MANAGEMENT SUMMARY

Following the Megatrends study,[1] the Flanders Environment Report (MIRA) of the Flemish Environment Agency (VMM) thought it would be useful to investigate the need for a full-fledged horizon scanning system. A horizon scanning system makes it possible to identify potential future developments and to assess their impact on the environment in time. It is a tool intended to allow policy makers to better prepare for potential future developments and to provide them with support in the development of policy that is sufficiently robust in the face of the uncertain future.

Horizon scanning can be described as *a systematic examination of new, unexpected events and existing issues, trends and weak signals. With horizon scanning, one aims to look into the future across various time scales, one intends to proceed on an interdisciplinary and interdepartmental basis, and one chooses to look further ahead than usual, to challenge the boundaries of common thought.*[2]

Prior to setting up any horizon scanning activities, MIRA wanted to know (i) what comparable and/or useful horizon scanning initiatives for (environmental) policy exist in Belgium and abroad, (ii) how these initiatives are set up in terms of methodologies, organisation, substantive approach, products and other outcomes, and (iii) for what purpose and how the outcomes / results of these initiatives are used in terms of policy support. These three questions guided the study.

During the study, a search was undertaken to identify past initiatives (*research question 1*), literature and available documents on the various initiatives were studied to gain an insight into methods used, forms of organisation, etc. (*research question 2*) and a number of initiatives (3 from the Netherlands, 4 from the UK) were examined in detail (in-depth interviews with stakeholders and policy makers) to detail the results from the literature study and obtain information on the impact on policy (*research question 3*).

Answers to the research questions

Identification of initiatives

Horizon scanning was originally used for military purposes (national security). Many initiatives are also to be found in the health care sector and the pharmaceutical industry. The search for existing initiatives in Belgium and abroad focused specifically on horizon scanning techniques within the (environmental) policy context. As part of the inventorying process, initiatives from 11 countries were identified and outlined: initiatives from European countries, but also from the USA, Canada, Singapore and Australia / New Zealand were included. In addition, a number of cross-boundary European projects on future studies / scenario development were identified. Of these last projects, the BLOSSOM project is the most recent and most relevant for the aspect of *impact on and integration with policy* in the present study.

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[1]   VMM. 2014. Megatrends: ingrijpend, maar ook ongrijpbaar? *(Megatrends: far-reaching, but also out of reach?)* Hoe beïnvloeden megatrends het milieu in Vlaanderen *(How do megatrends impact the environment in Flanders?)* 2014, Vlaamse Milieumaatschappij, Aalst (VMM, 2014)

[2]   Own description based, among other things, on definition of (van Rij V. , 2010)

Methodology, organisation, reporting

The literature study on these initiatives showed that the horizon scanning process essentially breaks down into four steps:

–   Identification of potential future developments;

–   Assessment of the information obtained for relevance;

–   Selection of key potential developments; and

–   Reporting of the findings.

Specific literature on methods to be used for horizon scanning, as well as the methods used in the studied initiatives, show that a wide range of methods are available for conducting a horizon scan. Horizon scanners themselves are still searching for the most appropriate (combination of) method(s); using a combination of methods is indicated to cover as broad a range of sources as possible and to obtain results as reliable as possible.

The first step in the horizon scanning process is the *identification of potential future developments.* A literature and document study is often the initial phase of this step. In some cases, alongside scientific literature, documents from such sources as think tanks, horizon scans from e.g. other countries, and study of databases (scientific, commercial, and innovation related databases), the entire Web (including news sites, blogs, new media) is scanned for potential future developments. Expert surveys often supplement the document study. In a number of specific cases, a survey of an (extensive) network of experts (academic, policy experts, but also journalists, citizens) could replace the place of the document study. A condition is that the expert network has a sufficiently broad base.

In various initiatives specific attention was paid to the identification of so-called weak signals[3] (e.g. via workshops where participants were asked about "What if's"[4] or via the scanning of twitter messages, news sites, blogs and the like).

The information obtained is stored / categorised in databases. Frameworks such as STEEP (Social, Technological, Economic, Environmental, Political) or variants are used in most of the examined initiatives to classify and keep track of the potential developments identified. To retain the overview of cross-relationships between potential future developments, some initiatives (notably Horizonscan of 2007 and Horizonscan 2050 in the Netherlands) featured the organisation of creative sessions. The Department for Environment, Food & Rural Affairs (DEFRA) in the UK is currently experimenting with another type of database, namely one where the relationships between the various subjects are established visually (depending on whether the cause or the effect of the potential future development are the same).

In a second and third step, the *relevance of the identified subjects* is determined. This is used as basis for the *selection* of the number of subjects. This selection can (but need not) be undertaken in various successive steps. Various persons can be involved in these steps.

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[3]   Weak signals: Emerging trend that brings risks and/or opportunities and the impact and dynamics of which are as yet very difficult to estimate but which may grow in importance. By definition, it is not known in broader circles and is still contested' (VMM, 2014).

[4]   In the horizon scanning exercise in the Netherlands (Horizon scan PBL – see fiche **Fout! Verwijzingsbron niet gevonden.**), the term "What if's" was used to hear from experts what other situations could occur (unexpected developments) beyond those already identified via scientific literature. In this way, it was attempted to gain a better insight into the potential consequence of an unexpected event.

- Internally, a team of analysts can determine which subjects are relevant. Palomino developed an example set of criteria to be used as the basis for determining which subjects are 'relevant', 'less relevant' or 'not relevant'. This is important when several persons are working together on the analysis of the information.

