

## **Summary of results of the QUESTIONNAIRE for the 8<sup>th</sup> meeting of ICCL – International Committee on Contaminated Land**

The 10-11<sup>th</sup> of September 2007 the Swedish Environmental Protection Agency had the pleasure of arranging the 8<sup>th</sup> meeting of the International Committee on Contaminated Land (formerly the Ad Hoc International Working Group on Contaminated Land). The ICCL meeting was held at the Scandic Hasselbacken, Skansen, in the central parts of Stockholm City. A total of 55 participants attended the meeting, representing 26 different countries. The meeting consisted of presentations and discussions focusing on issues such as risk management and risk communication, remediation objectives, strategies for soil protection and keeping track on information on contamination.

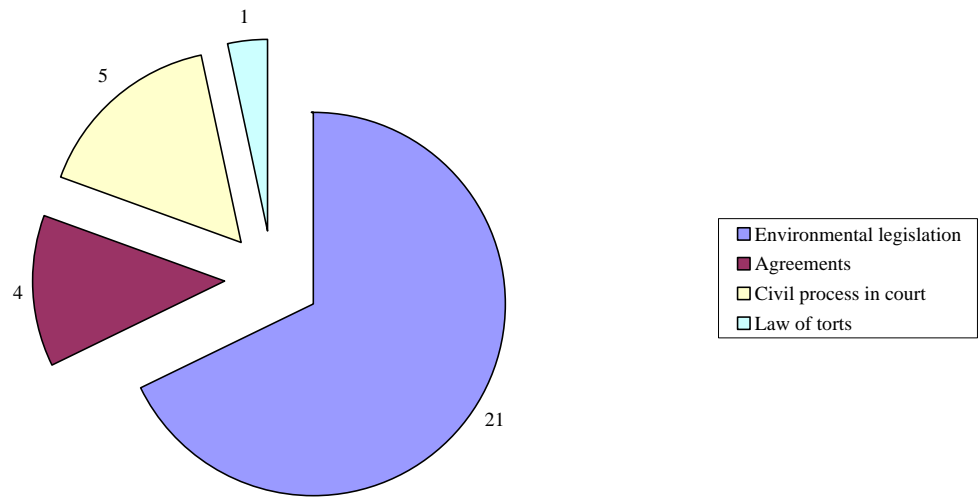
Along with the invitation to the meeting a questionnaire was distributed to approximately 45 countries. The aim of the questionnaire was receiving a brief overview of existing or upcoming strategies and systems dealing with contaminated land on the following topics:

- ◇ *How to reach remediation objectives?*
- ◇ *How to keep track of information on contamination?*
- ◇ *How to secure remediation results and costs?*

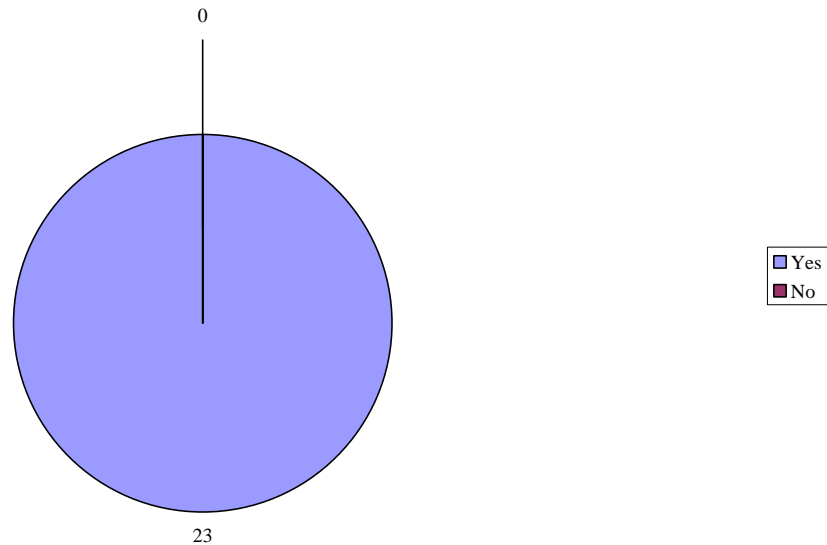
Totally 24 countries responded to the questionnaire and the answers resulted in an overview of systems and strategies in the responding countries for the handling of the issues above. The questionnaire further illuminated interesting experiences from the countries. During the ICCL meeting the results of the questionnaire were briefly presented through a compilation of some of the results and short comments on those results. The compilation was layered with presentations on the above topics carried out by some of the participants of the meeting as well as discussions and exchange of experiences on the issues.

The Swedish Geotechnical Institute has compiled the results of the questionnaire commissioned by the Swedish Environmental Protection Agency. In this document you will find the compilation of all the questions and answers associated with the questionnaire. Most of the additional comments provided by respondents are also included. The aim of this PM is not to provide an analyses of the answers or to draw conclusions from the results but simply to compile the results. Please note that some of the questions were put in a way that allowed different aspects and levels of answering why the results are not all comparable. Nonetheless, the results presented in this document proved to be a valuable overview of existing national strategies and systems dealing with contaminated land topics.

