poverty and available facilities.
2. The South suffers more from water scarcity than the North.
3. Climate change amplifies water shortage issues.
4. Agriculture is one of the main water user.
5. We need to improve water use efficiency and water production at farm/basin level.
6. Food production does not meet demand, leading to imports and lack of food security.
7. In many cases (also in the South) there is big difference in terms of economic activity and sustainable practices between coastal and inland areas.
8. Water scarcity has a greater impact on population with higher proverty.
9. Israel has been relying on reusable and desalinized irrigation water since the 70s-80s.
10. Desalinisation is a potential solution but it has a high energy cost (and air pollution).

Conclusions and recommendations:

1. Need for policy, infrastructure reform and capacity building of all involved stakeholders.
2. The farmers need to be made aware of the necessity of efficient water usage, possibly along with the introduction of quotas.
3. Need alternative water sources. Desalinisation is a solution but has a high energy cost and indirect air pollution impacts.
4. Improvements are needed across the overall water use: From reservoirs to distribution/conveyance channels, to usage at farm level.

Round Table 2

TITLE: Development of supply (recharge of aquifers, reservoirs, inter basin transfers, desalination, wastewater recycling)

Speakers and Panelists

Panelists of the round table:

Name	Organization	Title of the presentation

	Zakaria EL YACOUBI	Chief of Hydro Agricultural Resources Division, Ministry of Agriculture (Morocco)	Case study of the Souss Massa river basin in Morocco
	Francesca PORTINCASA	Acquedotto Pugliese (AQP, Italy)	Water resources issues in southern Italy
	Denis LACROIX	Head of Monitoring and Foresight, IFREMER (France)	Agro-pastoral systems and soil erosion: a case of submersible land
	Andre BERNARD	President Chamber of Agriculture PACA Region (France)	

Main findings, ideas/innovations:

1. Underground water is being unsustainably overexploited in many South Mediterranean areas (e.g. Morocco).
2. Freshwater conveyed through dams is an unreliable and inconsistent supply.
3. There is a risk of sea water intruding in the aquifer.
4. Uncertainty reduces investments and hence, employment.
5. Climate change causes more scarce but extreme precipitation phenomena, leading to flood risk.
6. Drip irrigation in order to increase water efficiency.
7. Sea level rise is a real threat to coastal areas.

Conclusions and recommendations:

1. The private sector could intervene with investments and help with capacity building, but the legislative/policy environment should be fertile.
2. Water management should be connected with decision support systems.

3. Alternative sources of water are necessary (reused water for irrigation, desalinized water).
4. Desalination may be expensive, but sometimes it is the easier and more dependable solution.
5. Adopt water treatment methods to make reused water suitable for the industry, not just agriculture.

Round table 3

TITLE: Agroecological transitions (agroforestry, organic agriculture...)

Speakers and Panelists

Panelists of the round table:

Name	**Organization**	**Title of the presentation**
Bernard HUBERT	Académie d'Agriculture and INRAE (France)	Agroecological transition, principles rather than a model
Jean-Claude QUILLET	AGRIDURA (France)	The ecological transition of agriculture in the Mediterranean
Zineb BENRAHMOUN-IDRISSI	Les jardins de Zineb (Morocco)	Agroecological transition. The permaculture process. An experience in Morocco

Main findings, ideas/innovations:

1. Tillage promotes soil erosion and loss of microbial activity.
2. Agroforestry employs forest species to reduce soil erosion in sloped areas and allow the cultivation of agricultural crops.
3. Water, crops, forest, soil, human, are the main components of the agro-ecosystem.
4. Cover cropping reduces erosion and preserved soil microorganisms.
5. Agro-forestry areas are suitable for agro-tourism and environmental education.

Conclusions and recommendations:

1. No-tillage should be integral in a sustainable agriculture practice.

2. We need to adapt our skills and knowledge and embrace agroecological practices.

Round table 4

TITLE: Agropastoral systems and soil erosion

Speakers and Panelists

Panelists of the round table:

Name	Organization	Title of the presentation
Antonio LOPEZ-FRANCO	CIHEAM Zaragoza	Institutional partnerships on agropastoralism.
Abdellah LAOUINA	Mohammed V University of Rabat (Morocco)	The cases of mountains and foothills
Jamila TARHOUNI	Director of the water and environment science and technology laboratory, INAT (Tunisia)	Agropastoral system and soils relation in semi-arid condition: from local to large scale effects

Main findings, ideas/innovations:

1. Agropastoral systems provide many benefits in terms of biodiversity, conservation of water and soil, production diversity, carbon-fixing in the soil.
2. Ecological diversification leads to increased resilience.
3. It is necessary to build capacities in the Mediterranean and provide practical knowledge to the farmers.
4. Population growth leads to the cultivation of sloped land as well as forest/shrublands, which are prone to soil erosion.
5. Marginalised mountainous areas must be protected, in order to keep supplying downstream watersheds with water.
6. Mountainous ecosystems vary between Mediterranean countries.
7. Agro-silvo-pastoral systems have been abandoned but are very beneficial from an environmental point of view.
8. Increased population in the South also increases demand for food and water.

Conclusions and recommendations:

1. Agro-silvo-pastoral systems that are not as profitable, need to be supported by policies and subsidies.
2. More effort needs to be placed in capacity building for the adoption of agro-silvo-pastoral systems.
3. Employment of existing networks is crucial to increase outreach to farmers and stakeholders, in particular to young people.
4. The ecosystem service of water supply provided by the mountainous parts of the watersheds must be supported and protected.
5. Soil erosion produces sediments that end up in dams, reducing their capacity.