

Round-Table

Situation of contaminated land in Switzerland

In Switzerland there are some 50,000 to 60,000 polluted sites to register of which some 3-4'000 are considered to be in need of remediation and thus classified as contaminated sites. Although Switzerland had no significant mining industry, hardly any heavy industries, no war-related contamination and a long tradition of incinerating urban waste, the contaminated land management has a high priority due to the coincidence of a big number of contaminated sites in the immediate neighbourhood of highly vulnerable groundwater and due to a high population density in the Swiss central plateau. The main natural resource affected is therefore often the public supply of drinking water.

Vulnerable groundwater resources cause a strong pressure for a fast remediation of polluted sites, even when the costs are elevated. The fact that Switzerland has a high population density with accordingly high land prizes may explain why we Swiss remediate to an extent and to costs that would not make sense in other countries.

Overview

I won't describe the guidelines of the swiss regulations as I assume that most or even all of you have already heard and discussed these points in earlier meetings of this adhoc-group. I would rather like to focus on some new aspects since the last meeting two years ago and the actual situation in Switzerland.

New financial regulations: Revision of the Federal Law relating to the Protection of the Environment:

As you know in Switzerland the polluter pays principle is established, which means that the person who has caused a measure to have to be taken must bear the costs. The estimated amount for all the remediations in Switzerland lies somewhere over 3 billion € In cases in which the responsible person can no longer be prosecuted (so-called orphan sites) or in cases of landfills with municipal waste the community must bear the costs of remediation. In such cases the federal authorities take over 40% of the remediation costs. To finance this contribution to remediation, the federal government established a fund which is raised by means of a charge on the disposal of wastes in landfills. 15 million €per year are in this way put aside for remediation actions.

Due to an intervention in parliament there are now 3 important changes in financing the treatment of polluted and contaminated sites:

- The Swiss state will in future not only pay for the remediation but also for the measures taken during investigation and monitoring. This should facilitate the remediation of orphan sites.
- In addition also the establishment of the register of polluted sites will be financially supported: The federal authorities pay 320 € per site to the canton but only under the condition that the registration is finished before the end of 2005. This financial support will probably speed up some government employees in the cantons.
- The third new financial regulation concerns the elimination of excavated material from polluted sites. In many cases, an existing site may be polluted but not in need of remediation – i.e. not a contaminated site. Whoever excavates material from such a site, e.g. in the context of a construction project, is not only responsible for its legally correct disposal but also for the costs arising from it. The modification now under way in the Swiss parliament demands that at least 2/3 of the costs for analysis and elimination of the excavated material

is paid by the polluter or the former landowner (acquisition between 72 and 97; elimination is necessary; no other financial compensation e.g. price-reduction). The splitting of the financial charge prevents on one side that the constructing party does excavate and remediate in a luxury way, charging all on the expense of the former landowner, and it prevents on the other side, that the new owner of the site must take all the risk and uncertainties of the elimination of eventually polluted material.

Register of polluted sites

There are some aspects of the Swiss register that might be of interest to you:

- The register is a list of all known polluted sites. It is mainly based on information from affected companies, on internal information from authorities and on details from contemporary witnesses. The only sites to be entered in the register are those polluted with waste or those where there is probable cause to expect that they are polluted. Therefore it does **not** contain dubious sites.
- The registry only contains essential data. No technical investigations are necessary for entry. This makes it a relatively cost-effective registration.
- The owner of the site always receives the opportunity to state his position on the entry in the register and he can make additional clarifications. Thanks to this opportunity the general acceptance is enormously increased and also the accuracy is better.
- The register is publicly accessible and therefore contributes to general transparency and clear relationships. It is also intended to help minimise today's insecurities in construction project planning, property transactions or loan procedures where polluted sites are concerned.
- The register is a dynamic working instrument being adapted to new information on an ongoing basis. A site must be removed from the register as soon as it turns out that it is not or is no longer polluted with waste. New investigation and remediation results are to be updated continuously.

As mentioned before the cantons are financially rewarded for every entry in their register that is finish before end of 2005. Half of the cantons will therefore be on schedule and complete their register this year. But due to budget and manpower cuts in the public administration we have to assume that the last Mohican will finish his work around 2012.

