Co-operative Research on Environmental Problems in Europe (CREPE)
FP7 Science in Society Programme
Call SiS-2007-1.2.1.2: Co-operative research
Grant agreement no. 217647

Work Package 3: "Water scarcity and its virtual export from Spain to the UK"
Deliverable D3.1: Workshop report, 20 November 2009

Water scarcity in Almeria: Multi-stakeholder Deliberation Sessions 1st & 8th October 2009

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Introduction

As part of the Cooperative Research on Environmental Problems in Europe (CREPE) project, the Food Ethics Council facilitated a two day stakeholder deliberation workshop in Almeria on the 1st and 8th of October to discuss issues of water scarcity.

Aims

1. Stakeholder deliberation: to meet, share and understand the aims, concerns and interests of all stakeholders involved in water management related to the Primaflor-Marks and Spencer (M&S) supply chain.

2. Reflect on the virtual water flows from Almería to the UK

3. Explore the complexities of water management in Almería avoiding myths and simplifications.

4. Deliberate on the different responsibilities and power relationships in the Primaflor-M&S supply chain with regards to water management.

5. Explore the possibility of further stakeholder meetings for decision-making

Since the CREPE partner meeting in Brussels in March 2009, we made a conscious choice to move away from a sector-wide approach to a workshop discussing issues in water management to a specific supply-chain between Spanish grower Primaflor and UK retailer M&S. The reasons were: (i) to incentivize attendance- as discussions are specifically relevant to their activities and we could use the "pull" of the supermarket being there, (ii) to expect a bigger impact, as discussions would be less abstract and more specific to the problems of the region where Primaflor produces; and (iii) to come up with specific recommendations for specific actors involved in the workshop. The use of a specific value chain also gives us a great opportunity to influence change in a particular supermarket (M&S) and engage in dissemination of the collaborative research through their networks. For example, we have discussed the project with a great number of M&S suppliers in the UK and in Spain and we are currently engaging with other organizations such as WWF and Flaming to come up with certain lessons learnt that will give future M&S policy.

Preparation process

What we did:

A. Desk review:

   a. Supply chain water governance schemes

   b. Impacts of water scarcity

   c. Pros and cons of water labelling

   d. Policy documents on water management in Spain

   e. Literature on water management initiatives in Spain

   f. Review of EU water policy

B. Analysis of virtual water flows from Almería and Andalucía to the UK

   a. Virtual water flows for relevant crops from Almeria to the UK

   b. Conceptual paper on virtual water and water footprint methodologies (ongoing)

   c. Contextualisation of virtual water flows-economical, social, geography, environment (ongoing)

C. Scoping study:

   a. Identification of supply chain stakeholders

   b. Initial identification of stakeholders in water management in the Primaflor-M&S supply chain: policy makers

   c. Identification of key informants: trade unions, water providers, academics

   d. Two rounds of interviews inquiring about challenges in water management in Almeria and the relevance of supply chain governance (particularly with regards to the coordination by supermarkets). Interviews also included discussion on the water footprint concept and its relevance to water management and responsibilities.

The two rounds of interviews with stakeholders were crucial to ensure understanding of the key driving forces of water scarcity in the region (understand what are the power relationships that have 'blocked' the debate). They were also fundamental to ensuring stakeholders understood the collaborative research they were engaging in, to ensure relevance and usefulness for their own work and to increase likelihood of attendance to workshops.

The design of the structure of the workshop was very much related to the aims of the collaborative research, and to achieve them the workshop aimed to cover:

- The mapping of water flows – real and virtual – 'from water source to fork'
- Stakeholder mapping (including competing water users)
- Types of power and responsibilities, degrees of power and power relationships in the supply chain and in water management
- Water scarcity mitigation strategies and key challenges
- Avenues for collaboration
- Recommendations
- Evaluation and study possibility of further deliberations

Our preparatory work suggest that the workshops should:

- Be an iterative process – the research outputs are discussed between workshops and they shape the nature of the subsequent discussions.

- Bring in the consumption side of water scarcity – the discussion now is enriched with the presence of the distributors and supermarkets, who acknowledge their responsibility as buyers of 'virtual water', embedded in their products.

- Include competing water users and competing producers. For our specific workshop, the competing non-agriculture water users declined to participate (it is a challenge to find incentives for this group). Competing producers did find the workshop relevant and participated actively in the scoping study (represented particulary by COAG). Competing producers were also represented by AREDA –confederation of water irrigators which represents the interests of irrigated farmers.

- Include representatives from environmental NGOs.

- Reflect on power and power relationships.

Participants

As mentioned above, we made a conscious decision to make the workshop a stakeholder meeting. The scoping study included key informants who were not directly related to the Primaflor-M&S supply chain – including academics, researchers, other water providers, etc. However, we reduced the meeting to those actors that were directly involved in the 'water supply chain' and in the water management of that chain. This ensured actors felt more at ease and less threatened, the discussions remained as practical as possible, and that actors had incentives to attend (the presence of M&S was a major attractive force).

The most challenging part is to manage to have non-agricultural water users that compete in the use of the same resources. We did not manage to get ASEMPAL, the private sector association to join our workshop. The challenge is to find proper incentives for them to attend- perhaps making sure the relevant policy-makers that decide on allocations to industry and tourism vs. agriculture are present in the workshop. In the case of Almeria, as was discussed in the stakeholder mapping exercise, industrial and tourism water use has legally absolute priority (as is the case, understandably, of drinking water) over agriculture in water use. We were more successful in including competing agricultural water users, represented by COAG –a farmers union – in the scoping study (who apologized for not being able to attend) and AREDA in the workshop.

The workshop was facilitated by Santiago Ripoll, with the assistance of Cristina Madrid, who gave a presentation on virtual water flows (see Annex II for the agenda). Attendees included: supermarkets, producers, distributors, policy makers, water providers, exporters associations, and federation of irrigated farmers (see Annex III). Those who participated solely in the scoping study:

Organisation	**Type of organisation**	**Name**
Fundación Nueva Cultura del Agua	Civil society	Abel La Calle Marcos
Marks and Spencer	Supermarket	Lauren Orme
Primaflor	Producer	Pedro Briones
Comunidad de Regantes SolPoniente	Water provider	Gabriel Giménez Crespo
COAG Almería	Farmers Union	Andrés Góngora Belmonte
Agencia Andaluza del Agua	Public administration	Consuelo Giansante

Ecologistas en Acción	Environmental NGO	Antonio Amarillo
WWF-ADENA	Environmental NGO	Felipe Fuenteslaz
FERAGUA Federación de Regantes de Andalucía	Confederation of irrigated agriculture producers	Pedro Parias

Workshop process including results

The workshop was designed jointly by Jez Fredenburgh and Santiago Ripoll. For this purpose, Jez carried out a literature review on workshop exercises and techniques that explored and exposed power relations. Mostly drawing from literature on participation and on natural resource management, Jez prepared a 'Power toolkit', that gathered those workshop activities that could be most useful to unlock debates through the inclusion of power in the equation. Building on this work and, adapting it to the specificities of the WP3 project: this is the end design of the workshop.