**Question 1 - How is the responsibility of contaminated sites regulated in your country?**



**Question 2 - Are remediation objectives for remediation projects applied in your country?**

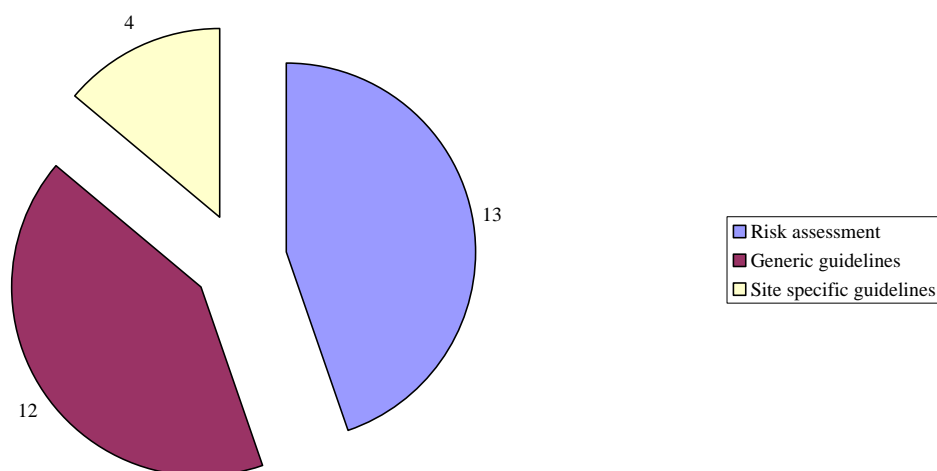


**Additional comments:**

- ◇ The environmental authority must approve treatment or removal of contaminated soil or treatment of groundwater. This approval is given in a notification or environmental permit decision. The applicant gives his proposal for remediation objectives in the application. Targets of the remediation are then sustained in the decision. (Finland)
- ◇ We use risk based management with respect to use of the site. The global objective is to assess, after remediation, the compatibility with the state of environment and the use that are planned. We use case by case assessment and do not use “national thresholds”. (France)
- ◇ Target values depending on future use. (Luxembourg)
- ◇ Suitable for present and future use – Removing the risks – The costs have to be in balance the environmental advantage. (the Netherlands)
- ◇ Someone who wishes to clean up a site may either clean it up to a use based generic contaminant concentration (generic criteria) or, following a risk assessment, to a site specific risk-based criteria or used engineered measure (meanwhile, if the site is contaminated by petroleum hydrocarbons, risk assessment is not an option and the site must be cleaned up to the generic criteria. Also, if the site will be reused for houses where the inhabitants will have access to private backyards, the first 2 meters of soil must be cleaned up to the generic residential criteria. Below those 2 meters, risk assessment or engineered measures may be used.) (Quebec, Canada)
- ◇ The objective of remediation is the elimination of impacts that led to the need for remediation. The objectives are set in the Ordinance relating to the Remediation of Polluted Sites (Contaminated Sites Ordinance, CSO; [http://www.admin.ch/ch/d/sr/c814\\_600.html](http://www.admin.ch/ch/d/sr/c814_600.html)). (Switzerland)
- ◇ They are set by regional authorities on a case by case basis. (Spain)
- ◇ Remediation targets are not legally prescribed. They are set in case-by-base decisions. (Germany)
- ◇ The remediation target limit value is determined by the use of site specific risk assessment. (Hungary)

- ◇ Remediation objectives often involve both a risk based concentration level, and some consideration of cost effectiveness in the evaluation of remedial alternatives. (US)
- ◇ Core (minimal) remediation objectives are fixed at the end of a detailed soil investigation; precise operational objectives are fixed at the end of a “feasibility study” taking into account core objectives, secondary objectives and the possible side effects of remediation techniques (use of a cost-benefice analysis). (Wallonia, Belgium)

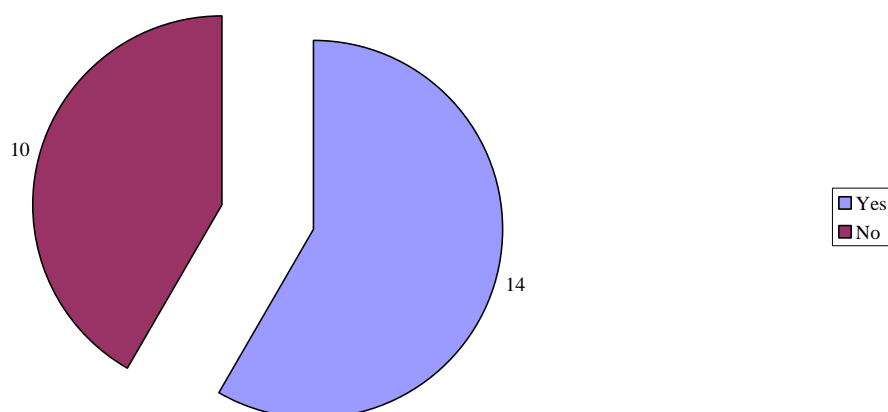
**Question 3 - What is the starting point of working out remediation objectives in your country?**



**Additional comments:**

- ◇ Generic guidelines are used in the starting point, but some level of site-specific risk assessment is always required. (Finland)
- ◇ Case per case approach after the closing site with classified installations. (Luxembourg)
- ◇ Site specific guidelines. Local conditions are taken into account when deciding how to remedy damage. (Serbia)
- ◇ It depends on the kind of situation: if risk assessment is done – as it is generally the case for large-scale sites – risk configuration is taken as starting point to fix the remediation objectives. (Wallonia, Belgium)