I already said it in the beginning of my speech that after completion there will be an estimated number of 60'000 sites in the Swiss database. 2/3 of the entries are company sites, one third are waste disposal sites and less than 1% are accident sites. Under the assumption that the medium registration cost is about 1'000 € the total amount for establishing the Swiss register will be 60 mio. €

- With this register the authorities gain a important planning and information instrument that lists existing pollutions, thus preventing waste-polluted sites from going unnoticed and endangering the environment.
- It enables them to further dividing recorded sites into harmless sites and those that must be investigated further and to pinpoint any acute hazards to the environment requiring immediate action.
- Last but not least the public register also serves as an orientation for those affected such as site owners, developers, real estate agents, banks, insurance companies and neighbours. The register serves as a basis for an objective evaluation of a property. Construction projects can

be adapted in good time to the facts and surprises that lead to halting or delaying construction are avoided.

Number of polluted contaminated sites

Out of the 60'000 entries in the register of polluted sites we estimate that 15'000 sites need further investigation. About 1/3 of these cases will have to undergo a detailed analysis. The final number of contaminated sites will be around 3 - 4'000. This is less than 7% of the sites in the register! The total investigations costs will settle somewhere around 600 mio € The remediations itself will cost approximately 2.5 billion €

Switzerland has many small contaminated sites and only a few bigger and expensive cases. In almost 90% of all cases the overall cost will be less than 1 mio € Only 30 to 40 sites will provoke remediation costs over 30 mio. €

Up to now about 200 sites have been remediated. There are 2 very big remediation projects under way, both of which are ancient landfills for hazardous waste and municipal waste:

Kölliken: where an agreement between the financing partners was achieved this year. Up to now the securing measures produced costs of over 100 mio € The annual maintenance costs 5 mio € The remediation now in progress will cost 280 mio. € The same amount would be necessary for another 40 years of surveillance. But in the end we would not have solved the problem. The potential for groundwater contamination would still remain for many decades. As 95% of the waste in the landfill is municipal waste (slag of MWIP) the communities will have to pay most of it.

In the case of Bonfol all the waste is of private industrial origin. The costs, around 200 mio € will be charged to private companies.

Brownfields

Brownfields are areas derelict or underused. The Swiss agency of the environment and the Swiss agency for spatial development published last year an extensive study on brownfields in Switzerland. The study shows that there are about 17 mio m² of brownfields in Switzerland - a area as big as the city of Geneva and its suburbs with a population of 190'000 people and 140'000 jobs. Brownfields, as you know, result from changing patterns of industry and new economic developments. In the 90s Switzerland has lost about 150'000 jobs in the industrial and commercial sectors. We estimate that due to the under-utilisation of industrial areas municipalities loose an annual tax-income of 100 to 300 mio. € Authorities and tax-payers therefore should have a big interest in revitalizing these brownfields. The advancing land use through growing agglomerations at a rate of almost one square meter per second is another reason why revitalisation of brownfields becomes an increasingly important issue on the political agenda in Switzerland.

The study investigated the reasons why brownfields are often abandoned. Due to long and therefore expensive planning periods it's in more than 50% of all cases the lack of potentially interested investors. One third of the landowner complain about difficulties on the level of spatial planning (changing planning zones) a third reason seems to be the lack of a financial support to overcome financial bottlenecks at the beginning of revitalizing-projects.

In most cases landowner also complain about the missing support from authorities and the lack of coordination between the involved administrations with multiple and partially even contradictious permissions and conditions. This is probably the main reason for the long planning periods.

The remediation of the potentially contaminated site itself does not seem to be the main reason for difficulties in the rehabilitation of brownfields. But our study also shows that the remediation may be expensive.

The revitalization is possible as soon as there is a financial profit in re-using the brownfield site. The net profit of the revitalized site must be bigger than the remediation costs and the transformation costs (infrastructure costs and development costs). As land-prizes are high in economic centres a profit can often be realized in these districts. A profit gets more difficult to gain in industrial centres and is poorly achievable in rural regions. The transaction costs usually have a low potential for economic optimizations. But the costs for the remediation of the contaminated site can massively be reduced by a clever planning and coordination of the process.

During the last two years our division was busy with the urgent and important revision of the federal law on the environment and the time-consuming interventions in parliament. But we hope that within the next months we can put a stronger focus on the promotion of the sustainable redevelopment of urban brownfield sites.

We are planning to develop a modelling tool that helps us to coordinate the various steps regarding spatial planning, protection of the environment, construction planning and financing and to put them in a logical timesaving order. To facilitate and improve the information-flux between the different stakeholders involved we intend to start an internet-platform for the cantonal and federal experts. Hopefully I will be able to present some detailed information about successful brownfield recycling and our tools at the next meeting of the adhoc-working group.