In this type of deliberation process, the participants have different backgrounds, interests and world-views. This requires a design to manage conflict – though not avoid it, because dealing with the conflict is the reason for the deliberation. Activities are set up to develop the discussion as much as possible, while avoiding polarisation, which can impede deliberation. In order to discuss difficult issues, the workshop (i) included exercises that develop empathy and listen to all points of view, and (ii) framed problems in such a way that stakeholders don't feel threatened by the discussion. In the event, this design allowed stakeholders to discuss topics that raised radically different opinions and to explore possible areas for collaboration. As an important means to avoid polarisation, we briefed stakeholders in advance about the workshop objectives, other participants and thus the kind of discussion that would arise in the event.

Session 1- Thursday 1st of October 2009

Two spaces, a) one table in U shape for the introduction and presentation in the first half hour, and b) an open space around a poster to map out water flows, stakeholders and power relations.

A. Introductions

Agreement on objectives: To begin with, we showed the stakeholders a slide with the objectives of the workshop (those indicated in the aims section), and these objectives were discussed and agreed upon.

Introductions: As a fundamental part of stakeholder deliberation processes is for everyone to feel at ease and to empathize with each other, most of the exercises in the first workshop attempted to build personal relationships between the stakeholders –particularly those who would be most antagonistic such as environmentalists and water providers-. Most of the first session involved direct personal interactions, through group exercises, without the tables being a 'barrier' between stakeholders.

For the introductions the "wheel of introductions" was used: participants stand in two lines facing each other, each 'pair' introduce themselves and say to each other what they are expecting out of the workshop. After a few seconds, the

facilitator shouts “change!” and people shift one position to the left, facing the next participant and then again they introduce themselves. The chain will go round until all stakeholders have met each other.

B. Virtual water flows from Almería to the United Kingdom and relevance for responsibilities in supply

Cristina Madrid, researcher at the Universidad Autonoma de Barcelona, is the person assigned by the Fundacion Nueva Cultura del Agua to carry out the analysis of the virtual water flows for WP3. She gave a short presentation that aimed to cover the following (see slides in Annex I)

- Introduce the concepts of virtual water and water footprint
- Flows of virtual water from Almeria to the United Kingdom
- Comparison water flows and rainfall
- Usefulness of these concepts and implications for the attribution of responsibilities

An interesting outcome of the ensuing discussion was the realisation of how new the concepts of water footprint (WF) and virtual water (VW) are for the stakeholders. Almost none of them had heard of the concepts and all that was explained in this section was new to them. This fits with another aim of this project, which is to bring awareness of WF and VW to upstream stakeholders, as perhaps concerns raised by supermarkets will have a knock-down effect on producers, so it is interesting for them and their water providers to be aware of these new supply chain led concerns on water scarcity.

C. Identification of water sources and flows in the Primaflor—Marks and Spencer supply chain.

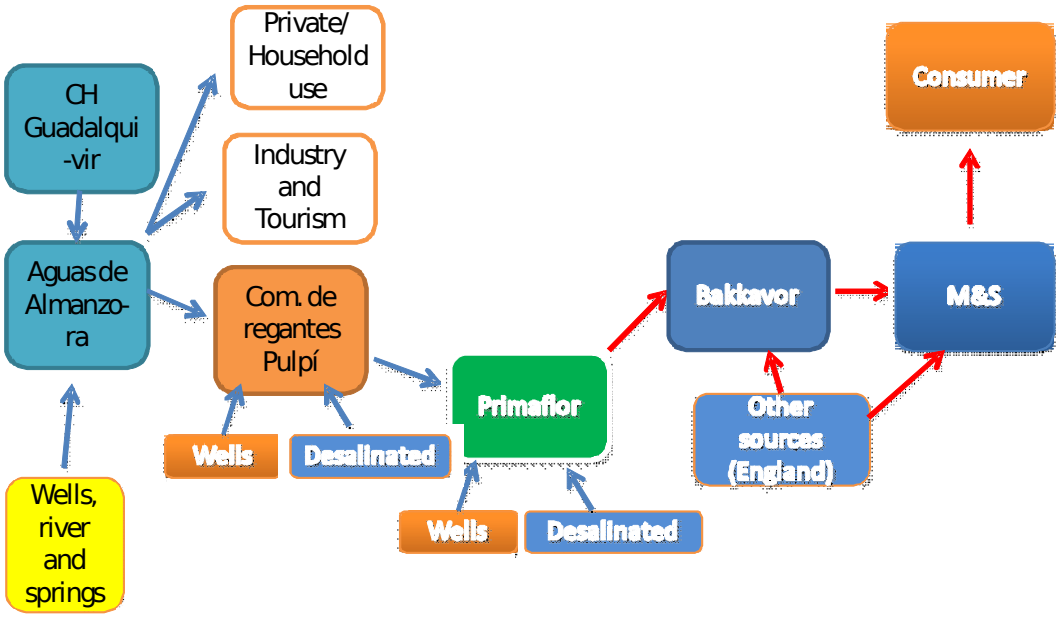
Energizer: Depending on the ‘energy’ of the group, this is a good time to include an energizer exercise. We didn’t include it, as the group was feeling rather dynamic and our agenda was rather tight. In retrospective, if we had had more time, we would have included it anyway[1].

Before starting the water flow mapping exercise, we reminded the stakeholders that the aim of the exercises is not to reach an agreement/solution, or to reach a consensus on wrong and right. The objective is for the discussion to include all different opinions, so all ways of looking at water management are on the table.

The exercise: standing/sitting around a big poster 2.5x 1 m. Using felt-tip pens and coloured cards, participants have to trace water in its ‘real’ form and its ‘virtual’ form “from the water source to fork”. We did it specifically for the Primaflor-M&S supply chain. The water flows will be indicated with arrows. On the arrows, we would include the percentage of water sourced from other actors or

[1] For excellent insights on facilitation of participatory workshops and for examples of energizers, please check Chambers, Robert 2002. Participatory workshops. A Sourcebook of 21 Sets of Ideas and Activities. London: Earthscan.

water sources by each user (e.g. Primaflor sources from own wells but also from the water provider) per each actor of the chain.



In our supply chain, Primaflor obtained 90% of water out of Pulpi and 10% from other sources. Comunidad de Regantes obtained 60% from the water transfer Aguas de Almanzora and 40% of other water sources. Aguas de Almanzora gets 97% from the Guadalquivir river and 3%from other sources.

D. **Stakeholder analysis in the supply chain and those involved in water management, including areas of influence**

The exercise: Building on the same poster, participants used coloured cards again to add the relevant stakeholders in water management for the supply chain. Stakeholders must also include competing water users. In the relevant cases, the area of influence and instruments of influence can be pointed out. For example a key instrument is the Water Framework Directive of the EU.

Results: the types of stakeholders that came up in the exercise were:

- *Water policy makers*: Andalusian Water Agency that drafts water laws adapting guidelines from EU water directive. These laws go through a consultative process that stakeholders find somewhat inclusive and representative. Municipalities have responsibility in dealing with waste water
- *Competing water users*: we already included urban use, industry and tourism. We must include other producers as well. Also, representatives of irrigated farming interests: Federations of irrigated farmers, association of export farmers.
- *Other suppliers* for the distributor.