**Question 4 - Does your country have a system for following up remediation objectives?**

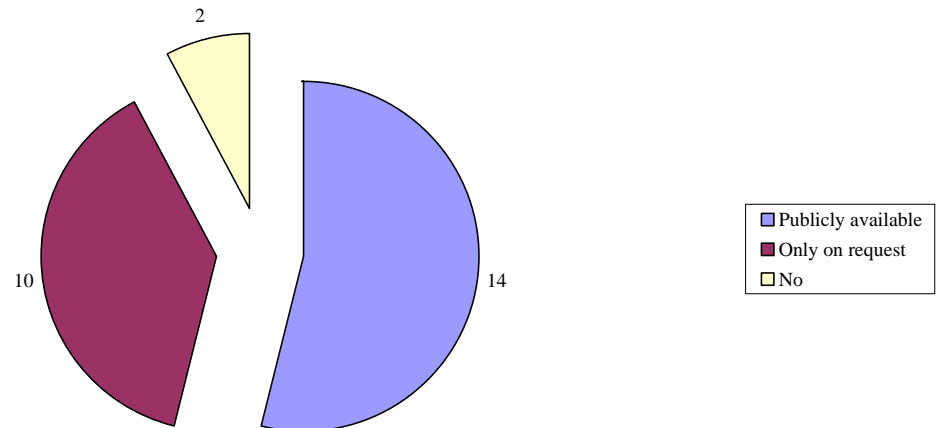


**Additional comments:**

- ◇ The authorities usually require so-called final reports describing the course of the remediation and the remaining concentrations on the site after the site has been remediated. If the remediation objectives sustained in the approval have not been achieved the authority can then pose additional requirements like follow up measurements. (Finland)
- ◇ Our soil decree states that a soil remediation must be supervised by an acknowledged soil expert; he must send intermediate and final reports to the OVAM. If the (intermediate) remediation results do not cope with what has been foreseen in the remediation project, OVAM can demand that the remediation works are adapted, that the remediation project is changes or that a new project is designed. (Flanders, Belgium)
- ◇ Administration follows up the individual cases, records are kept in national contaminated soil register. (Luxembourg)
- ◇ Decisions about seriousness and urgency, about approval of the remediation plan, about the report about the remediation and if contamination remains about the aftercare plan. (the Netherlands)
- ◇ Following a cleanup, there is an obligation for the responsible person to sample the bottom and sides of the excavation to demonstrate that the cleanup generic criteria has been reached. Looking at those data, an independent expert must testify that the wished level of cleanup has been reached. (Quebec, Canada)
- ◇ Not at a national level, but every region has established a system for following up remediation objectives. (Spain)
- ◇ The administration is operating, or rather will operate soon a complex database system which will be able to follow the implementation of the remediation objectives. The database will consist of the data of decrees concerning remediation, and the mail spatial and technical data of the contaminated sites. (Hungary)

- ◇ In the Federal Superfund program, when contamination or waste is left on site such that there must be restrictions on the future use of that site, there is a requirement to revisit the protectiveness of the site at least once every five years. (US)
- ◇ Sites being officially registered as “contaminated sites” can be officially qualified as “remediated” and are also labelled as such in the official register. These procedures require that remediation measures were implemented and that public authorities carry out an assessment of these measures. (Austria)

**Question 5 - Is existing information on contamination available for the public of your country?**

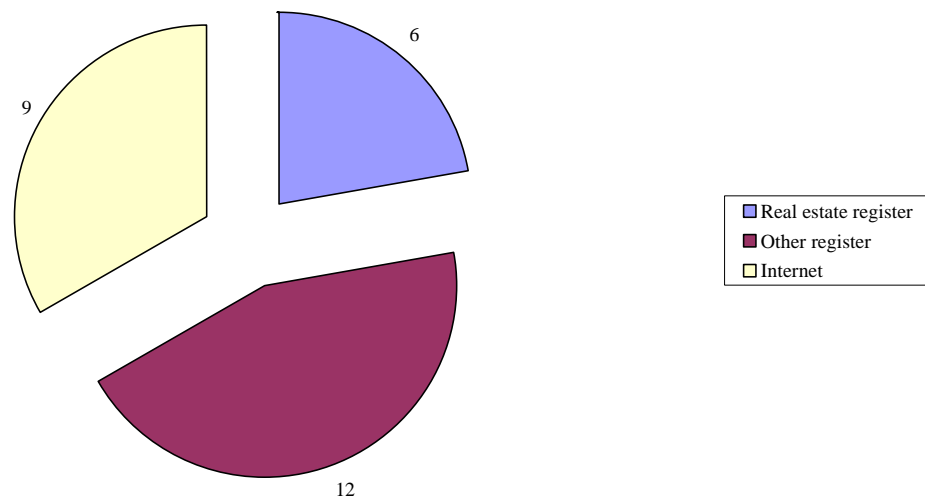


**Additional comments:**

- ◇ There is no formal requirement to make the information on contaminated land accessible to the public – however, public authorities are obliged to release information to the public which they hold on their files (subject to specified exemptions). (Ireland)
- ◇ No, it is not publicly available. (China)
- ◇ There is three levels of public registration: 1) On the land title. 2) On a municipal list. 3) On the Ministry Internet site. Register 1 and 2 only concern some specific sites targeted by the Environment Quality Law. Register 3 targets any site for which the Ministry has data. (Quebec, Canada)
- ◇ If information is not available publicly (through public records files located near contaminated properties), the Freedom of Information Act process will often permit citizens to request and then receive information that the Federal government maintains on contaminated properties. (US)



