

## **Expertise climatologique et météorologique : outil d'aide à la décision pour la gestion active de la qualité des eaux littorales**

Climatological and meteorological expertise: tool to help decision making for beach management in the context of the new bathing waters directive

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The bathing water quality is highly dependant on meteorological parameters, especially rainfall. The new bathing water directive adopted in 2006 decreases the microbiological pollution level beyond which water is considered as polluted. However, local authorities will have the possibility to close their beaches if they suspect that they will be polluted. In that case, beaches may remain classified as “good quality”: even if the pollution really occurs, it has no sanitary impacts since beaches are closed. This mechanism gives value for meteorological information which may help local authorities to manage their beaches.

In MareClean project, Météo-France has conducted surveys to correlate past meteorological and pollution situations. It showed that half of pollution situations are linked to heavy rainfall one or two days ahead of the pollution day. Based on those surveys and exchanges with other project partners, Météo-France defined rainfall threshold beyond which pollution on beaches may occur and designed a meteorological system to help local authorities to manage their beaches. It includes, for example, rainfall hourly estimates on river basins made from a new sophisticated Météo-France product called ANTILOPE: It merges, on real-time, data from both hydrometeorological radar and automated rain gauges to estimate rainfall.

In 2009 new developments have been conducted to allow sewerage system to use automatically rain forecast for the coming hour computed from radar images. This is experimental in so far as radar images' quality is not very good due to the long distance to radars.

The fact that Météo-France has been real partner in the project and not only a data producer revealed to be of great interest: a deep, fruitful and interdisciplinary dialog happened between meteorological, hydrological, oceanographical, sewerage infrastructure experts and beach “managers”. Together they made possible to build a common view of the respective parameters' impacts. Beach pollution events are of course also influenced by other parameters (sewerage infrastructure problems, tide, sea current...) than weather parameters. MareClean already built the basis for an integrated system which will take into account the most important of those parameters.