

## Summary:

# The State's contaminated areas

### Audit background

There is a large number of contaminated or potentially contaminated areas in Sweden. Their size varies, as does the risk to human health and the environment. There are also areas with risks other than contamination. This applies for example to the Swedish Armed Forces' closed-down training areas and artillery ranges where unexploded ordnance (UXO) can be found, which can pose a direct hazard to human life and health.

In a survey by the County Administrative Boards in 1999-2015 the total number of contaminated or potentially contaminated areas was estimated to be about 81 500. That figure includes about 1 000 very high risk areas (risk class 1) and about 7 000 high risk areas (risk class 2) for human health and the environment. The number of contaminated areas owned by the State or contaminated by central government activities is unclear. However, the numbers involved are large. For example, the Swedish Transport Administration estimates that it may be responsible for up to a tenth of all contaminated areas in Sweden, corresponding to about 8 000 areas. The corresponding number for the Swedish Armed Forces is estimated to be about 2 200.

The number of areas with UXO is unclear.

It is costly to remediate contaminated areas. For example, in 2007 the Swedish Environmental Protection Agency estimated the costs of remediating the most contaminated areas as about SEK 45 billion up to 2050. It is also costly to clear areas of UXO. This probably involves billions of SEK.

#### *Purpose and audit issues*

The purpose of the audit is to investigate whether conditions exist for effective prioritisation of remediation in areas that are owned or have been contaminated by the State. The purpose is further to investigate the risks of considerable expenditure for remediation of such areas and whether accounting for and reporting of the risks is transparent.

The audit investigates seven different sub-issues. In summary, the issues refer to knowledge and overview of the State's contaminated or potentially hazardous areas. They further refer to divisions of responsibility and estimates of historical and future costs of remediation, as well as the priorities on which remediation and clearance are based.

The audit covers both contaminated areas that refer to existing and discontinued central government agencies or organisations, and contaminated areas that have been transferred to state-owned or private companies when certain central government activities have been corporatised. The Swedish Fortifications Agency, the Swedish Armed Forces, the Swedish Environmental Protection Agency, the Geological Survey of Sweden (SGU) and the Swedish Transport Administration are those primarily affected.

## Audit findings

The Swedish NAO's overall conclusion is that there are considerable deficiencies in surveys of contaminated areas owned by the State or contaminated by central government activities. Consequently, it is also true that few cost estimates for remediation have been carried out. This makes it more difficult to assess the order and pace at which remediation or clearance of contaminated or high-risk areas should take place in order to be effective. Assessments of risks to human health and the environment are also more difficult, as well as reporting of previous and expected expenditure for remediation and clearance.

### *Survey deficiencies and gaps*

There are general deficiencies in the overall surveys of contaminated areas in Sweden by the County Administrative Boards; for example there are areas contaminated by substances whose hazards have only been noticed in recent years and which have not been included. Highly fluorinated substances (PFAS) are such an example.

Many contaminated areas owned by the State or contaminated by central government activities are not included in the County Administrative Boards' surveys. There are several reasons for this, such as the fact that areas at the disposal of the Swedish Armed Forces may be subject to secrecy provisions.

The audit shows several examples of deficiencies in the surveys of the State's contaminated or potentially hazardous areas:

The Swedish Transport Administration has up to now only surveyed half of the agency's 8 000 contaminated areas. The agency estimates that it will take a long time to achieve the knowledge requirement under the Swedish Environmental Code. Nor does the Swedish Transport Administration know the extent of contaminated areas covered by the environmental guarantee given by the State in connection with the corporatisation of various agencies and public enterprises.

The survey by the Swedish Armed Forces covering about 2 200 potentially contaminated areas, was largely conducted in the 1990s. On the basis of current requirements, an unknown number of areas may have been assigned to a risk class that is too low. The agency is revising the survey.

The Swedish Fortifications Agency, which has about 15 000 hectares of land on discontinued training areas and artillery ranges, is conducting a survey of the existence of UXO on them. The survey is expected to be completed in 5–10 years. The agency does not know how many contaminated areas it is responsible for.