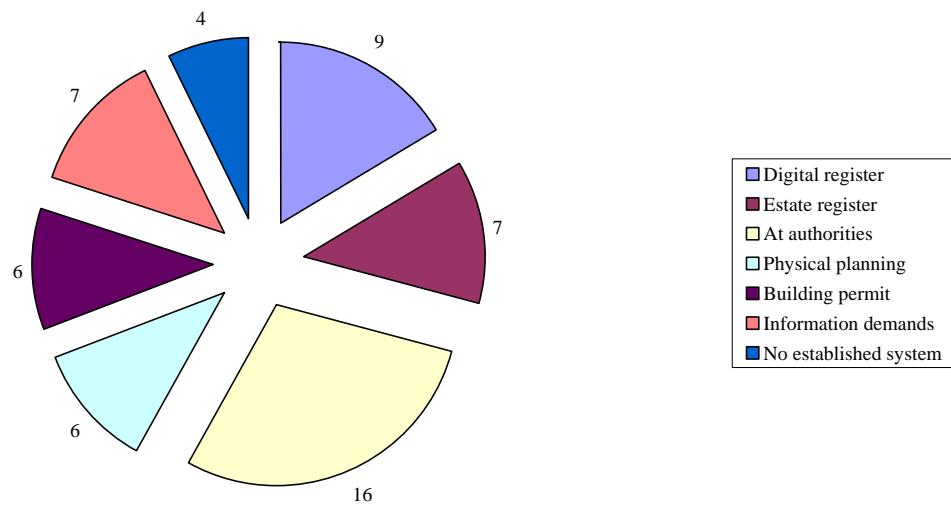
**Question 5 - If publicly available, how?**



**Additional comments:**

- ◇ Contaminated sites are recorded in real estate registers (cadastre). Regions hold (often quite incomplete) registers of contaminated sites. In few regions data are available on the Internet. APAT collects data from regions (number of contaminated sites, progress in management) in a public national inventory. (Italy)
- ◇ Today the country has no established system for keeping information on contamination for future knowledge and use. (China, Macedonia, South Africa)
- ◇ Internet, see [www.bodemloket.nl](http://www.bodemloket.nl) (the Netherlands)

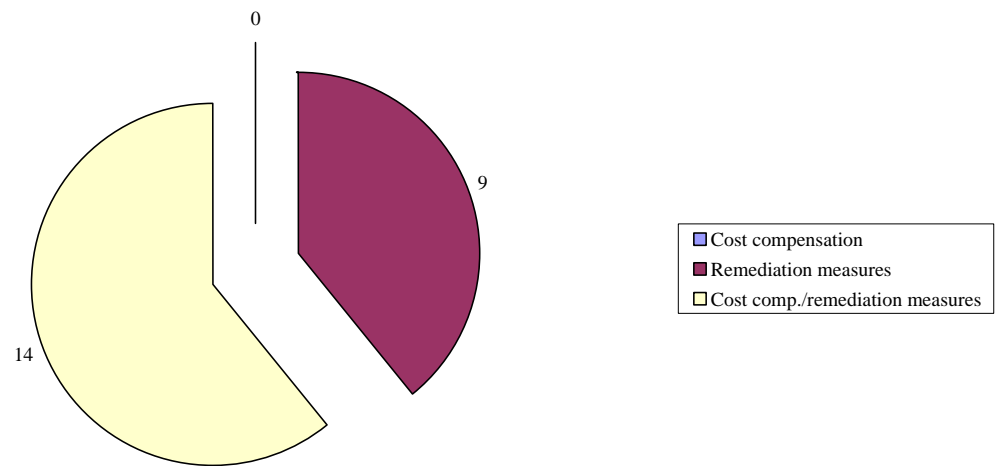
**Question 6 - How does your country guarantee information on contamination is maintained for the future and used in a relevant way?**



**Additional comments:**

- ◇ Moreover, there is an Internet database (<http://basias.brgm.fr>) which collects information about potentially polluted sites, it means which hosted potentially polluting activities. (France)
- ◇ All cantons maintain a register of the polluted sites with all relevant information on the pollution, impacts that have already been ascertained and endangered environmental areas. The authorities shall supplement the register with information on the need for monitoring and remediation, the objectives and urgency of remediation and the measures taken or ordered by them for the protection of the environment. (Switzerland)

