

MANAGEMENT PLAN FOR PARMA

Output factsheet: Strategies and action plans

Version 1

Project index number and acronym	CE32 AMIIGA
Lead partner	Central Mining Institute
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Responsible partner (PP name and number)	PP8 Parma Municipality
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Summary description of the strategy/action plan (developed and/or implemented)

Considering that the Municipality of Parma had few monitoring wells (MWs) on the investigated aquifer (the shallow one - up to about 25 m of depth), n. 7 new MWs were drilled in the AMIIGA contest: now the monitoring network consists in 11-12 MWs; during the AMIIGA lifetime n. 7 sampling and analytical campaigns were performed.

Evaluating the results of the studies, the RIG decided and approved three main goals to achieve after the end of AMIIGA:

- 1) to continue the biannual sampling campaigns in the AMIIGA network (the Municipality of Parma is providing for a specific budget: years 2019-2021); if necessary, the Local Authorities Planning Conference will be able to decide to extend the existing monitoring network (if necessary, in charge of the Municipality of Parma).
- 2) to elaborate a Risk Analysis for the kindergarden „Arlecchino“ area and evaluation of possible developments; according to the results, the Municipality of Parma will evaluate and implement the eventual remediation action enabled by the Italian law. As a first step of this study, in october 2019 an experimental phytocharacterization - to assess the presence of the contaminant (PCE) in the shallow clay level - will be performed by the Environmental local Authorities; one more monitoring well will be drilled.

3) processing the groundwater numerical model to assess the presence and behavior of the contamination plumes and to identify the actual (or the remote) sources of the contamination; the points of release identification could be an important goal to share with the whole territory of the FUA. Also in this 3rd case, according to the results, the Municipality of Parma will evaluate and implement the potential remediation action (Please note: according to Italian laws, all remediation actions and studies are in charge of the municipality if the contamination responsible is unknown). All previous, illustrated items have been planned for the period 2019 - 2021.

NUTS region(s) concerned by the strategy/action plan (relevant NUTS level)

NUTS 0: IT, ITALY

NUTS 1: ITH, Nord-Est

NUTS 2: ITH5, Emilia-Romagna

NUTS 3: ITH52, Parma

Expected impact and benefits of the strategy/action plan for the concerned territories and target groups

- Continuing the biannual sampling campaigns in the AMIIGA network (specific budget: years 2019-2021) will allow the public Authorities:
 - a) to extend the knowledge of the real status of the territory;
 - b) to evaluate the need of eventual remediation activities;
 - c) to involve even more the administrative Authorities of the FUA if the plumes should cross the Parma boundary.
- Elaborating a Risk Analysis for the kindergarden „Arlecchino“ area and evaluating of possible developments grants:
 - a) the environmental Authorities to start and to manage a remediation procedure;
 - b) the environmental Authorities to experiment and evaluate a new method to phytocharacterize a potential, polluted area;
 - c) the Municipality of Parma to handle a very sensitive area;

d) the parents of children to be aware that the area of the kindergarden is safe.

- Processing the groundwater numerical model and to identifying the actual (or the remote) sources of the contamination: the same impacts and benefits of the first dot.

Sustainability of the developed or implemented strategy/action plan and its transferability to other territories and stakeholders

The three main actions planned in the Management Plan all are completely sustainable and transferable because:

- a) the Italian laws oblige the public Authority to start a remediation procedure when the threshold values are exceeded;
- b) the Italian legislation forces the responsible of an environmental contamination to remediate;
- c) the BMT and CSIA analysis are a very fine method to evaluate the status of aquifer, above all in a contaminated situation by CHC (very common in the north of Italy);
- d) the experimental phytocharacterization - to assess the presence of the contaminant (in Parma PCE) in the shallow clay level - could be useful in the case of a presence of a very sensible human target (children, ill or old people, and so on);
- e) every intervention is not too much expensive (maybe except the numerical modelling);
- f) any intervention or study is unworkable, independently from the local, or regional, environmental peculiarities;
- g) all interventions are available on market.

The Municipality of Parma and ARPAE have introduced the use of the management plan to manage and control the remediation procedures and interventions and to find the necessary budget (only for PP8 because, according to Italian laws, ARPAE doesn't have the competence to perform the remediation works).

Lessons learned from the development/implementation process of the strategy/action plan and added value of transnational cooperation

Even though the Italian legislation provides a constant connection between the authorities during a remediation procedure, the opportunity to share the development of a Management Plan, with its strategy and action plan, allowed the Municipality of Parma to define a whole works process.

For the experience gained by Parma during AMIIGA, the rewarding aspects of transnational cooperation in a technical-scientific activity and administrative procedure are important. Evaluating the application of investigation, clean-up and monitoring techniques used in geographical regions with different regulatory approaches, is stimulating and rewarding; also interesting was to introduce the Management Plan, planning tool not included in the Italian procedure: MP helps to have a whole overview of the interventions. The added value of transnationality is the awareness that an interdisciplinary and widest approach is the best strategy for a useful site characterization/remediation.

References to relevant deliverables and web-links If applicable, pictures or images to be provided as annex

Activity A.T3.2 (Deliverables D.T3.2.1, D.T3.2.2, D.T3.2.3 and D.T3.2.4) contain the whole process and activities to approve the Management Plan: meetings, gatherings and workshops with project leader, political representatives, local Authorities and stakeholders, drawing the draft of the MP and its formal approval.

Moreover, in more detail, the product of the Deliverable D.T3.2.3: in the Management Plan all contents, developments, pictures and images are present, critical issues included.

Project products:

- Management Strategy: [Download](#)