- This is often followed by an expert survey for the purpose of ranking the subjects and selecting the most relevant ones. Questions posed in this context aim to assess the likelihood of occurrence of the potential developments, the period in which the developments are expected to occur, and the impact on the area for which the horizon scan is carried out (e.g. environment). This expert survey can take the form of a written survey (one or more rounds with interim feedback on the results - Delphi) or of direct one-to-one surveys or workshops.

Based on the information obtained, the number of potential future developments to be further considered in the horizon scanning process is narrowed down. This is useful, among other things, for the *reporting of the results* and the associated communication. This is the fourth step in the horizon scanning process. Reporting of the results varies from very short texts on a web blog or newsletters to scientific articles and extensive reports. The study revealed the following reporting recommendations:

- A selection of a small number of very good insights is the most valuable;
- A tiered reporting structure is a good way of providing sufficient information for each target group;
- The results must be attractively represented for all target groups.

The lead time of the entire horizon scanning process (from identification of potential future developments, analysis and assessment of the information obtained and selection and reporting of the information) depends primarily on the chosen method and the experience of the horizon scanners with horizon scanning. The majority of analysed initiatives specified that a complete horizon scanning process can be completed in about one year. In reality, however, many of the initiatives were delayed. For the literature and document study in the first step, a lead time of 4 to 5 months should be foreseen. A purely network-based approach can be completed in a few months, provided a fully developed network is available. If the network remains to be built up, the lead time needs to be extended accordingly.

Also the cost of (having carried out) a horizon scan varies according to the methods used, the duration of the 'scanning', whether or not scanning is possible not only in breadth, but also in depth, etc. For the analysed initiatives (case study research) the cost of a horizontal scan varied between € 100,000 and € 500,000.

Impact on and integration with the policy-making process

The initiatives included in the study were usually part of a broader policy process: future studies ('foresight'), preparation of (policy) strategies, or identification of the research priorities to be financed. Horizon scanning was included in the process because one wanted to make (more) allowance for less easily predictable potential future developments. The question as to whether the results of the horizon scanning process were also effectively integrated into the further policy process, was addressed in the in-depth interviews of the case study research. The answers revealed that the impact on policy is hardly, if ever, monitored. The intention is there, but the monitoring is still lacking. The impact can often not be measured directly. The results are assumed to have an indirect effect on policy.

Some critical success factors for impact on policy are provided by experiences in several countries as brought together in the BLOSSOM project:

- There is a demand from policy makers and the initiative is supported by the political level;

- There is institutional integration (e.g. government body dealing with future studies or consultation between various departments dealing with future studies);

- Participation by a wide range of government departments;

- Good communication on the results of the studies;

- Timeline of the studies must be sufficiently relevant (e.g. additionally including short-term developments).

Recommendations for horizon scanning in Flanders

Based on the findings from the literature and case study research, recommendations were formulated for starting up horizon scanning in an (environmental) policy context in Flanders. In general, it is our opinion that starting up a horizon scanning process is useful for identifying potential future developments in order to be better prepared for what may come our way in the future and may be determining for the environment and environmental policy. However, a condition is that there is a mandate for launching the horizon scanning initiative (political integration) and that the process is conducted sufficiently thoroughly, so that the results will also be accepted.

In Flanders there is as yet no systematic investigation into future developments within the policy areas. In the preparation of policy plans, frequent use is made of an inventory of the current situation and the available trends.

As part of the Megatrends study[5], carried out at the initiative of MIRA of the Flemish Environment Agency, within the Environment, Nature and Energy (ENE) policy area, ten trend reports were analysed. From this information, six megatrends with an impact on the environment and also a number of weak signals were identified. For a complete horizon scan to be carried out, these sources need to be expanded to include scientific literature, databases, the Web, and/or experts. We recommend a different approach (scenarios), depending on the resources that are (or can be made) available for a horizon scanning exercise and on the interest of the Department of Environment, Nature and Energy (ENE) and the Research Department of the Flemish Government (RFG) within the Chancellery and Public Governance policy area in setting up a cross-policy area horizon scanning initiative.

In *scenario A*, we assume that the resources are limited and the horizon scan is carried out within the ENE policy area (ENE Dept, Policy Preparation and Assessment Unit / Environmental Reporting Unit (MIRA) of the Flemish Environment Agency). With such limited resources, a network-based approach is recommended. Efforts are made to put together a broad and varied network of experts and to go through the horizon scanning process from identification of potential future developments to reporting of the most relevant future developments, by organising a number of survey rounds (written, 1-to-1, and workshops).

In *scenario B*, as in scenario A, the initiative is taken by the ENE policy area. In this scenario, it is assumed that more resources are available, so that a horizon scanning team can be put together made up of comprehensively trained analysts who will carry out a thorough literature and document study prior to the network-based approach.

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[5] VMM (2014) Megatrends: Far-reaching, but also out of reach? How do megatrends influence the environment in Flanders. MIRA Outlook Report 2014, Flemish Environment Agency (VMM), www.environmentflanders.be.

In *scenario C*, it is assumed that the initiative is taken across multiple policy areas. Especially the first step in the process (identification of potential future developments) is centralised. The assessment of the identified developments in relation to their relevance for the environment, is a step that requires strong involvement of the ENE policy area.

The frequency of the scan depends on the available resources. If limited resources are available, it is advisable to carry out a horizon scan at least once per policy cycle (to be used as input for preparation of the new environmental policy plan). In the case of continuous scanning, the benefit of potential future developments being identified sooner must be weighed against the associated cost. In that case, the frequency with which the other process steps (assessment, selection, communication on results) will be carried out, must also be determined. Typically, they are performed once a year.

Important recommendations for each of the above scenarios are the presence of a mandate from the ENE policy council (and reporting to the council) to increase the chance of impact on policy and the involvement of all policy areas in the horizon scan (to keep the scan as broad as possible from the outset).