**Question 7 - How can someone responsible for contamination take his/her responsibility in your country?**



**Additional comments:**

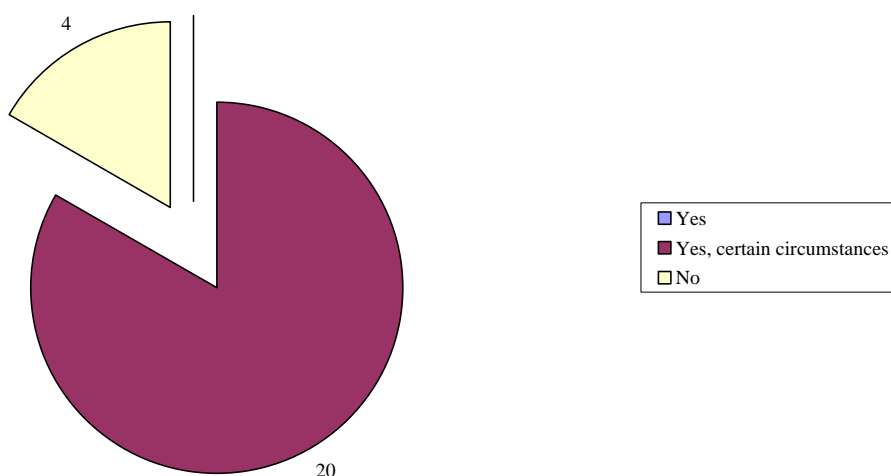
- ◇ If the owner is not able to bear the costs of remediation, the costs can be put as a mortgage on the land. (Germany)

**Question 8 – How is your country assuring remediation costs are not unreasonably high? Please describe the course of action:**

- ◇ Increased reliance on site-based risk assessment to identify cost-effective approaches and shift to in situ retention from ‘dig and dump’ approach. (Australia)
- ◇ Case by case. (Basque, Spain)
- ◇ The assessing of contamination and remediation needs is based on site-specific assessment and not to limit values. This allows many solutions for the remediation. (Finland)
- ◇ The remediation objective is based on BATNEEC: the contamination has to be removed if feasible following BATNEEC, otherwise remedial measures have to ensure that the risks are reduced. The soil remediation expert working for the land owner/user works out the remediation plan, whereby this BATNEEC evaluation is the central point. If we don’t accept the presumptions or conclusions made by the expert, we start a discussion with them. For SME-sectors where the soil remediation cost may be disproportionate to the financial means in the sector, we can start up sectoral funds. We have created a fund for co-financing the remediation of service stations (which is fully operational and has been working for some years now) and we are creating a fund for co-financing of exploratory soil investigations and soil remediations for the dry-cleaning sector. (Flanders, Belgium)
- ◇ Among others we ask project manager to document remediation options and adopt a cost/benefit analyses to determine which solution fits the best to carry out remediation which must restore compatibility between state of environment and use. If costs are far beyond benefits, then it means that use should be less sensitive. (France)
- ◇ The move to “risk-based” assessment of contaminated sites means that monies are spent prudently on the sites which genuinely need remediation and these works are then designed to address only those risks which are relevant. In addition, there is no scheme of financial assistance to cover the full cost of remediation works – accordingly, site owners would have no incentive in allowing the costs of remediation works to rise unreasonably as they would be forced to contribute towards their payment. (Ireland)
- ◇ A cost-benefit analyses of different remedial solutions is required. At active sites temporary safety actions are allowed in order not to stop productive activities. Permanent safety actions are allowed (when clean-up costs are too high), often together with use restrictions of the site, in order to contain contamination on the site. (Italy)
- ◇ Ministerial ordinance admits relatively low cost measures such as capping. (Japan)
- ◇ The first, we will set down the plan of remediation by the company/institute/university. The second, we will demonstrate the plan and the cost by committee of experts. The third, we will actualize the remediation plan. We will supervise the process from the beginning to the end. (China)
- ◇ No special actions/relief available. (Latvia)
- ◇ No used. (Lithuania)
- ◇ When remediation costs are excessive, risk based land management is applied. (Luxembourg)
- ◇ In the agreement between the company and the state is included an article where are describe the obligations of the partners in the agreement. (Macedonia)
- ◇ In the remediation plan are alternatives, expensive and less expensive solutions. (the Netherlands)

- ◇ By adopting use based generic remediation criteria, the government allows the responsible person to tailor its level of remediation in relation with the future use of the site. If someone does not wish to spend too much on the cleanup he may opt for a less noble use. Engineered measures or site specific remediation criteria are also possible. (Quebec, Canada)
- ◇ Remediation projects have to be assessed by the authorities. They have to make sure that the minimal standards fixed in the Environmental Protection Act and its Ordinances will be met. Polluters can appeal against measures they assess as being above the legally prescribed standards. The federal office for the environment regularly publishes guidelines with detailed information on how to reach these minimal standards. (Switzerland)
- ◇ There is no a system for analyses of the true cost (and extent) of remediation. Official estimates of the extent and cost of remediation are often understated for a variety of reason. (Serbia)
- ◇ According to the polluter-pays principle the person held liable for soil contamination has to pay remediation costs, whichever the amount. Nevertheless if remediation costs are extremely high he can ask for a moratory to the competent Environmental Authority in order to prolong the remediation schedule. (Spain)
- ◇ South Africa does not prescribe remediation costs or how remediation ought to take place. The department merely ensures that remediation is conducted to the department's satisfaction. (South Africa)
- ◇ Polluter: The decision has to be taken case by case, no fixed limit. Site owner: The (unguilty) site owner has to pay up to a maximum of the worth of the remediated site. (Germany)
- ◇ During the official process the responsible party needs to prove the cost efficiency by financial calculations to the authority. The calculation of the cost efficiency is included in the report of site investigation. (Hungary)
- ◇ The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) as well as other Federal and state laws requires consideration of cost of cleanup in the balancing of factors weighed by decision makers. In many cases, it is not cost alone, however, but cost effectiveness that is weighed since the least expensive alternatives may also be the least reliable over the long term in terms of human health or environmental protection. It is also important to note that the highest cost technologies are not always the most protective or reliable (however, some expensive technologies may be very effective in reducing the toxicity, mobility, or volume of contaminated media). (US)
- ◇ BATNEEC principles apply through the setting of the financial operational remediation objectives and through the selection of the remediation technique. (Wallonia, Belgium)
- ◇ In the case of funded remediation projects the funding organisations checks whether or not the proposed remediation measures are adequate to reach the remediation target and costs are reasonable. (Austria)