- *Alternative water sources and derivate stakeholders*: desalination plants, energy companies for the plants.
- Environmental NGOs, Academia and Public opinion
- Generic "stakeholders"/drivers: Market, climate and environment

E. Identification and assessment of power: types of power and power relationship between stakeholders

The exercise: again, building on the same poster, we would aim to explore what types of power exist, the degree of power of each stakeholder and to analyse the power relationships between different stakeholders. This analysis of power is done in relation to water management and in the context of a supply chain.

We ask through this activity for participants to reflect on stakeholders' capacity to influence or generate change in others, to be able to shape their own destiny or to mobilise with others to promote policy changes. To create a constructive environment, we focus mainly on the positive connotations of power.

If people inquire, we explore the concept of power and what it entails (from Veneklasen and Miller 2002[2]):

- Power *over*: capacity to influence others and shape their actions
- Power *to*: meaning agency, effective choice, the capability to decide on actions and do them.
- Power *with:* the power to mobilise with others to achieve change
- Power *within*: meaning personal self-confidence, the power of own knowledge and expertise and the development of own capabilities.

Types of power

[2] VeneKlasen, Lisa and Miller, Valerie (2002) *A New Weave of Power, People and Politics: The Action Guide for Advocacy and Citizen Participation*, Oklahoma City: World Neighbors

Within this discussion we ask participants to see what types of power –as capacity to influence and create change in water management- each stakeholder has. Available to participants, there are stickers with different types of power: commercial/economic, political, social mobilisation, knowledge/technical expertise and a blank one for participants to include others they feel are necessary. First, participants are asked to put power stickers on their own stakeholder card (one can put more than one, if the stakeholder holds more than one type of power). Then the rest of stakeholders are assessed.

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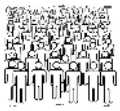
<tr>
<td>   
   </td>
<td>Types of power
1. Commercial/economic (Power over)
2. Political (Power over)
3. Social Mobilisation (Power with)
4. Knowledge/technical expertise (similar to power to and power within)
5. Blank- for alternatives</td>
</tr>
</table>

The results were:

1. Commercial/Economic: particularly pressures down the supply chain- power to reward “good practice” in supply chains. Also great commercial interests due to big stakes in certain solutions (e.g. power companies)

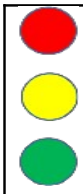
2. Political: EU, Ministry of Agriculture, Andalusian Water Agency: water policy and implementation, spatial planning, agricultural policy, trade policy.

3. Social Mobilisation: Particularly strong capacity to mobilise public opinion and farmers in demonstrations: Federations of irrigated agriculture producers and water providers. In a much smaller scale, also environmental NGOs and Universities have some capacity to mobilise public opinion.

4. Knowledge/Technical expertise: All participants involved granted themselves and other stakeholders that type of power. This is another aim of this exercise, the realisation that there is power in all stakeholders, and that they have something to contribute towards improved water management.

Degrees of power

The exercise: The participants are divided in groups (in this case two) and they are asked to rank the power of each stakeholder with regards to water management (capacity to influence but also capacity to change one owns behaviour in water). To do this, they use a traffic light system. Red= High power; Amber= intermediate power; and Green= Low power. For this purpose, red, amber and green stickers are provided.

	High power Intermediate power Low power

Results:

3 types of powerful actors were identified:

- The most powerful actors are policy-makers who define and implement water laws and regulation. There is a great tendency for all actors to trust in and even outsource responsibility to public authorities; it all boils down to “the administration should…” Great power is seen in the consultative procedures of water policy-making.
- Supermarkets are identified as powerful, as they can reward changes in production along the supply chain.
- Producers themselves and water providers have the power to improve their efficiency

Other actors recognise they have less power in this context – Environmental NGOs, University, Association of Exporters- but that through their work they can influence public opinion and policy-makers.

Power relations

The exercise: similarly to the exercise above, people are divided in groups, and each group has to draw arrows to determine the most important directions of power relations between stakeholders. An arrow between two stakeholders will determine the direction of influence (A can shape B behaviour) and, the thicker the arrow, the greater the capacity of influence.

In our exercise, we didn’t divide into groups, but each stakeholder took a felt tip pen and drew the arrows they felt were most important.

The results:

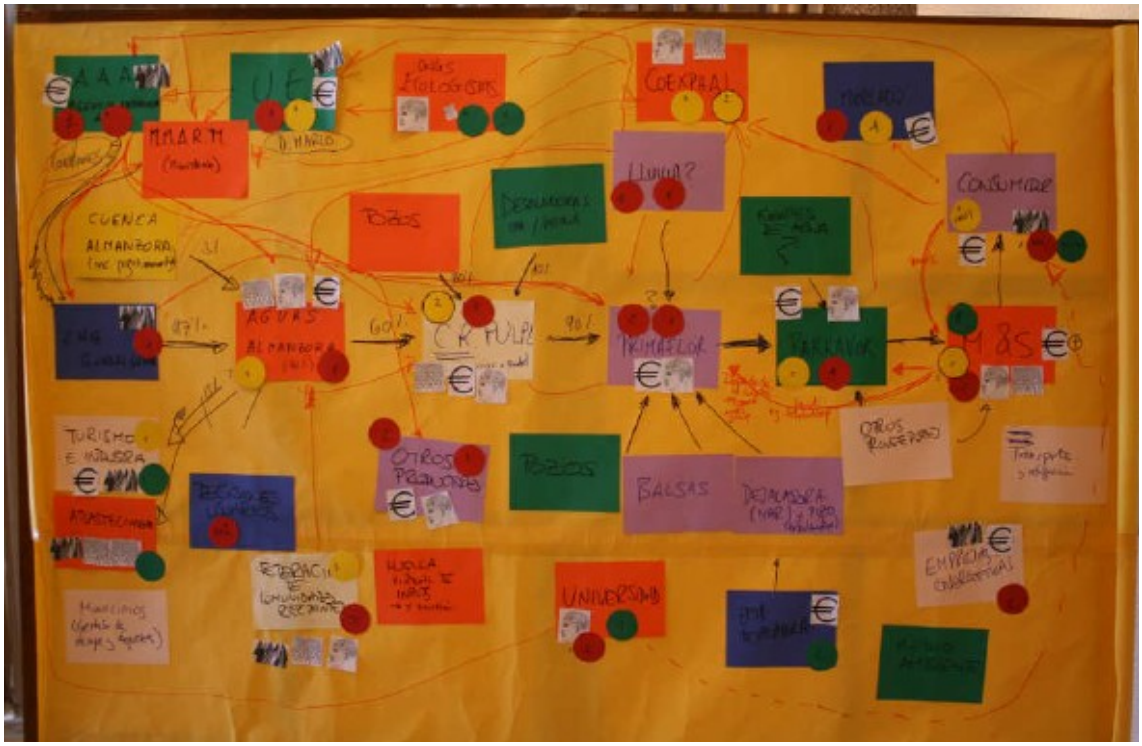
Power *over* relationships:

- EU- Water legislation (AAA/Ministry) and consultation—influences water providers and producers
- Pressures down the supply chain: great importance of standards and code of practice. The depth of these pressures will depend on the degree of consensus of those standards (if it’s for all suppliers like GlobalGAP or a standard for one supermarket) and the degree of dependence of suppliers and distributors on one particular supermarket.