There is also a considerable number of objects that were closed down by the Swedish Armed Forces in the 1980s and that were not transferred to the Swedish Fortifications Agency when that agency was set up in 1994. In relation to today's requirements these objects were probably not decommissioned in an environmentally safe way. It is not clear which agency is responsible for surveying and remediation of these sites.

Other agencies and state-owned companies included in the audit have surveyed contaminated areas to a varying extent. Most state that further investigation is needed to gain a reasonable idea of the existence of such areas and of future costs of remediation.

### *Substantial costs but few reliable estimates*

After 2007 no estimates have been made of the costs of remediation of the most contaminated areas in Sweden. Earlier estimates show, however, that it may be a matter of billions of SEK.

The Swedish Transport Administration has not followed up the actual costs of remediation, either as regards the Transport Administration's contaminated areas or claims under the environmental guarantee given by the State. The Swedish Transport Administration thus lacks material to enable well-founded estimates to be made of future expenditure for remediation of contaminated areas managed by the agency. The same applies to the Swedish Transport Administration's expenditure for the total commitment to pay for remediation under the environmental guarantee.

The Swedish Fortifications Agency currently lacks supporting data on which to base future estimations of future expenditure for clearance of UXO. The agency has, however, started work on producing average costs for clearance for the purpose of estimating this expenditure. Clearance of areas where there is UXO is a major future financial challenge for the Swedish Fortifications Agency.

The Swedish Armed Forces' future expenditure for remediation of areas contaminated by PFAS is not currently known, but is expected to involve very large amounts. The remediation of areas contaminated by PFAS is a major future financial challenge for both the Swedish Armed Forces and other agencies and companies whose activities have given rise to PFAS contamination.

The rules on how agencies are to report provisions for future expenditure on remediation and recognise costs against appropriations, entail incentives not to carry out surveys and cost estimates. In practice the rules mean that the more knowledge an agency has about its contaminated areas and remediation costs, the earlier it needs to make provisions in its

annual report and appropriations accounting for such costs. The consequence may be that the agency delays collecting data on contaminated or potentially hazardous areas.

Uncertainties in agencies' reporting of future expenditure for remediation of contamination and clearance of UXO has an impact on the Government's reporting to the Riksdag in the Central Government Annual Report. The reporting is meagre and emphasises the major uncertainties.

### *The degree of responsibility taken by the State for older contamination varies*

There are a considerable number of areas of older contamination that the State in practice does not take responsibility for remediating.

Environmental legislation has time limitations on responsibility for remedying older contamination, which have been supplemented by case law. However, there are no legal obstacles to voluntary responsibility for remediation on the part of the operator. Government grants from the Swedish Environmental Protection Agency's appropriation 1:4 is the only possibility of financing remediation of areas where the operator is not responsible, does not take voluntary responsibility or cannot pay for the remediation. The priorities for the appropriation for grants to remediation of contaminated areas are mainly based on whether the areas pose a risk to human health or the environment.

The audit shows that the State takes varying degrees of responsibility for older contamination. On the one hand the agencies, like other operators, are entitled to restrict their responsibility for older contamination, on the other hand this means that many areas contaminated by central government activities are not decontaminated. In addition, limited responsibility for older contamination may lead to increased pressure on the appropriation for grants for decontamination. A further question is whether it is probable that decontamination of such areas will be done at all, since a limited number of contaminated areas are cleaned with the help of government grants. It may also give the rest of society the impression that the State does not take responsibility for older contamination that it has caused.

The number of older contamination sites that the State does not take responsibility for decontaminating is probably considerable. For example, the Swedish Transport Administration states that a great proportion of contamination in the areas it manages is old.

### *Unclear responsibility and limitations concerning defence properties*

The Ordinance containing Instructions for the Swedish Armed Forces restricts responsibility for remediation of contamination to what the agency's resources allow. However, the instruction is unclear on several points, both concerning which properties are included and how far the responsibility extends.