**Question 9 - Are governmental subsidies available for remediation measures?**



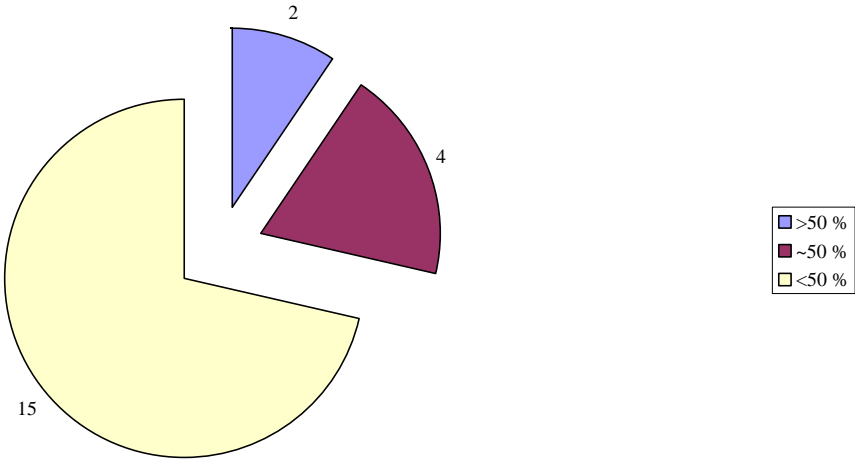
**Additional comments:**

Yes, under certain circumstances, namely:

- ◇ It only covers diagnosis; it is available at ADEME and at the Bassin Water agencies. (France)
- ◇ In case remediation is of prominent public interest because of health and occupational reasons. (Italy)
- ◇ Japanese government subsidizes into funds. The funds can subsidize the land owner who has no cause of contamination. (Japan)
- ◇ Only related to historically polluted sites and former military territories. (Latvia)
- ◇ Cases of historical pollution (Lithuania)
- ◇ Only if environmental damage has occurred and if company responsible for the pollution is bankrupt or if the polluter does not exist any more. (Luxembourg)
- ◇ Agreement between the company and the state about the obligations of the partners in the agreement. (Macedonia)
- ◇ For industrial sites, co-financing, de-minimis aid (the Netherlands)
- ◇ Between 1998-2005, we had a program (Revi-Sols) aimed at subsidizing the cleanup and reuse of urban contaminated sites. Anyone having a concrete reuse projects for such a site could get as much as 70 % of the total assessment and cleanup cost repaid by the government if the excavated contaminated soil was treated (50 % if it was only dig and dump). Since September 27<sup>th</sup> 2007, a new program called ClimatSol has been put in place (see <http://www.mddep.gouv.qc.ca/sol/terrains/climatsol/index.htm>). According to this program municipalities and developers may get as much as 50 % of their assessment and cleanup cost paid by the government if they reused a contaminated land. To be accepted, the projects must integrate green technologies to the proposed buildings and help to create more wooden or <<green>> surfaces. The program will last three years (2007-2010) and has a 50 millions \$ budget. (Quebec, Canada)

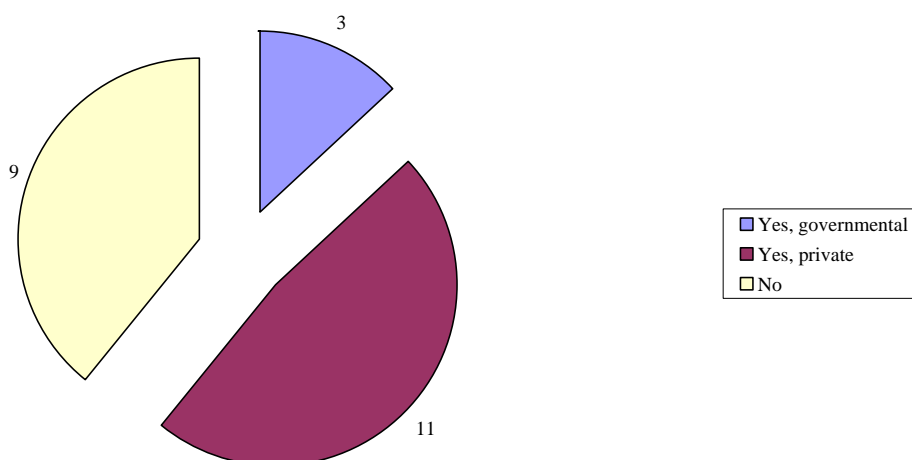
- ◇ 1) The public authority has to bear the costs of polluters, that can't be determined or are insolvent. The national government bears 40 % of these costs. 2) The national government bears 40 % of the costs for the remediation of old municipal landfill sites and of the costs for the remediation of shooting ranges. 3) The national government pays a standard amount to the cantons for every entry in their register of the polluted sites (300 €). 4) The public authority pays all the investigation costs on sites that turn out not to be polluted. (Switzerland)
- ◇ Specific environmental damage, significant health risks. (Serbia)
- ◇ Federal Superfund dollars may be available to address sites that warrant immediate response action or that are listed on the National Priorities List (and for which no responsible parties have been identified). Similar programs exist at the state level. Money is also available to local entities under the Brownfields program that is then used to assess the potential contamination at a site. Other types of Federal and state assistance (e.g., direct cleanup support, contingency funds, grants, low interest loans, tax breaks, site-specific special set-aside accounts, etc.) exist that are specific to a given site, site type, geographic area, or problem type. (US)
- ◇ For 'historical pollution' (before 1. July 1989) and for the most serious cases (included in "Contaminated Sites Register" after site specific risk assessment). (Austria)

