Theme: A: Policies on Soil/water systems

IS RISK BASED LAND MANAGEMENT REALLY SUSTAINABLE?

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1. Introduction

As we see all over Europe specific legislation about soil remediation appearing, one must admit that almost all of them are driven by a common philosophy: Risk Based Land Management. That philosophy means that one recognizes that we all have a (mostly) historical problem with contaminated soil and that we will 'manage' it as well as possible, without forcing current problem owners to pay unbearable amounts of money to clean-up the soil. That concept is translated technically as 'Risk Based Land Management' as it considers the soil must be cleaned just enough in order to control and limit the risks it poses to man.

Is that philosophy in line with the principles of Sustainable Development? In order to answer that question,

Once we question it, it doesn't appear so clearly that Risk Based Land Management is 'the' sustainable solution for our contaminated land policies. Have we really looked into it when drafting those legislations? Probably not, the alternative philosophy, a.k.a. multi-functionnality had received the qualification of being 'economically unbearable', as one referred to the Dutch policies in the early eighties.

We're twenty years later and things have changed. It's time to review those assumptions, and maybe that multifunctional land management is no longer deemed 'economically unbearable', or that we should at least acknowledge that our R&D efforts need to be focused on making it economically bearable instead of giving up on it and, actually, transfer that burden to the next generation.

2. Sustainable development

Sustainable development is a concept generated at the Rio conference in 1992, based on the Brundtland report (1987) and that has been widely adopted as the major principle for environmental policies in the Western world. It is widely accepted as «development that meets the needs of the present without compromising the ability of future generations to meet their own needs.»

According to the Swiss Federal Council's 2002 sustainable development strategy, five criteria a defined to assess sustainability with regard to the environmental responsibility:

- "*Areas of natural importance and biodiversity are to be preserved*
- *The consumption of renewable resources (e.g. raw materials that can be recultivated, water) is to be kept below the rate of regeneration or natural replenishment*
- *The consumption of non-renewable resources (e.g. fossil fuels, non-renewable raw materials) is to be kept below the rate of potential increase of renewable resources*
- *Any impact of emissions and toxic substances on the natural environment (water, soil, air, climate) and human health is to be reduced to a safe level*
- *The impact of environmental disasters is to be reduced and environmental risks are only to be accepted to the extent that, even in a worst-case scenario, no permanent damage outlasting one generation could be caused*"

This outlines the main principles to be applied in order to assess environmental responsibility with regard to sustainable development.

3. Does Risk based Land Management really qualify as sustainable? The environmental axis

When trying to apply those criteria directly to the policy choice, there is no clear answer. How can soil and/or land be considered in that respect? We propose to work by elimination:

It can't be considered as areas of natural importance and biodiversity, unless in very specific cases. Cleaning-up contaminated land should, consequently, won't fall in that category as a general rule. It should also be discarded as natural disaster.

Consequently, there are 3 options to consider contaminated soil:

- A renewable resource
- A non-renewable resource
- A recipient of emissions

To our opinion, soil cannot be considered as a renewable resource, since it is limited in quantity on the surface of our planet and also since it isn't part of a natural cycle (such as water for instance).
We don't believe soil should be considered as a recipient of emissions, such as the atmosphere. Soil can be seen as a recipient of emissions, but we believe soil is much more than that. As a recipient, one should reduce emissions of toxic materials in it to a minimum. For soil, the minimum is zero. It is no longer acceptable today to have toxic elements released into the soil, as simple protective measures can be applied to avoid it. Therefore, new soil pollutions can't be accepted under any circumstances.
Historically contaminated soil should, consequently, be considered as a non-renewable resource. There is no real renewable production of soil, and therefore a sustainable policy for dealing with historically contaminated land should be such that no soil is 'consumed' in excess of its renewal rate, which is virtually zero. A better solution would undoubtfully be to recycle and regenerate new land from former contaminated sites.

3.1. The current consensus

Risk Based Land Management is the current consensus within the European legislators, mainly because of its cost implications. Multi-functional remediation is seen, without further detailed questioning, as prohibitive from a total costing standpoint. However, by assuming that it will always be too expensive to clean-up soil and bring its quality back to its original (natural) situation, one preaches for self-fulfilling prophecies.

By taking such a stance, all efforts in Research and Development for new technologies which could clean-up to natural levels at a reasonable cost are made useless. Therefore, R&D money is invested in Risk Assessment models, which don't help solving the problem on the field, but are a way of explaining why we should transfer that problem to the next generation. Risk Assessment is the new way to buy ourselves a good conscience. It doesn't help, however, the real problem that poses contaminated soil in our regions.

3.2. Why is Multi-functional remediation more sustainable?

Multi-functional remediation, i.e. the philosophy consisting in cleaning-up contaminated soils back to its original, i.e. natural state, should be reconsidered with more nuances than what is was in the last 5 to 10 years.

4. Conclusion

Multi Functional Land Management is a viable and sustainable philosophy for contaminated soil policies, and this for several reasons.

4.1. Sustainability

By remediating land back to its original (natural), one doesn't transfer any liability to the future generation. Limiting land use as a way of remediation is detrimental to the potential land development for the future.

While costs are a limitation to the strict application of Multi Functional Land Management, it cannot lead to abandoning the principle.

Risk Based Land Management is the best conservation measure only when clean-up costs are unbearable if it had to be cleaned down to natural (original) levels. By doing so, one manages the risks involved and the liability is transferred to the next generation which is expected to be able to deal with it.

4.2. Research & Development

Multi Functional Land Management is the right message to send to R&D institutions and remediation companies. One will encourage the development of technologies, which will be able to substantially reduce the cost of cleaning down to natural levels.

Currently, there is no such incentive as problem owners the no or nearly no added value of total remediation compared to "risk assessing" it.

4.3. Economic Development - Brownfields

Every serious investor will consider residual contamination as a potential liability, even if it is "risk assessed" out. In some cases, that risk will lead investors to choose for a Greenfield site rather than a more risky brownfield. Such a choice is obviously detrimental to our sustainable development goals.

4.4. Polluter Pays principle

Risk Based Land Management is in contradiction with the "polluter pays" principle, which is not the case for Multi Functional Land Management.

References:

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