The Swedish Fortifications Agency's appropriation directions has some restrictions with regard to the use of surpluses from sales of defence properties for decontamination.

As regards clearance of UXO there is a lack of clarity concerning the division of responsibility between the Swedish Fortifications Agency and the Swedish Armed Forces.

### *Environmental supervision activities influence priorities*

The work of decontamination is governed for some agencies to a great extent by the local and regional environmental supervision agencies' priorities and level of activity and not by their own systematic actions. Thus there is a risk that available resources for decontamination are not used effectively. According to the Swedish Environmental Protection Agency environmental supervision plays an important role in bringing about decontamination that is paid for by government grants. The audit shows that to a great extent this also applies to areas contaminated by central government activities. Orders or other requirements from the environmental supervision agencies have a significant impact on some agencies' priorities as to which areas are to be decontaminated and when this is to take place. The Swedish Transport Administration usually only carries out decontamination in response to an order or a threatened order. Orders and other external requirements also have an impact on the priorities of the Geological Survey of Sweden as regards areas decontaminated by central government activities that are no longer in operation.

### *Decontamination covered by the environmental guarantee given by the State has a special position*

Decontamination covered by the environmental guarantee is in practice given priority before decontamination of areas managed by the Swedish Transport Administration and certain other investments. This follows from the contractual regulation of the environmental guarantee and the Swedish Transport Administration's interpretation of it. This means that intended remediation by a company, for example before a sale, may be given priority over the Swedish Transport Administration's remediation of areas it manages or over the implementation of various traffic safety measures.

The remediation both of areas managed by the Swedish Transport Administration and remediation based on requirements under the environmental guarantee, is funded through the Swedish Transport Administration appropriation. The companies covered by the environmental guarantee steer the areas that are to be remediated and at what pace. The Swedish Transport Administration, which is responsible for handling the environmental guarantee, does not review the companies' priorities. Several of the companies have expressed a desire to the Swedish Transport Administration for increased participation by the agency in dealing with areas covered by the environmental guarantee. The Swedish Transport Administration has not as yet made any decision on this.

### *Necessity for continued and developed cooperation*

Since dealing with contaminated areas is complex, agencies need to cooperate to improve knowledge transfer. The cooperation that takes place today in various constellations of agencies needs to be developed. Cooperation may also need to be extended to cover other central government agencies and state-owned companies with extensive holdings of contaminated areas.

## **Recommendations**

### *Recommendations to the Government*

- Facilitate effective economic planning and assignment of priorities on the basis of overall public benefit between different remediation needs as regards the State's contaminated or potentially hazardous areas, by developing overall guidance with principles for assigning priorities. The principles should take into account risk to human health and the environment as well as the number of people who risk exposure and other public interests, such as pressure for development. Such guidance would also facilitate cost assessments, reporting and overview.
- Clarify the regulation of the Swedish Armed Forces' responsibility for remediation of contamination.
- Clarify the regulation of responsibility between the Swedish Armed Forces and the Swedish Fortifications Agency for remediation of decontamination and clearance of UXO. In addition the Government should clarify what the Swedish Fortifications Agency's surplus from sales of training areas and artillery ranges may be used for.
- Consider setting up reporting requirements for agencies' work with contaminated areas and instructing the agencies concerned to cooperate on management of contaminated areas.
- Develop reporting to the Riksdag in the Central Government Annual Report with regard to the State's contaminated or potentially hazardous areas. This is in light of the risk of major expenditure both for individual agencies and for the State as a whole and to give a fair presentation of the central government commitment to decontamination and clearance.

### *Recommendations to the agencies*

- Develop surveys of contaminated areas, to gain a better basis for risk assessment and cost estimates and thus be able to order priorities effectively.
- Improve follow-up and estimate overall costs for remediation.
- Develop and enhance cooperation on management of contaminated areas.

In addition, the Swedish NAO addresses a separate recommendation to the Swedish Transport Administration:

- Make a survey of the scope at an overall level of the central government commitment under the environmental guarantee and extend the dialogue with the companies concerned concerning handling of the guarantee.