

Minutes

REXUS & LENSES PROJECT: Visit to SWRI facilities - Joint meeting of LENSES and REXUS projects, June 29, 2023

Participants:

REXUS & LENSES Project

1. Andreas Panagopoulos (SWRI)
2. Vassilis Pisinaras (SWRI)
3. Konstantinos Babakos (SWRI)
4. Dimitris Malamataris (SWRI)
5. Anna Chatzi (SWRI)
6. Alessandro Pagano (IRSA)
7. Ivan Portoghese (IRSA)
8. Virginia Rosa Coletta (IRSA)
9. Giorgia Bottaro (UNIPD)
10. Estrella Lopez (I-CATALIST)

REXUS Project

11. José González Piqueras (UCLM)

LENSES Project

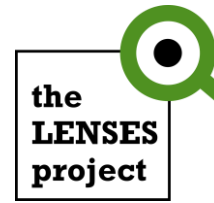
12. Stefano Fabiani (CREA) [pre-meeting on 28/6]
13. Cem Cetinkaya (EA-TEK)
14. Mert Gunacti (EA-TEK)
15. Filiz Barbaros (EA-TEK)
16. Ali Gul (EATEK)
17. Gulay Onusluel Gul (EA-TEK)

Thursday 29th of June

In the framework of the 12th World Congress of the European Water Resources Association (EWRA) on Water Resources and Environment, under the theme "Managing Water-Energy-Land-Food under Climatic, Environmental and Social Instability", which was held in Thessaloniki, Greece, 27 June - 1 July 2023 (EWRA2023), 2 back-to-back Nexus Sessions dedicated to LENSES & REXUS projects were held on June 28th, as in the attached Congress program. In addition, a joint meeting of LENSES and REXUS projects took place in SWRI facilities in the morning of Thursday, June 29, 2023, followed by an informal working meeting at the side of the venue.

The REXUS and LENSES projects participants were welcomed with a typical Greek breakfast offered by SWRI and a tour at SWRI facilities.

This visit was accompanied by the following short working sessions, held in parallel:



1. **PSDM**, headed by Vassilis Pisinaras (SWRI), joined by Alessandro Pagano (IRSA), Ivan Portoghese (IRSA), Virginia Rosa Coletta (IRSA), Ivan Portoghese (IRSA), Cem Cetinkaya (EA-TEK) and Mert Gunacti (EA-TEK)
2. **Ecosystem Services**, headed by Dimitris Malamataris (SWRI), joined by Giorgia Bottaro (UNIPD)
3. **LAA activities** headed by Anna Chatzi (SWRI), joined by Estrella Lopez (I-CATALIST) and Filiz Barbaros (EA-TEK)
4. **Preparation of the 5th common plenary of REXUS-LENSES**, headed by Andreas Panagopoulos (SWRI), joined by José González Piqueras (UCLM)
5. **Modelling+water accounting**, headed by Konstantinos Babakos (SWRI) joined by Ivan Portoghese (IRSA), Ali Gul (EA-TEK), Gulay Onusluel Gul (EA-TEK) and Mert Gunacti (EA-TEK)

The minutes for each of the conducted working session are provided in the coming paragraphs:

1. PSDM

Participants: Alessandro Pagano (IRSA), Ivan Portoghese (IRSA), Virginia Rosa Coletta (IRSA), Ivan Portoghese (IRSA), Cem Cetinkaya (EA-TEK) and Mert Gunacti (EA-TEK), Vassilis Pisinaras (SWRI)

An initial overview was given regarding the current development status of PSDM in both study areas of Pinios case (the whole basin for REXUS, Agia and Delta areas for LENSES).

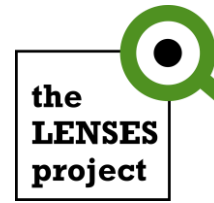
Regarding the WATER sector, the PSDM developed so far and updated according to previous meetings was found to be very complete and some revision may have to be provided in the details. Concerning the water quality part of the PSDM and since there is no detailed modeling results available, a more generic approach will be followed. SWRI will provide feedback to the whole process regarding the specificities of the pilot areas. Modeling results have to be provided by SWRI in order to be inputted into the PSDM.

Similar to WATER sector, the AGRICULTURE-LAND sector PSDM was found to be complete. Processes that are not relevant to Pinios cases will be properly managed. Close collaboration between IRSA and SWRI is needed to quantify the corresponding processes.

Regarding the ECOSYSTEM sector, the possibility of incorporating results from the REACT tool, implemented by DELTARES, has to be checked out. This tool is used for ecological impact assessment and therefore, it could provide useful input. The implementation state of this tool is still at the beginning, as the availability of data is being investigated. A presentation from DELTARES for the ecological impact assessment will be distributed to the involved partners.

Regarding ESS, it will be further developed after having finalized the quantification of the ESS that are feasible.

After merging with the modeling session, it was discussed and decided that the potential implementation of HEC-HMS in the Agia watershed will be checked out. A wide range of data



has to be provided to IRSA, EA-TEK and UTAEM in order to support both the PSDM and HEC-HMS development. The following data must be provided:

1. Crop pattern
2. Cultivation practices
3. Topology (re-submitted)
4. Wastewater treatment/demand and supply amounts
5. Protected areas
6. Any data that can be support the HEC-HMS implementation in Agia
7. Respond to EATEK's email for indicators
8. Prices of major crops (apples, cherries and kiwis for the LENSES project)

Moreover, a response to the request for feedback regarding the indicators shared by EA-TEK has to be provided while checking the potential for some of those indicators to be incorporated in the PSDM

2. Ecosystem Services

Participants: Giorgia Bottaro (UNIPD), Dimitris Malamataris (SWRI)

The validation of average production yield, crop production consumption and market price per crops as have been already estimated by SWRI regarding the food provisioning ES were discussed. Major topics were also:

1. The estimation of annual water availability, water consumption and water market price per each different water use concerning the water provisioning ES.
2. The estimation of carbon sequestration rate per land use, per capita emissions and market price related to the climate regulation ES
3. The estimation of water storage capacity per land use, water consumption per year and replacement cost regarding the water flow regulation ES.

