

# MANAGEMENT PLAN FOR STUTTGART-FEUERBACH

## Output factsheet: Strategies and action plans

Project index number and acronym	CE32 AMIIGA
Lead partner	Central Mining Institute
Output number and title	O.T3.1.1 Management Plan
Responsible partner (PP name and number)	PP3 City of Stuttgart
Project website	<a href="http://interreg-central.eu/Content.Node/AMIIGA.html">http://interreg-central.eu/Content.Node/AMIIGA.html</a>
Delivery date	08/2019

### Summary description of the strategy/action plan (developed and/or implemented)

The city district Feuerbach is historically characterized by many industries and small commercial entities, handling with hazardous substances, which led to severe soil and groundwater contamination generated over the past decades. Thus, since 1983/84, the private responsible and municipality have investigated and remediated sites in Feuerbach that are contaminated with volatile chlorinated hydrocarbons (CHC). CHCs are of particular interest as pollutants, because they are (i) persistent and mobile in the underground, (ii) spread over a large area and (iii) endanger the quality of groundwater i.e. Stuttgart's mineral springs. The integral investigation of CHC contamination in soil and groundwater of Feuerbach has been also previously supported by EU-funded projects MAGIC and FOKS. However, the reference values (CHC concentration < 10 µg/l and load < 20 g/d) at some sites in Feuerbach could not be fully achieved with reasonable efforts and budget. Still it was unclear whether and how the CHC contamination of Feuerbach affects the regional mineral water aquifer Muschelkalk.

Therefore, the Department for Environmental Protection of the City of Stuttgart has implemented the innovative tool of a "Groundwater Management Plan" for the city district Feuerbach. The Management Plan (i) summarizes the results of the integral investigation, (ii) evaluates remediation effects, (iii) presents an Action Plan required to ensure the good groundwater status in Stuttgart-Feuerbach and (iv) defines an integral monitoring network for controlling the remediation effects. The detailed Action Plan summarizes development targets, necessary measures, responsibilities, timetables and additional remarks. Thus, the Groundwater Management Plan ensures the implementation of measures to achieve the groundwater quality goals in the shallow aquifers of Feuerbach. Furthermore, it contributes to the finding that groundwater contamination originating from Feuerbach does not affect the mineral springs of Stuttgart.

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

DE Deutschland  
DE1 Baden-Württemberg  
DE11 Stuttgart  
DE111 Stuttgart - city region

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

The implementation of the measures defined in the Management Plan will lead to: (i) minimization of CHC inputs in the shallow aquifers, (ii) efficient integral monitoring of groundwater yield and quality, as well as further development and possibility to react according to contamination changes, (iii) better integral monitoring and evaluation of remediation measurements in Stuttgart-Feuerbach.

During the preparation of the Management Plan, all relevant parties were involved. In this way, a wide support at local level was and will be gained. Clear definitions and agreement on responsibilities, timelines and sources of funding ensure the implementation of necessary measures. Furthermore, the Management Plan will be presented to the city council after the project lifetime. All this is of key importance for the successful implementation of necessary measures and reaching the defined quality goals.

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

The developed Management Plan and its strategies were presented at many occasions (meetings / conferences) to other experts, local and regional authorities. The tool Management Plan was recognized as a long-term and sustainable solution to deal with mixed groundwater contamination in urban areas and FUAs. The Management Plan has been proved to be an appropriate and flexible instrument for planning, coordinating and implementing necessary measures.

Additionally, Management Plans are dealing with contaminations at medium scale, neglected in existing legislations. Therefore, the developed tools and strategies have a high potential for use in other territories. The City Council of Stuttgart approved the management plan and its implementation. The Department for Environmental Protection will coordinate and finance the follow-up measures in the next 20 years.

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

The Management Plan for Stuttgart-Feuerbach was developed in a close cooperation with all project partners. Every six months, progresses on Management Plans were presented whereby all partners actively discussed the results and gave valuable remarks to be included in the particular Management Plan.