**Question 10 - To what extent are costs for remediation actions in the country covered by governmental means?**





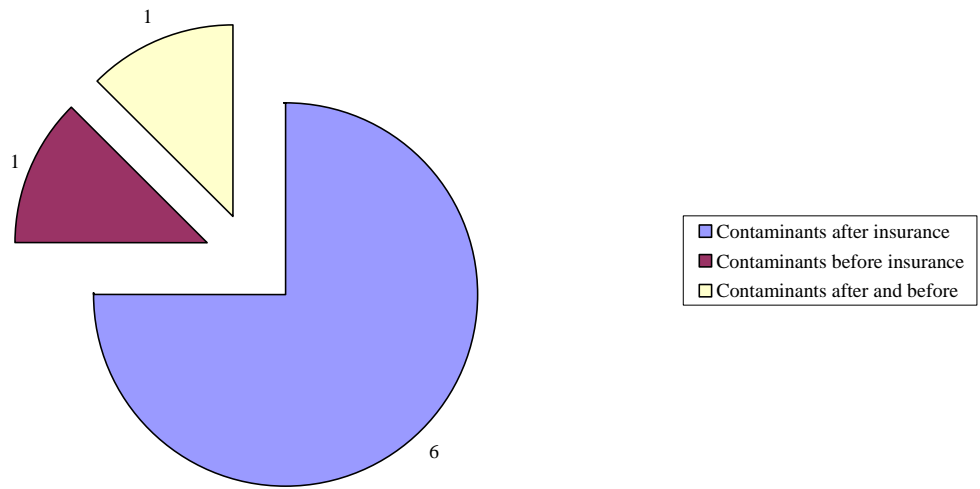
**Question 11 - Are insurances, or corresponding, available for polluters to finance remediation measures?**



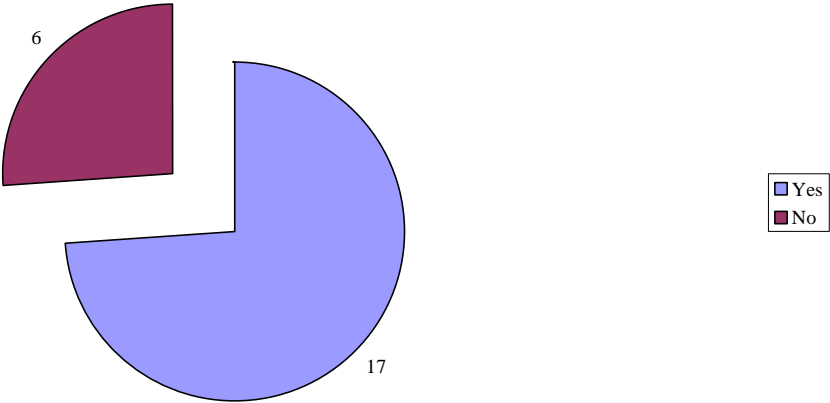
**Additional comments:**

- ◇ Voluntary environmental damage insurance has not been very popular because of the high costs. (Finland)
- ◇ Yes, governmental. Valid for contaminants originating both before and after signing the insurance. Depends on agreements. (Macedonia)
- ◇ Yes, governmental and private. The insurance covers unforeseen damages, but the financial security covers the expected damages. (Hungary)

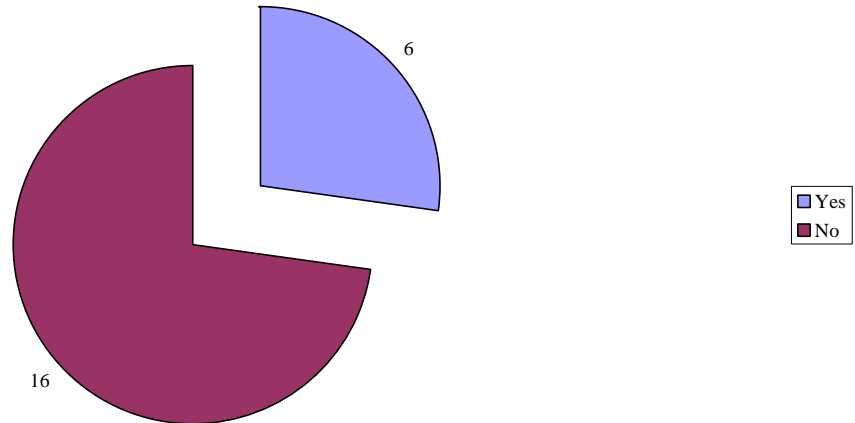
Question 11 - What are the insurances covering?



