The Ramsar Convention on wetlands addresses the importance of developing and intensifying internationally coordinated actions for the conservation and wise use of wetlands. This requires that all involved communities have up-to-date and reliable information to understand wetland areas better, complete national inventories, perform monitoring activities, carry out assessments and put appropriate management plans in practice.
The European Space Agency is contributing to this complex and challenging task with its GlobWetland projects. GlobWetland II (GW-II) was implemented in partnership with Ramsar, other international organisations and 10 countries from the Southern Mediterranean Basin (from Morocco to Jordan). It provides 1800 maps and thousands of indicators for 200 wetlands located along the 10 participating countries, as well as the software for the map production together with training and capacity building to all partners.
GW-II maps are based on free available Landsat data, but the upcoming Sentinel-2 satellites with its 5-day temporal revisit and high spatial resolutions will be an excellent new basis for wetland monitoring in the future.
A dedicated study in GW-II demonstrated how Sentinel-2 time series could support and improve the monitoring of wetland and help to estimate the dimension of wetland threats and their ecological character.
Agriculture and aquaculture are significant threats for wetlands due to water pollution, water consumption and land reclamation.
The study was focussed on the delineation of the maximum and minimum water extent, the delineation and monitoring of aquacultures and the monitoring of water quality parameters. Finally it provides a methodology to estimate how agriculture contributes to water pollution and overuse of water in wetlands.
For the investigations time series of SPOT4 and RapidEye in a 5 days repetition as well as Landsat 8 data were available for the two of the GW-II wetlands, Azraq in Jordan and Lake Burullus in Egypt.