Power *to* relationships

- Change irrigation systems- in production unit and sector wide
- Social mobilisation: particularly federations of irrigation farmers and water providers: can mobilise both producers and public opinion (in a much smaller degree NGOs and University can also do this, but very limited impact).

By the **end of this session**, we have, in the same poster, included water flows from source to fork, stakeholder mapping and power mapping. This was the result:



Session 2- Thursday 8th October 2009
Venue: ideally, a table in U and, on top of that, spaces and flipcharts to break out into groups.

A. Introductions, catch up and discussion of initial results.

In this section, the newcomers in the deliberation workshop introduce themselves, and the facilitator shows the preliminary results that were 'extracted' from the first session. These results are discussed, and the concerns raised should shape the nature of the Inquiry in the second session and the subsequent analysis.

In Annex I you will find the slides showing the results of the 1st workshop (in this report included in the section above and in the Outcomes section.

B. Identification of mitigation strategies and the challenges they involve

The exercise: The participants break into 3 groups of 5-6 people, and each group will discuss one of these types of mitigation strategies.

- Strategies that increase the supply of water (including issues such as desalination, transfers, etc.)
- Strategies that increase the efficiency in the use of water (e.g. drip irrigation)
- Strategies that attempt to adjust demand and supply of water (pricing, cost recovery, water allocations/concessions).

Each group will take a flipchart, and fill two columns, the first one with the mitigation strategies and the second one that includes the challenges/problems of each strategy.

Water scarcity mitigation strategy **1 or 2 challenges/problems**

The important point in this exercise is not to decide which mitigation strategy is better, but to have all possible measures on the table and understand the potential challenges to each one. It can be something as crazy as bringing water from the moon; the important thing is that it finds its space in the deliberation process. This exercise tries to tackle issues somewhat obliquely, so the discussion doesn't get too heated in the very beginning. Given that we are talking about blocked debates, the main objective is to keep conversations going.

Each group will have a secretary (who will write on the flipchart) and a speaker. Each group will have 20 minutes to write down their strategies and challenges, and will choose the 3 most important pairs of strategies-challenges to present to the whole group. If possible, these will be ranked from 1 to 3 depending on the relevance to their particular supply chain and the ones that seem most effective. Facilitators must ensure groups are heterogeneous, if necessary people can be shuffled around to ensure each group has representatives from different views on water management.

Each break out group presents the results to the whole group, and then all of them are discussed.

As our stakeholder group was not too large, we discussed the mitigation strategies as 1 group.

The results were as follows:

I. Increased supply of water

Mitigation strategy	**Challenges/problems**
Water concession trade banks	They wouldn't be a problem as they are concessions already calculated at origin, but: Maintaining ecological flow at origin (and in many cases it is not measured) Requirements of infrastructure to transport it Could be long distances Dependence on the water at origin
Desalination plant	High energy use—fossil fuels—contribution to climate change Residues- Salmuera High cost of water
Water transfers	High cost of water

(imp. To distinguish energy efficient transfers and non-energy efficient transfers)	Maintaining ecological flow at origin (and if its measured or not) Damage to the environment
Rain water catchment- from greenhouses, reservoirs..	No objections except perhaps the limited impact- as rainfall is very scarce in Almeria

II. Increased efficiency in the use of water

Mitigation strategy	**Challenges/problems**
Adapting production (crops and tonnage)	Vagaries in climate –difficult to predict output Vagaries in market demand (and the market rules)
Increased efficiency in irrigation: - Use of pipes - Preventing losses - Covering water reservoirs to avoid evaporation - Maintenance- risk assessment plans	Environmental damage Importance of vegetation growing beside rivers and open water canals- disease control? Who carries the cost of that investment in water efficiency?
Methods to ensure water is used rationally: Use of water meters Stop the use of other water collection points to ensure count is correct Drip irrigation techniques Use of humidity sensor in the ground to regulate volume of irrigation	
Training and awareness raising	Who gives the training in efficient water use?

III. Adjusting demand and supply of water

Mitigation strategy	**Challenges/problems**
Concessions (water allocations)	For historical reasons, sometimes allocations per hectare are excessive, as also happens in other parts of Andalusia Other times, there is under-allocation Discrepancies between what is on paper and the reality, e.g. having allocated water from a well that is dried up. There is a progressive trend towards payment per cubic metre rather than per hectare. Need to ensure that everyone has meters (which are common in Almeria) Too much bureaucracy, leading to extra-legal extraction of water (some farmers demanded a permit years ago but never got an answer) Illegal extractions in over-used aquifers Lack of control on the ground of actual water extraction
Pricing/ Cost recovery	Can be too high for farmers to be able to pay the costs High social pressure against increased prices- particularly in the areas where it is low (not in intensive farming in Almeria)

	The new law is trying to unify costs Importance of spatial planning by public policy

C. Identification of collaboration between actors of the supply chain to solve or start addressing these challenges.

The exercise: the same groups that were formed in the previous exercise will continue in this one; however the flip charts with the types of mitigation strategies and challenges/problems will be swapped so they don't repeat.

Each group will reflect on what collaborations are necessary *to address the challenge/problem.* This is a way of reflecting on issues obliquely. The strategy itself is not questioned, but its challenges are seen as something that can be addressed. This shows more accurately than a direct discussion what debates are blocked (and why) and what avenues exist for change.

Choosing the collaborations should be done taking into account the stakeholder map and the power relations explored on session 1.

There are two alternatives to visualise the collaborations for each challenge-mitigation strategy. One option is to print out three A3 versions of the poster from the first session and give a colour felt-tip pen to draw circles around the actors that should collaborate to address challenges. The other is to create a 3rd column in the flip chart, and include there the stakeholders that need to collaborate.

After 20 minutes of group discussion, the results are presented to the plenary and discussed.

In our workshop, this exercise was conducted for the whole group, and spaces for collaboration were only identified for the mitigation strategies on efficiency. As will be shown in the analysis, this shows two important forces that make responsibility shift from the concrete/local to the abstract/policy maker and similarly from tangible impacts (the infrastructure of a water transfer) to intangible ones (carbon emissions and climate change when desalination plants are used). It also shows how techno-fixes tend to be perceived as the 'less problematic' solutions.

Results:

The only space for collaboration was addressing the challenges of the efficiency seeking mitigation strategies: direct promotion of improved irrigation technology by the public administration, self awareness by producers of improving efficiency of water use and the reward by supply chains (by supermarkets like M&S). Also the importance of consumer awareness was pointed out.

Here Primaflor mentioned that all producers should be required to take those steps in efficiency: today they make investments in quality production for "demanding" supermarkets, but the low cost supermarkets that only negotiate in price free ride these quality improvements. He also mentioned the importance of an effective coordination between the department of sales and the sustainability department, as often the price pressures contradict the demands for

sustainability. These processes that link standards to market access are of crucial importance and will be discussed in the analysis section.