Lessons learned:

- Involvement of stakeholders is the key value, transparency of the work is crucial
- A Management plan is a flexible tool designed to adopt to feedback (and can be adjusted according to new findings)
- Budget planning is a challenging task, unpredictable natural conditions lead to the adjustment of the actions and adaption of the budget
- Defining milestones is important to secure a successful implementation

- Quality goals, development targets and action plans have to be agreed with the responsible authorities
- Management Plans should be written in a way that non-technical person are able to understand the content as well. However, all technical details that are relevant for decision makers should be included.

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

- Framework and background of the pilot site for Management Plan (D.T3.1.1)
- Draft of Management Plan for Stuttgart-Feuerbach (D.T3.1.2)
- Final Management Plan for Stuttgart-Feuerbach (D.T3.1.3) - Abstract in English [Download](#)
- Workshop on framework and background of the pilot sites (D.T3.2.1)
- Workshop on draft of the Management Plan (D.T3.2.2)
- Workshop on finalization and approval of the Management Plan (D.T3.2.3)
- Report on management of the RIG on FUA level (D.T3.2.4)
- Report of kick-off workshop on Management Plan methodology (D.T3.3.1)
- Questionnaire on local experiences on Management Plans (D.T3.3.2)
- Assessment workshop on draft of Management Plans (D.T3.3.3)
- Assessment report on the survey outputs (D.T3.3.4)
- Exchange of experiences made with the development and approval process of the Management Plans (D.T3.3.5)
- Good practice report (D.T3.3.6) - Annex 1 to Management Strategy
- Management Strategy (D.T3.3.7) - how to develop a Management Plan [Download](#)
- Trainings of practitioners on Management Plan development (D.T3.4.1)
- Webinar (D.C4.1) - Management Plan for Stuttgart-Feuerbach in German [Download](#)

All mentioned deliverables have been uploaded to the eMS and can be requested at: [sandra.vasin@stuttgart.de](mailto:sandra.vasin@stuttgart.de)

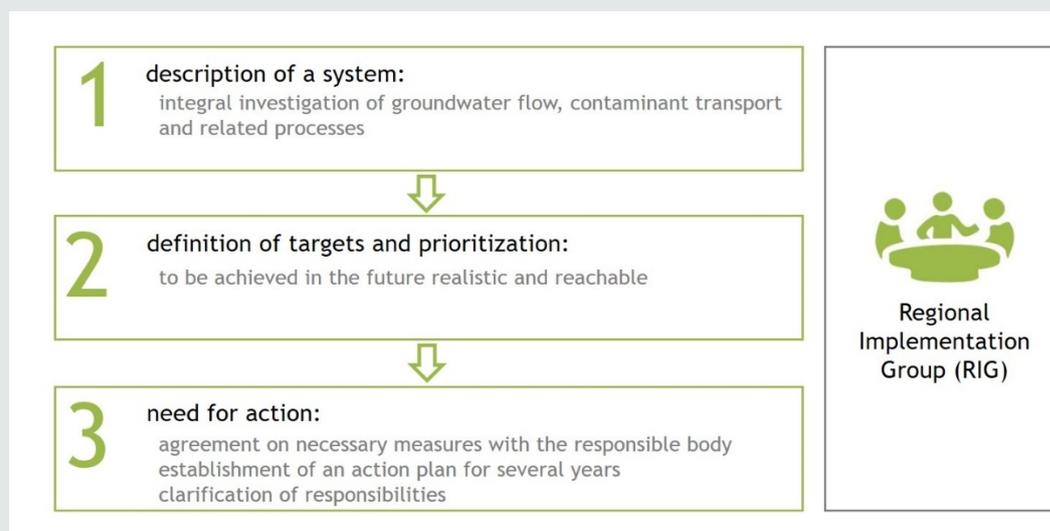


Figure 1: A Management Plan has three elements: 1) detailed description of a system, 2) definition of target values and prioritization, 3) action plan of necessary measures.