**Question 12 - Is there a possibility to demand potentially polluting activities to establish financial security for possible future contamination, for example in connection to permit applications?**



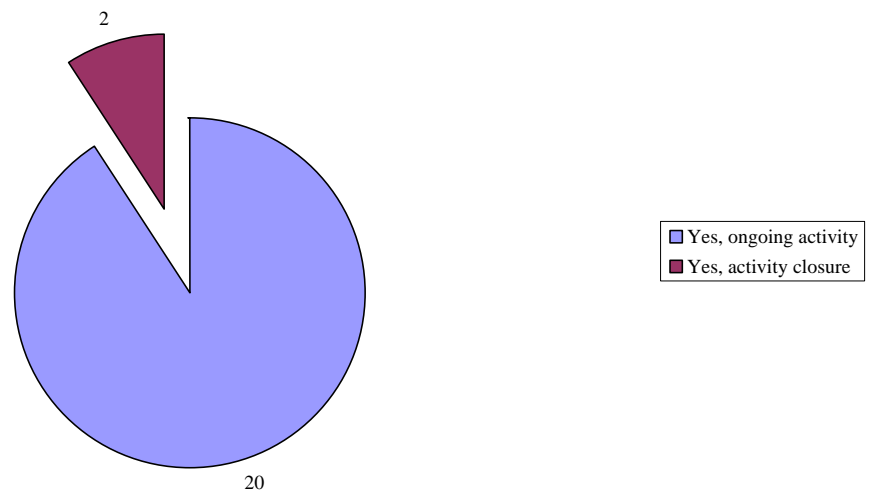
**Question 13 - Are financial securities used in connection to real estate transactions to assure remediation measures on contamination?**



**Additional comments:**

- ◇ Yes. They are a very powerful weapon to really force that remediation is carried out: if the party who has to carry out the remediation (or the party who has signed a contract that they take over the remediation duty), omits to carry out the remediation works, we send them a reminder; if they don't react even then, we take the financial security and remediate ourselves. Mostly the warning that we will take the financial security, is a very good reason for a company to start the remediation. On the other hand, a financial security costs money, so companies mostly are also eager to limit the time that this financial security has to be delivered. (Flanders, Belgium)
- ◇ Yes. Financial security (bank guarantee) is always required for starting a remediation process. (Italy)

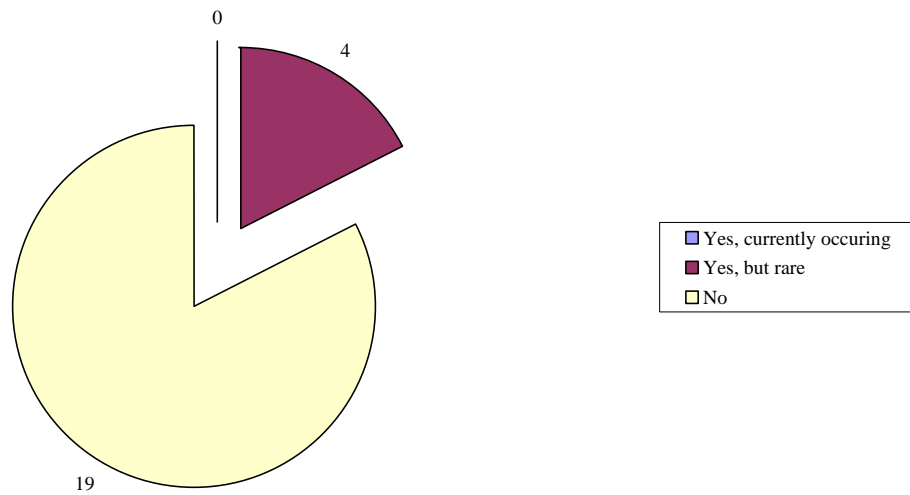
**Question 14 - Can actual authority request remediation measures/investigations at any stage (in time)?**



**Additional comments:**

- ◇ Yes, but excluding in connection to activity closure. Else, when significant environmental or human health risk appears. (Luxembourg)

**Question 15 - Is there a possibility for the polluter to receive a governmental loan to finance remediation measures?**



**Additional comments:**

- ◇ No. The administration may take care of the remediation, but then costs must be refunded by the polluter or landowner. (Italy)
- ◇ No. But the polluter can lend money from the bank which the government owns. (Japan)
- ◇ Theoretically it is possible, but we do not have such practice. Mostly depends on business interests and availability to ensure loan refunding. (Latvia)
- ◇ Yes, but it is rare. Use EC fund to remediate historical sites. (Lithuania)
- ◇ Yes, but it is rare. (Macedonia, Serbia)
- ◇ Yes, but it is rare. The polluter should return this loan to the Environmental Authorities in the accorded terms. (Spain)
- ◇ No. Revolving loans are available for local governments and nonprofits (but not polluters.) (US)