D. The Devil´s advocate game: Proving sustainable water sourcing: opportunities and challenges for producers

The exercise: the idea behind it is discuss what kinds of evidence a producer would have to produce to prove that he/she is using and sourcing water sustainably. And this type of exercise tries to 'problematise' the pieces of evidence that are normally used (in this case concession titles, efficiency and alternative uses of water), so as to see what are the real constraints to water management.

For this exercise, we ask the audience to keep quiet through the whole short presentation, presenting the problems that have been raised by 'different stakeholders' in the scoping study (not the facilitator, which would give space for very polemical statements), especially regarding evidence that is normally provided as proof of 'sustainable water sourcing'. At the end of the presentation (Annex I), the main points are summarized in a slide and then the discussion is opened, if possible, point by point. This exercise is very useful for the *initial* discussion of possible standards or requirements that can be implemented through the supply chain or as conditionality for subsidies. Afterwards a full participatory process could deliberate specific standards for a supply chain. As this exercise also shows, producers depend on other actors for effective evidence to prove sustainable water sourcing.

Our 'challenges' of the evidence were the following:

a. Efficient use of water
    a. Total use of water and total area irrigated.
    b. Shared use of aquifers
b. Concessions
    a. Bureaucracy speed in permits and paperwork.
    b. Legality/illegality
    c. Mismatch between real availability and allocation/concessions
c. Use of alternative sources of water
    a. Desalinated water $\rightarrow$ high energy use $\rightarrow$ carbon emissions $\rightarrow$ CC
    b. Water transfers $\rightarrow$ high infrastructure + risk to ecological flows

Results: Of these, the following were discussed and the solutions offered:

- Legality
    - Producers and systems must ensure legality of water uses and extractions
    - Field inspections must be carried out, by public administration and standard audits.
    - Address the problem of different comunidades de regantes (water providers) having different water arrangements- private, concession, etc.
    - Demand titles of ownership of wells when purchasing
    - Solve the situation of alegal wells (old wells that have been used for decades but do not have the adequate permits)
- Efficiency and total use
    - Spatial planning: area allocated to irrigated farming
    - People have tended to work faster than public legislation in water use

    - Shared Resources: Role of the market in displacing those who use their resources inefficiently, also economic penalisation by water providers for using too much water per hectare- there is a maximum water use per hectare per type of crop and if surpassed, they are penalised.
    - Illegal wells difficult to control—a good methodology of knowing overconsumption, through electricity use.
- High energy use by desalination plants
    - Use of sustainable forms of energy: wind, solar
    - Carbon capture (?)
    - Desalination only as a temporary form of water provision

E. Recommendations

The exercise: depending on the number of people, these can be done in a plenary (with the facilitator jotting down the recommendations in flip charts (as we ended up doing), or people can be asked to put down two recommendations each in the flipcharts.

We divided the recommendations into:

- Recommendations for the private sector (in broad sense, including producers, water providers, supermarkets, etc.)

- Public Administration (Andalusian Water Agency, National and provincial policy makers, etc.)

- European Union (we aimed to emphasize this as the project is EU funded and it was interesting to see the role of the EU in water management)

The results were:

For the private sector

- Introduce rules/norms/standards for the appropriate use of water—for all producers (like Globalgap). Currently the questions asked about water are more to do with the quality of water for food safety purposes.
- M&S to include water indicators in their assessment of suppliers- including a module in the questionnaires on water. Buyers must ensure producers meet the requirements of water laws.
- Buyers to reward producers who do not overuse the aquifer and that if they are using an overexploited one, they prove they are contributing to its recuperation.
- Producers: to implement irrigation plans and introduce humidity sensors
- Producers: use of rainwater improve efficiency, must ensure have all legal documents and that they address water losses. Producers must present a chart of their production sites and carry out external audits/maintenance of their irrigation systems.
- Reward efficiency and reducing water losses, but also reward the social and economic values of food production.
- Introduce environmental standards in the assessment of suppliers.

For the public sector

- Introduction of water meters.
- Carry out awareness and training programmes on efficient water use and environmental issues related to water.
- Make bureaucracy more ‘fluid’, i.e. faster, simpler and more responsive.
- Recycle urban water

- (said by producers) “the state must guarantee the supply of sufficient, affordable and good quality water” (Comunidad de Regantes, Almanzora and Producers, who have more of a supply side focus to water)
- Combat illegal water extractions
- Ensure the monitoring of the state of aquifers and adjust allocation to availability of water
- Support to crops and types of production that consume less water (Ecologistas)
- (University) for government and AAA to make databases of water use public)

For the European Union

- Should ensure the requirements – on quality, on employment conditions, on environmental impact - apply to all, including 3rd countries. In this sense, ensure that quotas from third countries are fair, i.e. to avoid unfair competition with them.
- To include ecological standards
- For the water framework directive (WFD) to include the restoration of aquifers
- WFD should include water quantity as well as quality, i.e. the problem that scarcity reduces quality (not simply vice versa, as in the current WFD).

F. Evaluation and next steps in the working group

In this section we reviewed the objectives discussed at the beginning of session 1, discussing whether or not they had been achieved.

Then the discussion that followed was regarding the usefulness of this stakeholder meeting on water. The idea is to see if this has been useful to participants and if they would be interested in getting together more regularly to discuss issues of water. In case it was found useful and there was a desire to repeat, the discussion would lead into ‘who would take the lead in organising the meetings’, ‘who would follow up on the processes’ etc. It was also implied that this type of stakeholder meeting could serve other purposes other than water, for example issues around agro-chemical use, or nature of contracts, labour, etc.

Although participants found the meetings interesting and were happy to have shared their views with the different stakeholders, they felt that these were only ‘informative’ meetings and that decisions were made elsewhere. This is, of course, true. However, WWF saw this type of meeting as a useful forum to lobby supermarkets to include elements of water governance in their standards and requirements in their supply chains.

As developed in the analysis section, these stakeholder meetings will be most useful if they go beyond sharing to having the power to make decisions over certain issues over water. Given that there are already consultative processes on water laws (and that we should promote accountability and participation in them), these fora –if this is the decision made by supermarkets- could be used to discuss/debate and decide on new supply standards on water management and their indicators/thresholds.

Outcomes

Key findings workshop:

A. The climate-resource paradox

A key element of discussion was the paradox of the horticultural industry in the coastal areas of the Mediterranean, where the days of sunlight make the ideal weather for fruit and vegetable production, but where rainfall and water is scarce. In the case of Almeria, integration and its competitiveness in world markets have given the area the market space and the climate, but water has been the limiting factor. Strategies have been taken to solve this: increases in efficiency –Almeria's agriculture is the most efficient water user in Spain- and increases in supply –through small-scale water transfers, water reuse and recently, desalination. Almeria has followed thus the typical path: first the market and then we'll see where we get the resources from? M&S advocates a different route: what are our resources, what can we produce? In this hypothetical case, the market will be the limiting factor and thus could be problematic to implement.

B. Virtual water and water footprint: starting from scratch (almost)

Stakeholders participating in the workshops did not know about the concepts of water footprint or virtual water, or the implications it might have in the responsibilities of distributors, supermarkets and consumers. The only exception was WWF- Spain. Stakeholders were unaware of the growth of supply chain based water management schemes (Waterwise, stewardship initiative and others), and the increased concerns by retailers about water management. This concern might have consequences for producers in the medium term (for example, by the inclusion of water standards in their supplier selection process), so it is fundamental for producers to be aware and for them to engage with retailers in these concerns and discussion. This lack of awareness was corroborated by FECs participation in the M&S suppliers meeting in Murcia in September.

