SHORT TERM SCIENTIFIC MISSION (STSM) – SCIENTIFIC REPORT

The STSM applicant submits this report for approval to the STSM coordinator

Action number: Action CA15206
STSM title: Utilities engagement on watershed investments and PES
STSM start and end date: 20/03/2018 to 20/04/2018
Grantee name: Giulia Amato

PURPOSE OF THE STSM

(max. 500 words)

The main aim of this STSM was to enlarge and organize the knowledge about the engagement of public and private utilities concerning payments for water services and investments in the watershed: most of the times these investments result in forestation actions, collocating them in the W-FOR-W PES schemes. The related topic is: *Exploring motivations and barriers of other potential PES participants (e.g. farmers, water utilities, landowners and the general public)*, where I focused on "water utilities" contribution, because of several motivations that show the potential of these stakeholders (payment infrastructure already existing, clear economic driver, awareness of the context…) and that have been analysed during the STSM. I expected to develop a comparative analysis about relevant case studies, focusing on the institutional and legislative settings, main incentives and obstacles, common procedures, actors' roles and motivations. Also, I wanted to explore the implementation status of the WFD for what concerns the Article 9 ("Member States should take account of the principle of full recovery of the costs of water services, including environmental and resource costs and in accordance in particular with the "polluter/user pays principle"), as it contains a major opportunity for the creation of a "systematic" PES for conservation interventions through water tariffs.

I also wanted to increase my knowledge about integrated ecosystem assessment and management by attending the University course "Integrated Ecosystem Assessment in Regional Management", also exploring the main institutional and financing instruments for achieving sustainable ecosystem management in a regional context. This relates to my research topic because virtuous water utilities could have an active role in regional planning when they'd choose to invest in watershed conservation actions.

The aim of this STSM was also the creation of expertise and connections with other researchers.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSM

(max. 500 words)

I attended 30 hours of lessons and tutorials. During this time, I was able to learn about several topics connected to the Integrated Assessment and that I studied in the past, but from a different point of view: ES

measurements, trade-offs analysis, financing mechanisms, ecc. Also, real-world case studies were presented, showing how to practically apply the lesson learned.

For the development of the research topic, I made a review in grey and scientific literature to understand the implementation status of the Environmental and Resource Cost recover. After that, I considered the work made by Leonardi (2015)[1] and re-organized the information collected by him identifying the most relevant cases and updating the related data. Moreover, this list has been enriched with the analysis of some other cases, among which the most representatives two has been analysed in depth. Then, I concentrated on the comparison between case studies and, finally, in organizing information in a database and in a draft article for a future publication.

Here I am presenting in detail the research activity.

1st phase: ERC implementation research

I firstly looked at institutional documents (from European Commission, European Environmental Agency and others) and starting from them I searched for related documents (for example from specific Member States) trying to identify a general tendency or relevant national cases. Also, a more generic research has been carried out, looking in grey and scientific literature with some key words: *Environmental and Resource Cost, Water Framework Directive, water price policy, full recovery cost, …*

2nd phase: Selection and update of already known case studies

As already mentioned, the main source for the already known case studies was the thesis made by Leonardi in 2015. I focused on the second part of the work, where an institutional analysis framework was given and applied to 4 case studies: among this, I chose the two most relevant ones, where water utilities had a primary role and the implementation stage was mature. These two schemes are: Upstream Thinking Program (UK) and Romagna Acque Spa Fund (IT).

For these two cases, information given by the thesis was analysed and then updated through web research and interviews to Project Managers.

3rd phase: Identification and analysis of two more case studies

Two more cases were identified through consulting the existing databases and other resources. The selection criteria were: *considered successful PES; long term scale, relative new within the scientific literature review.*

Through this research, I identified two cases: Lower Saxony Cooperation Model (D) and Dunea (NL). Especially for the second one, the direct contact with the involved company was necessary as no detailed information was available online. In this way I could apply the institutional framework developed by Leonardi to these cases.

4th phase: Analysis and organizing information

The last phase focused on comparison between case studies through the building of a database and a draft article. Common aspects and differences were identified, focusing mostly on motivations and barriers.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

(max. 500 words)

[1] Leonardi, A. **2015**. *Characterizing governance and benefits of payments for watershed services in Europe*. Università degli Studi di Padova. Padova. 196 pp.

Concerning the implementation status of the ERC at European level, results are not clear and would need further investigation: Europe has not provided clear guidelines for the application and we found much variability at EU level in pricing policies.

As a result, each State has given its own interpretation and strategy for the internalization of these costs, with uncertain effectiveness and results; also, it was difficult to find updated documents and applied cases both at national and European level. In conclusion, we can say that many States have in some way internalized the ERC, but the water tariff is not the main tool used for this purpose and there is no evidence of the effectiveness of this action on water quality status. The process is currently underway, and more information would be needed to achieve a complete idea of the situation.

The comparative analysis has raised some PES features and governance arrangements that can improve performances and outcome and increase the success of a scheme. Here are some of them:

- the scheme must consider all type of ecosystems involved and provide a differentiated portfolio of management practices.
- The first assessment of partners (buyers and suppliers) has to be based not only for their willingness to participate but also for their capacity (readiness) and scale. The inclusion of key actors such as intermediaries, and "support systems" like universities, farmers associations, NGOs, etc. is a prerequisite for the scheme success.
- Communicating the idea of the scheme in the right way and at the right actors is fundamental as first step. The second fundamental step is to identify and involve key experts from national/regional administrations at an early stage.
- The main important driver is for sure securing water quality and quantity, though hook this primary need to secondary services may be crucial for the success of the scheme.
- Performances and outcomes are dominated by uncertainty related to how management practices impact on hydrological services, as the relation is always site and context specific.
- In all four considered PWS, we found positive performances regarding cost benefit/saving of the scheme, compared with BAU scenario, taking into account co-benefits.

In conclusion, water utilities are well founded to be actors with high potential in PES schemes development for many reasons, and common lines have been highlighted that can help present and future mechanisms.

FUTURE COLLABORATIONS (if applicable)

(max. 500 words)

Many synergies were found between Etifor (home institution) and the Foundation for Sustainable Development (host institution).

In particular, Etifor will soon join the Ecosystem Services Partnership, led by FSD, and will participate in its future meetings.

Also, the two organizations agree to collaborate in future projects: in particular it would be interesting cooperate in the next call under the Erasmus+ Knowledge Alliance programme.