Intro to WS 2 “Rural Environment, Climate, Water”

Helena Gomez-Macpherson

Day 1 State of play as regards issues and risks to be addressed in the context of climate, soil, water, biodiversity and natural heritage, with reference to the relevance for rural areas and agriculture.

Question A) How to valorise and reinforce the role of farmers and foresters as stewards of the countryside and providers of environmental public goods and services as well as their contribution to the sustainable management of natural resources and climate action?

Good afternoon to everybody. I’ll be very brief in my introduction as we have limited time. In these few minutes i will like to cover some topics that may inspire the work we have ahead in this session. To link to the question presented by Macieh I’ll go through the following major topics: what can the rural environment offer, mostly goods and services, the importance of being efficient using these goods and services, how CC complicates this efficient use, but how rural areas have opportunities to confront it.

What do rural environments offer to the society? Obviously many things, but simplifying and for focusing, we can talk of goods and of services. For **goods** I mean natural resources and ecosystems. For example, water, soil, air, biodiversity, wildlife, habitats for species, minerals, fossil fuels, etc. But also immaterial assets like traditional knowledge or more tangible representations of cultural heritage like those man-shaped rural landscapes, for example those stone walls we have seen in the video. We could say that nice landscapes and the attracted tourism are two **Cultural services** provided by the rural areas. Apart from (i) cultural services , other **services** benefiting the society are (ii) the **provision** of food, energy, clean water and air, raw material, etc., and (iii) more **regulation type services**, for example, soil formation and erosion control, flooding control, nutrient cycling, etc and of course climate change (CC) mitigation, that I’ll mention later.

We have gone through examples of what is offered. **Now I would like to point out that many of these goods and services may not be properly managed and that this leads to the degradation of the ecosystems.** For example, pollution or overexploitation, and I am sure many of you can think of many examples of rural zones suffering severe problems of water quality and scarcity, soil erosion and degradation, or biodiversity losses. Many may know also cases of landscape degradation due to touristic booming.

The **risk of mismanagement will increase with increasing pressure for natural resources and food. And will increase with CC.** Looking at the past, there are already CC effects described: increased temperatures and the related shifts in the timing of biological processes, or increases in the frequency and intensity of droughts. But the CC scenarios for the future show that it’ll get worse, particularly in the Mediterranean semi-arid regions where we will face the double burden of less and more erratic rainfall, and higher temperatures. By contrast, in northern Europe, increased water supply and reduced water demand are expected, although summer rainfall will decrease.

I would like also to make the point that CC is not only the result of industry! Rural areas also contribute to CC. For example, agriculture contributes significantly to the emission of GHGs to the atmosphere (10.3% of total EU-28% emissions in 2012), thus agriculture can have, therefore, an important role in **CC mitigation.** Certainly rural areas are expected to contribute to EU target of limiting global temperature increase to below 2 °C. Two days ago US and China also ratify Paris agreement of keeping below 2ºC. You may consider actions to reduce GHGs emissions, reduce reforestation, use energy more efficiently and use alternative renewable energy, etc. and maybe the first step will be a proper and efficient management of water, soil and inputs.

Now, how to do it? **Engaging rural actors in CC mitigation, or I should better say in maintaining the goods and services I've mentioned before, is not straight forward**. Ecosystems services not necessarily produce short run economic returns to make them attractive to many farmers. Also, some results may be only observed after long-term interventions or after adoption of complex or expensive technologies, or may be effective at one scale and not at other.

Clear understanding of processes, benefits and limitations are essential to convince farmers and other actors to give a step forward for maintaining sound ecosystems services. When results are not easily observed, transparent information is required for trusting the messages and the messengers, particularly if the advice and extension services are inadequate. The participation of rural actors developing this knowledge reinforces this transparency and the viability of proposed actions (e.g. multiactor approach H2020). Furthermore, this interaction may result in innovations that offer possibilities for rural business. The efforts are yet very limited with more clear success in the ICT, for example, online services to improve irrigation scheduling organized by water user associations.

Knowledge and understanding the importance of environmental benefits will not necessarily convince rural actors to take actions that will not report an immediate economic benefit. We need both public and private sector strategies for valorisation of these efforts to move forward. It could be easily then to have realistic incentives as current ones are few and inefficient.

Thank you for your attention