We believe this type of workshop is a good way of introducing these concepts and a good place to discuss the potential implications thinking about 'embedded' water in the products might have in supply chain governance and in water management. It would be interesting to maintain this learning process on issues like water footprint and implications for producers and water providers to ensure there are no unintended consequences due to actions following on concerns raised by supermarkets (and less so consumers) on water use. Decisions on these actions should be taken with the inclusion of all stakeholders in the deliberation process.

C. Water standards: the way forward?

The role of supply chain incentives for water management was discussed. Due to significant power relations in the food chain, certain behaviours can be rewarded down the supply chain, from supermarkets, to distributors to suppliers. One way to use this is to include in the quality standard schemes indicators on water (e.g. irrigation technology, irrigation system audits, legality of water sources, sustainability of alternative water sources, status of aquifers and contribution to their restoration, etc.). Today, standards on water included in supplier questionnaires tend to be focused on water and food safety more than issues around water scarcity.

WWF has put forward specific recommendations for water management indicators to be included in supermarket standards and also in broader standards such as GlobalGAP.

The major challenge is to avoid unintended consequences in the implementation of changes in standards – to avoid flight of investment, loss of market access, increase in carbon emission due to desalination, etc.- Further, it is important to view water use in a broad perspective, recognising the socio-economic development that has occurred round the horticulture development in Almeria and the industry's compliance with environmental and labour standards, when comparing with other "competing" regions.

In order to avoid the above unintended consequences, it is necessary to engage with suppliers and other stakeholders (like the ones that we invited to our workshops) to jointly decide water standards, indicators and thresholds.

D. The challenge of introducing the consumption side

This problem follows on the point made on concepts such as VW and WF. Water is viewed by most stakeholders as a problem of supply, or, at most, as efficiency. With the exception of the Ecologistas en Accion, an environmental NGO who pointed out the problem of lifestyles and consumption patterns, most stakeholders take the consumption levels as a given, and producers just follow the market pull and produce accordingly. Issues of waste, potential overconsumption, seasonality are not considered and thus ever-demanding consumption is redefined as "the market" against which producers are but powerless and must accede to remain producing in the current rhythm and intensity. In this framework, and in order for the economic prosperity to remain, the solution proposed is increasing the availability of water.
Similarly, these deliberative processes –and using instruments such as footprints- must develop awareness on impacts of consumption and the new allocation of responsibilities as a consequence.

E. Responsibility shifts: from the tangible to the intangible

The Ministry and the Andalusian Water Agency have taken a supply approach to problems of water scarcity, particularly counting on desalination plants. Political reasons push government to look into supply, and party politics made water transfers something "the others did" (the Ebro transfer was seen as a Popular Party bet and was resisted by social movements and the Socialist Party), so they are not a solution.
Environmental impact changes in nature: from tangible effects –building infrastructure on site, reducing river flows, redirecting water flows, etc. – to environmental impacts with desalination plants that are less tangible: carbon emissions—climate change. It is easy to attribute responsibility of environmental damage with local 'solutions' such as water transfers, but much less so with the impacts of desalination (climate change and salt residues), thus the government/public administration is not held accountable.
In a similar fashion, it is interesting how stakeholders have a tendency to look at local-specific actions, such as illegality of water wells, overuse of water resources, aquifer degradation and swiftly outsource responsibility to an 'abstract' administration that needs to "do something": to promote, to allocate, to police. This way localised behaviours and responsibilities are handed over the public authorities.

F. Efficiency vs. Total use and availability: clarifying the difference

Among powerful stakeholders (the state and large scale businesses), the efficiency argument is the most used and consensual mitigation strategy against water scarcity. It seems the only unblocked argument in water management. This is also a main argument for evidence of sustainable water sourcing: water users end discussions by saying "Ah! But we are the most efficient". In the collaboration exercise, it was the only avenue in which stakeholders felt at ease. This is beneficial in some sense – there is some progress and some steps forward (see results)-, but highly limited in others. As Ecologistas en Accion and WWF pointed out in the workshop, one can be highly efficient and still be overusing the aquifers. There has to be a realisation that efficiency is only a solution to water scarcity if total use and total availability is also taken into account. This realisation has important ramifications in policy-making that often are overseen: (i) the need to integrate calculations of availability (levels of aquifers, alternative sources of water) into water allocations/concessions; and (ii) spatial planning-control over the irrigated land use.

G. Does water policy have teeth? The importance of public responsiveness and policing

One thing that came out of the workshop is the importance of implementation: the existence of a restrictive law is no guarantee of protection against water scarcity. Questions were raised whether the public administration provided the necessary means to monitor water extractions and detect and close illegal wells. WWF has carried out a lot of work on illegal water extractions and has pushed for surveillance and audits, both by the public administration, but also by commercial buyers (whose audits should check legality of permits and survey the area).
Similarly, producers and water providers criticised the lack of 'fluidity' of the permit and concession bureaucracy, the process being so complicate and time-consuming that has forced farmers to be in an a-legal status, having applied but never got an answer.

H. Unlocking political incentives

Politicians are caught between a rock and a hard place. The water framework directive (WFD) demands progress towards cost recovery, but in many cases this would mean a drastic increase in water prices. For example, subsidised desalination plant water costs 40 cents per cubic metre today (and still this is too often perceived as too expensive), and, under cost recovery (not including environmental costs), it would go over 80 cents. Water users such as the confederations of irrigated farmers and farmers themselves hold great power in blocking price initiatives, as they have great capacity to mobilising themselves as farmers, but also mobilising the public opinion, that sees in agriculture the motor of the economy and do want to see it 'threatened'. Therefore the government has very little space for manoeuvre, and can only go down the desalination route, that has two political advantages: (i) it shows something is done- things are built, water will be more available and (ii) it postpones to a comfortable distant future the environmental impacts of the decision and the possibility that the water from the desalination plant, even if subsidised, might be more expensive than farmers are willing to pay. For drivers in water extraction by producers see below.

I. Price and incentives for water sourcing

The following incentive is less the case in our case study as they secured most of their water from the water transfer Aguas de Almanzora from the Guadalquivir River and at a reasonable price (as this transfer generates some energy through turbines). But in the case of most of the producers in Almeria their choice is between underground water or desalinated water. Despite the fact that the government keeps investing in desalination plants, the already existing ones are running well below their capacity: farmers are not buying desalinated water. Desalinated water today, despite being subsidised, is significantly more expensive than underground water. Given that there are no other pressures to protect the aquifers, many farmers naturally make the choice of overusing the aquifers a little further, rather than pay a high price for water.

J. Building on existing institutions

This project aims to bring supermarkets to water management discussions, to rethink responsibilities by including a consumption-side perspective and to see if they could create incentives for better water use. However, what was made very clear by all stakeholders in the workshop and by interviewees in the scoping study, there are already mechanisms set up- consultative processes - for the discussion of legislation. These mechanisms may be criticised -because they are not inclusive enough, they are not participatory enough, etc. - but they are accepted as a fair means for stakeholders to interact with the State in water policy making. Our work must go towards promoting accountability, inclusiveness and participation in these fora. Parallel supply-chain deliberations such as the ones we held in Almeria, must be complementary (and not in competition) to these efforts.