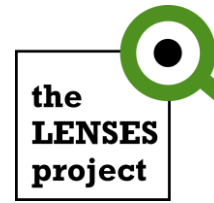
Moreover, the correlation of proposed NbS by LENSES stakeholders with the most relevant ecosystem services, significantly engaged the participants of this session.

3. LAA activities

Participants: Estrella Lopez (I-CATALIST), Filiz Barbaros (EA-TEK), Anna Chatzi (SWRI)

The update on the actions of Pinios and Gediz pilots was discussed. Specifically, the partners analyzed the proposal and evaluation of measures, the questionnaires sent to the stakeholders, the plan of the next actions and the difficulties that the pilots have faced so far. In addition, the forthcoming LAA activities in both REXUS and LENSES projects and their objectives were analyzed. The targets of the third workshop were discussed and some suggestions were given by I-CATALIST in order to achieve its main goal: "the plan to get to the vision".

The strategy around the REXUS and LENSES windows was also mentioned. The possibility of accessibility and interaction of stakeholders (International Section) was discussed. The idea is



to create two discussions/forums: i) within pilots (local) and ii) between pilots (international). Stakeholders are going to be invited to the learning platform.

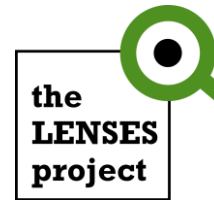
Next steps of WP2 followed. An updated long list of each pilots' stakeholders joined in each LAA activity (Interviews, Workshop 1, Workshop 2 etc.) is needed and I-CATALIST is going to create and send a template to every pilot for this purpose.

Finally the validation of technical workshops through stakeholders' feedback was discussed.

4. Preparation of the 5th common plenary of REXUS-LENSES

Participants: José González Piqueras (UCLM), Andreas Panagopoulos (SWRI)

Organisational issues were discussed with the two projects' coordinators (Stefano Fabiani on the side of LENSES, Jose Gonzalez Piqueras on the side of REXUS) and Andreas Panagopoulos, on the first day of the Conference and then in the working session at the SWRI premises on 29/6/2023 between the latter two. It was agreed that the 60 responses received by that date were satisfactory and decided that for logistics reasons and overall flexibility, the meeting will be constrained to a maximum number of 100 attendees with physical presence. The provisional idea for a 3 days meeting (2 days plenary sessions and one day field trip) was confirmed for its rationale. Based on the partners' members availability, it was decided to explore the possibility that at least WP and pilot leaders are available in both alternative offered time slots to give flexibility on the planning. It is the preference of the organizing team to select the slot 7-9/11/2023, which seems to be potentially feasibly, based on the response of the delegates. It was further discussed that we need to facilitate an internet connection for members to attend remotely, and explore the possibility to offer this option also in the break out sessions. SWRI presented the alternative venues (2-hotels and the geotechnical chamber premises), and it was mutually agreed that the best option would be a hotel and if possibly located in the city center to avoid long commuting for the delegates. SWRI team will ensure the delegates are offered options that fit the budget of all delegates and these should be close to the venue. Probably 2 break out rooms will be needed and various setups of the plenary room (theatric, ballroom, etc), along with the option to have a structure setup for panelists. The role of stakeholders was considered of high interest to the plenary and the projects' targets. It is thought that the pilot leaders are asked to work on the possibility to invite one key stakeholder from each pilot (the cross-boundary case study of Italy-Slovenia to be considered as 2 pilots for this purpose). These stakeholders would ideally need to be institutional, have a comprehensive overview of their pilot, speak English. We would like to involve them in a dedicated plenary of two sessions: first session for a short presentation of their pilot, the issues and ways ahead in reference to stakeholder engagement, possibilities to adopt the projects' proposals and methodological approaches and measures, the obstacles of full-scale implementation of NbS and overall the appeal of the projects' work to their region. Hence, this would be a golden opportunity to perform part of the validation procedure foreseen in both projects. The second session of the stakeholders' involvement shall be conducted in the form of a round table discussion with an integrated approach on the aforementioned issues. There is a need to reconsider the location of the field trip in the middle or at the end of the plenary and organize a special program for the stakeholders in order to ensure their networking whilst receiving a high essence of hospitality.



5. Hydrological modelling and water accounting in Greek pilots for the LENSES project.

Participants: Ivan Portoghese (IRSA), Ali Gul (EA-TEK), Gulay Onusluel Gul (EA-TEK), Mert Gunacti (EA-TEK), Konstantinos Babakos (SWRI)

The probability of using the mGROWA model in the two Greek pilots Delta and Agia based on the attributes of the model (methods it uses, scale, assumptions etc) was discussed.

Followed the potential contribution of the already implemented SWAT model in Delta for water accounting purposes. Discussion on the peculiarities of the basin that have already been modeled and could be useful, such as seawater intrusion in the coastal zone due to groundwater abstractions, significant contribution to the soil moisture through capillary rise.

Finally, participants analyzed the under-progress use of SWAT model in Agia and an attempt to calibrate the model by using soil moisture time series taken from soil moisture stations installed in various places in the basin (very few such approaches have been conducted so far). Good calibration of the model will contribute to water accounting with reliable estimates of water cycle components.