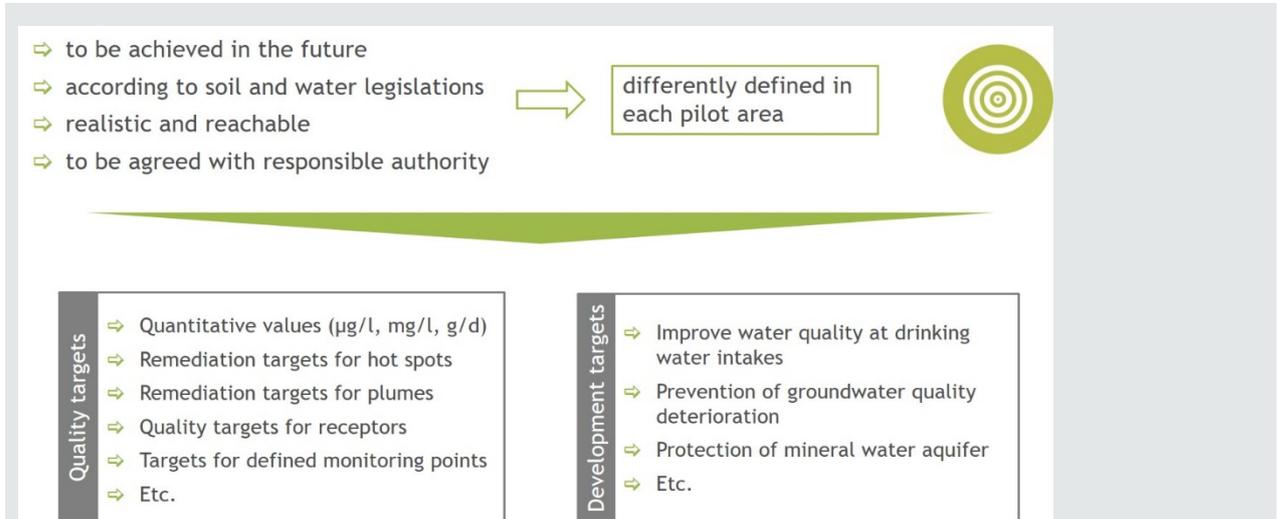


Figure 2: Management plan enables definition of realistic and achievable targets.

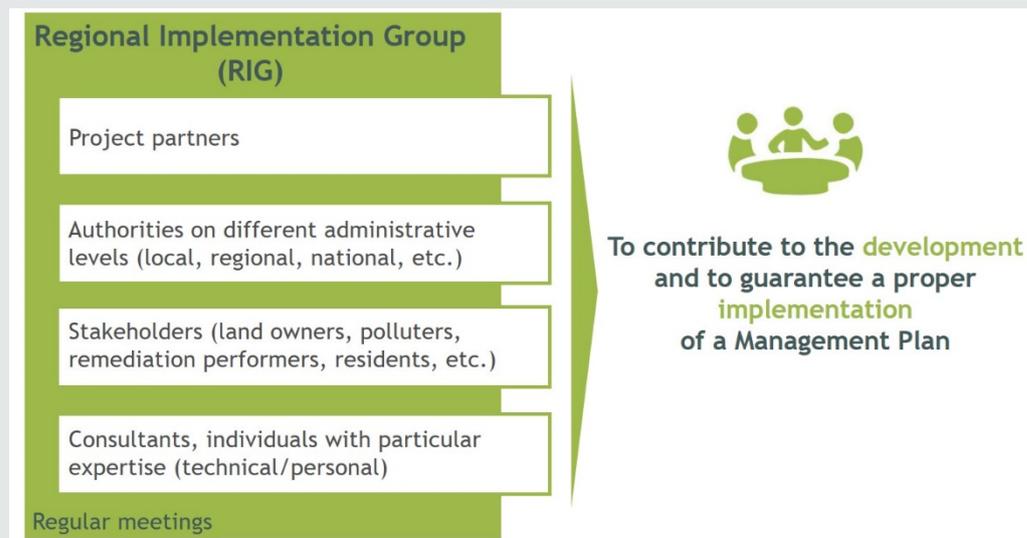


Figure 3: Regional Implementation Group - involvement of stakeholders is the key value of the Management Plan approach.