1. Short description of the project/activities

The North-Western Sahara Aquifer System, better known under the French acronym « SASS », extends over a total area of more than one million km². The NWSAS is a transboundary aquifer shared by Algeria (700 000 km²), Libya (250 000 km²) and Tunisia (80 000 km²). With a view to ensuring sustainable development in the region, OSS, in partnership with the three countries concerned, have elaborated, in a first phase, studies that helped a better hydraulic understanding of the NWSAS. However, given the increasing demands for water, notably for agriculture, and the urgent necessity to preserve a little renewable resource, OSS implanted a study on water valorisation. The study was of a socio-economic nature and consisted in an analysis of the farmers’ operation, and especially the irrigator’s real behaviour, based on surveys aimed at more than 3000 farmers. The surveys analysis allowed to identify the major constraints against water productivity, to assess the economic impacts of these constraints and to deduce recommendations for a better valorisation of the NWSAS water resources. The results of this study fed into a number of recommendations for a more sustainable agriculture and a better preservation of the aquifer’s resources.

With the aim of consolidating the results obtained by the socio-economic study, OSS, in partnership with the GWP and the three beneficiary countries, have conducted a study aiming at integrating climate change impacts across the most vulnerable to rain fall areas, notably the plain of Tunisian Jeffara and the north region of the basin (Biskra, Jerid), for the implementation of complementary surveys integrating the climate change dimension in order to:

- Identify the impacts of climate change observed;
- Analyse current adaptive capacity

2. Which climate change impacts are you already experiencing or expecting, such as floods, droughts, impacts on water quality etc.?

The surveys allowed to make the following observations:
- Degradation of water quality
- Increase of wind frequency
- Increase of sand storms frequency

3. Which concrete results did you achieve in 2014-2015 with regards to climate change adaptation?

The surveys allowed to identify the farmers’ adaptation options:
- Introduction of livestock breeding
- Abandonment of crops with high water needs
- Increase of water consumption
- Introduction of water saving irrigation techniques

4. Which major challenges did you face in this work? How did you overcome them?

No particular challenge for this study

5. Which lessons learned would you like to share with other basins?

The farmers have a significant adaptive capacity in facing climate change which should be strengthened

6. How do you finance your climate change activities within the basin? How do you plan to finance implementation of measures?

The funding resource are of two orders:
- International cooperation for the studies and the farmers’ dynamics.
- Countries funds (public and private) for the infrastructures (irrigation,...)
| 7. | How did you link transboundary climate change adaptation to adaptation activities at other levels, such as the national level?  
    There was no link with the adaptations at the national level as they were not studied in-depth at the national level. |
| 8. | How did you link transboundary climate change adaptation to adaptation activities of sectors such as adaptation in energy, in agriculture, in transportation or urbanisation?  
    There was no link with the adaptations at the national level as they were not studied in-depth at the national level. |
| 9. | Future planned activities  
    A study on water and food security within the framework of the NEXUS: the energy factor will be integrated. |
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