K. The need to integrate the re-structuring of agri-food systems

Massive changes are occurring in the Almerian countryside due to the global restructuring of the food systems. The ways things are produced, transformed, distributed and consumed have changed radically, particularly due to the increased power of supermarkets. The scoping study showed increased price and standard pressure on small-scale producers, who, despite increasingly associating themselves in cooperatives, face great pressures to compete with industrial/large scale producers in a final market dominated by a few supermarket chains. The discussion of ethical or quality standards of any type must take these structural changes into account, as the unintended consequence of including a certain standard can represent a decrease in market access.

L. Meanings of water

Water is understood very differently by different stakeholders. This clash of worldviews is one of the key reasons why debates tend to be blocked.

- Water as a 'minable' resource. In these cases, water is considered like oil, a resource that has to be mined and used for economic activity. Under this framework, water is perceived to be best if piped (versus in a river bed for example). With regards to ecological flows –that water should remain naturally in the river beds – people would see this as "wasting water and dumping it in the sea". Efficient technology, water transfers and pervasive use of closed canalisation and pipes is typically advocated.

- Water as a pillar of ecosystems. According to this, water provides services not only in agriculture production but also in the maintenance of ecological systems. Under this framework, water in river beds and on occasions non-efficient ways of irrigation such as inundation can have a fundamental environmental value.

- Water as a social function. Almeria's prosperity can be attributed almost completely to horticulture production. And water has been a key factor in making this possible. Agriculture, in the public eye, remains untouchable; as so many families have benefited from it (Almeria's horticulture industry has been mainly small-scale farming). Under this framework, when talking about water, the economic and social benefits of its use must be integrated into the equation.

These worldviews need to be reconciled or at least brought further together, and the State must be able to achieve this through increased deliberation in its consultative processes on water policy.

Conclusion

The next steps in our research will aim to bring together the knowledge produced by the stakeholder deliberation in Almeria by FEC with the water footprint and contextualisation carried out by FNCA. When all this is consolidated, it would be interesting to send it out to stakeholders and key informants for feedback.

Further, as this is a EU project, it will be interesting to see what is the role of EU policy-makers in promoting good water management practices and how to create the 'right' incentives for beneficial changes.

This cooperative research has proven useful to understand why certain debates in water management are blocked and to identify certain avenues for progress, but also to realise how there are strong powerful drivers that sustain the processes that cause water scarcity. There is a need to understand that a system “works”, even if the great losers are smallholders and the environment, but that there are strong pressures to maintain it as it is. And the first step is to make these power differentials and drivers “visible” so as major players accept their responsibilities and are held accountable for their actions (or inactions).

Future potential research areas:

- How to making existing consultative processes on water policy more inclusive, participatory and accountable
- Good practice for supermarket-led multistakeholder consultations on water and other relevant issues
- Integrating complexity and non-linearity in supply chain water-stewardships schemes

Annexes

Annex I: Invitation letter to participants

Estimados miembros del grupo de decisión en escasez de agua,

Quedan cordialmente invitados a las dos sesiones que tendrán lugar en Almería para discutir la problemática del agua en las cadenas de suministro de productos hortícolas de Pulpi para Marks and Spencer. El debate tiene como objetivo apuntar hacia soluciones para un uso sostenible del agua en Almeria: desde soluciones prácticas a nivel de cadena de suministro, hasta la discusión de políticas públicas.

Las reuniones tendrán lugar los días **Jueves 1 de Octubre y Jueves 7 de Octubre de 10:00 a 14:00**, y estarán seguidas de un almuerzo.

- La primera sesión del Jueves 1 de Octubre tendrá lugar en el Salón Mirador en el Gran Hotel de Almeria.
- La segunda sesión del Jueves 8 de Octubre tendrá lugar en AC Hoteles, plaza Flores 5, Almeria.

Seguidamente esta semana les enviaré el orden del día de ambos talleres y un esbozo de las actividades y discusiones que los integrarán. Prometen ser dos mañanas muy interesantes.

A nivel práctico, por favor pónganse en contacto conmigo si necesitan un menú especial, por ejemplo una opción vegetariana o para celiacos.

Muchas gracias por adelantado, no duden en ponerse en contacto conmigo si necesitan más información,

Atentamente,

Santiago

Annex II: Agenda and Timetable

Orden del día provisional

Grupo de decisión sobre escasez de agua en Almeria

Jueves, 1 de Octubre: Primera Sesión: Flujos de agua en la cadena de suministro e identificación de actores y capacidad de influencia

Hora:	10.00 am – 2.00pm
Lugar:	Gran Hotel Almeria, Salón Mirador Avenida Reina Regente 8 04001 Almería, España.
10.00	Introducción y presentaciones
10.10	Flujos de agua virtual de Almeria al Reino Unido y relevancia para atribución de responsabilidades en las cadenas de suministro Cristina Madrid, Investigadora en Economía Ecológica, Univ. Pablo de Olavide.
10.30	Identificación de fuentes y flujos de agua en las cadenas de suministro Primaflor- Marks and Spencer.
11.15	Identificación de actores relevantes a la gestión del agua en la cadena de suministro y ámbitos de influencia
11.45	Pausa- café
12.00	Identificación de capacidades de influencia y motores de cambio: Tipos y análisis de capacidades de cada actor y relaciones de influencia entre actores.
14:00	Almuerzo

Jueves, 8 de Octubre: Segunda sesión: Estrategias de mitigación de la escasez de agua e identificación de posible cooperación

Hora: 10.00 am – 2.00pm

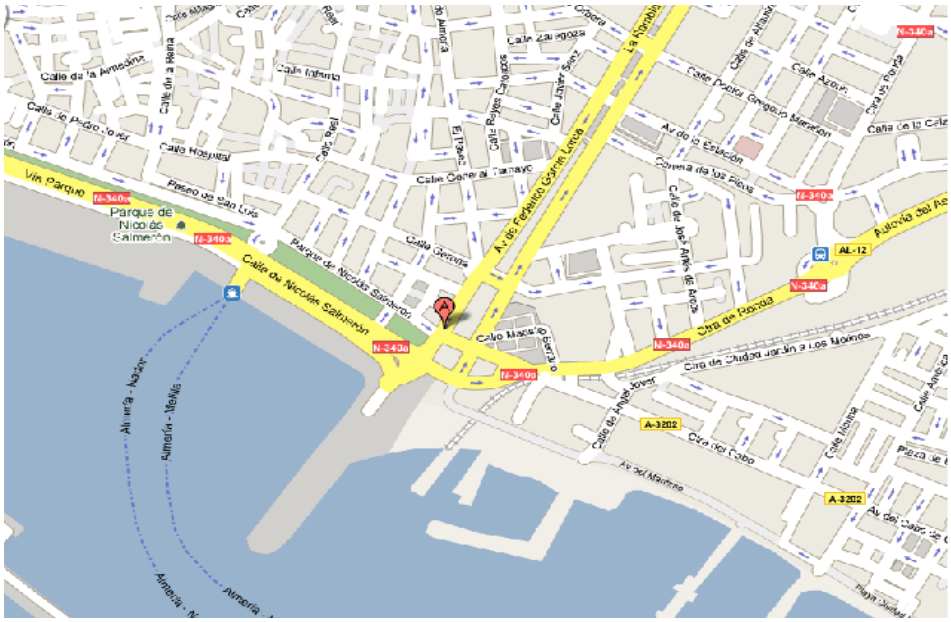
Lugar: AC Hoteles Almeria

Plaza Flores 5
04001 Almeria, España.

