

## **Co-Click'Eau: a participatory method to draw out a collective action toward good status of drinking water resource in water catchment areas**

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The European Water Framework Directive (2000/60/EC) requires member states to achieve good status of their water bodies. In France, legislation demands that stakeholders in priority water catchment areas (WCA) design and implement local action plans to improve water quality. One thousand priority WCAs are directly targeted by the legislation, but more than 30,000 WCAs are also potentially concerned.

As agriculture is highlighted as a major lever to achieve good status of water resources, changes in farming practices are often in question. Differences and difficulties among local stakeholders who do not share the same set of goals and constraints regarding water quality rapidly emerge during the initial steps of designing action plans. While public authorities focus on the impact of agricultural practices on water quality, farmers typically focus on the technical feasibility and economics of alternative practices. Up to now, such potential conflicts often result in actions plans that are generic, removed from the local challenges and opportunities, showing a weak compromise without any link to specific to the WCA in question. These action plans reflect a weak compromise and are not expected to contribute efficiently to the restoration of water quality.

To meet the challenge, INRA, the French National Institute for Agricultural Research, developed a participatory method named Co-Click'Eau. The method aims at improving collective stakeholder communication and sharing regarding agricultural practices thanks to multi-criteria assessment of territory-based scenarios. It involves a decision support system based on a mathematical programming model and takes into account a set of indicators including environmental and socio-economic indicators - for example pesticide use and nitrate loss for the former, and margins and labour costs for the latter. This method ensures that the emerging action plans are tailored to local realities because it:

- i. generates territory-based scenarios built upon local knowledge of agricultural practices and their collectively agreed-upon multi-criteria performances
- ii integrates within scenarios the expectations and constraints expressed by the diversity of local stakeholders during participatory workshops

The Co-Click'eau team designed and tested the method in three WCAs from 2010 to 2012. The method is now made explicit, formalised and available for implementation in other water catchments.