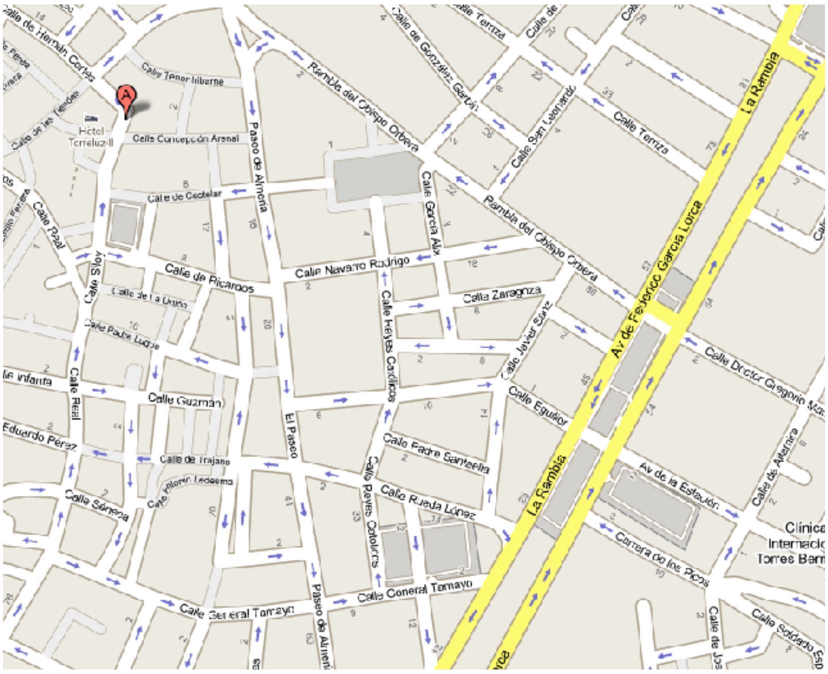
10.00	Introducción y recapitulación.
10.20	Identificación y evaluación de estrategias de mitigación de la escasez de agua, y los retos que éstas representan
11.30	Pausa-café
11:45	Identificación de colaboraciones entre actores de la cadena de suministro para resolver o progresar en esos retos
12.15	Demostrar un uso sostenible del agua: oportunidades y retos para productores
13:00	Recomendaciones
13:30	Evaluación y siguientes pasos en el grupo de trabajo
14:00	Almuerzo

Cómo llegar:

El Gran Hotel Almeria (jueves 1 de octubre) se encuentra frente al puerto en Avenida Reina Regente 8, en el centro de Almeria. Su numero es 950 238 011. Si necesitan más información contáctenme en Santiago@foodethicscouncil.org o, a partir del día 28 de Septiembre en el 617 789 556.



AC Hoteles Almeria (jueves 8 de octubre) está en la Plaza Flores número 5 en el centro de Almeria. Su número de contacto es 950 234 999.



Calle de Hernán Cortés
Calle Tenor Iribarne
Hotel Torreluz II
Calle Concepción Arenal
Calle de Castelar
Paseo de Almería
Rambla del Obispo Orbera
Calle de González Garbín
Calle Terriza
Calle San Leonardo
La Rambla
Av de Federico García Lorca
Calle García Alix
Calle Navarro Rodrigo
Calle de Ricardos
Calle Siloy
Calle Real
Calle Zaragoza
Calle Reyes Católicos
Calle Javier Sanz
Calle Guzmán
Calle Eguilior
Calle Padre Santaella
El Paseo
Calle de Trajano
Calle Séneca
Calle Rueda López
Calle General Tamayo
Calle Doctor Gregorio Marañón
Av de la Estación
Carrera de los Picos
Calle Soldado Español
Clínica
Eduardo Pérez

Annex III: Participants list

Organisation	Type of organisation	Name
ADENA WWF	Environmental NGO	Felipe Fuenteslaz
Agencia Andaluza del Agua Almeria	Public policy	Miguel Angel Gutierrez
Aguas del Almanzora S.A.	Water provider	Fernando Haro
AREDA	Federation of irrigation farmers	Fernando Marquez
Bakkavor	Distributor	Yolanda Serrano Córcoles
Coexphal	Exporters association	Jan Van der Blom
Comunidad de Regantes de Pulpi	Water provider	Javier Serrano
Ecologistas en Acción	Environmental NGO	Luis Martín
Ecologistas en Accion	Environmental NGO	Marcos Dieguez
Food Ethics Council	Charity/think-tank	Santiago Ripoll
Universidad Autonoma de Barcelona	Academic	Cristina Madrid
Marks and Spencer	Supermarket	Louise Nicholls
Marks and Spencer	Supermarket	Jemma Pyne
Open University	CREPE	Les Levidow
Primaflor	Producer	Antonio Marhuenda

Annex IV: Recommendations made by Ecologistas en Accion

Proposals by Ecologistas en Accion to improve water management in Agriculture in Almeria

⟶ To producers:

- Honesty and legality in the use of underground water: closure of illegal wells.
- Preferably to shift to organic (ecologic) and bio-dynamic agriculture.
- Recuperation of surface waters (water cisterns, reservoirs, infiltration in wells…)
- Recycling and reuse of residual waters
- Improvement of the irrigation systems
- Reduction to the minimum indispensable of chemical fertilisers, or better, to substitute them for natural fertilisers (compost, manure, guano…). This represents also a decrease in costs that can be invested in irrigation systems.
- Awareness and attitude change towards the concept of water as a common and scarce good. Even if you can pay for it, you don't have the right to squander it.
- Continue increasing Integrated Pest Management.

⟶ To distributors (Bakavör and Marks & Spencer)

- Reward with price those sustainable or ecological producers
- Promote the consumption of local produce
- Trace produce to its origin to understand the source of the water used.

⟶To public administration:

- Strict implementation of the Water Framework Directive.
- Cost recovery, scrapping water subsidies.
- Plan to recuperate all aquifers
- Long term plan to ensure the adaptation of water consumption to the possibilities of the territory.
- Assessment, surveillance and closure of all illegal wells
- Subsidisation of improvements in irrigation systems
- Subsidisation of ecological producers that optimize the use of water
- Water should be paid by volume and with adequate prices.
- Recovery, purification and reuse of all water. Eliminate sea spillage and substitute for recycling plants.
- Recovery of the cultural and historical heritage in water management (canals, cisterns, irrigation techniques such as "por careos") and implementation.

Annex V: Presentations by the organisers (see separate pdf)

Annex VI: Recommendations made by WWF-ADENA (see separate pdf)