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Evaluation of (the investment of the Flemish government in) the Centre for Research & Development Monitoring (ECOOM)

Executive Summary



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Executive Summary

The context of the evaluation

The Flemish government invests in the development and exploitation of information and data in order to support science and innovation policy. An important part of this knowledge development is the keeping up with and application of R&D indicators and bibliometric data, as well as the provision of specific expertise to analyse these data and to conduct bibliometric analyses. In order to fill in most of that need, the Flemish government has invested in the support (since 2009) of the Centre for Research and Development Monitoring (ECOOM). ECOOM's main task is to develop and maintain a performing system of Research, Development and Innovation indicators in order to provide the Flemish government with up to date and relevant statistical data pertaining to the R&D and Innovation performance of the Flemish region. To realise this mission ECOOM also develops a portfolio of research activities. Next to that, ECOOM has to provide the (technical) management of the Flemish Academic Bibliographic Database for the Social Sciences and Humanities (VABB-SHW), which was initiated in 2008.

ECOOM started in 2009¹ (after its recognition by the Flemish Government), but before 2009 (since 2007) the assignments and tasks of ECOOM were located at the Policy Research Centre R&D Indicators (SOOI), one of the second generation policy research centres that received financial support within the respective programme (for the support of policy relevant research, i.e. the Policy Research Centre Programme). The Policy Research Centre R&D Indicators was legally discontinued when ECOOM was formally recognized. ECOOM took over the tasks from SOOI, which ceased to function as a policy research centre.

The current covenant 2009-2013 between the Flemish government and the five university associations regarding ECOOM stipulates that ECOOM has to be evaluated in the second half of 2012.

Meanwhile, the second-generation policy research centres and the policy research centre programme were evaluated in 2011. In this evaluation it was agreed that the evaluation of SOOI (with respect to the period of its existence, i.e. 2007-2008) would be included in the evaluation of ECOOM, the successor of this specific policy research centre.

Through a public procurement procedure, the department of Economy, Science and Innovation (EWI) of the Flemish government has assigned Technopolis to carry out an evaluation of ECOOM and VABB-SHW². Due to, on the one hand the connection existing between ECOOM and VABB-SHW (as ECOOM Antwerp provides technical support with respect to the VABB-SHW), and on the other hand the period wherein the respective evaluations have to take place, the department of EWI has chosen to combine both evaluations in one (evaluation) assignment. The terms of reference for the evaluation of both ECOOM and VABB-SHW specifically distinguish between both evaluations, which are independent, and thus the terms of reference include a number of evaluation questions, which apply specifically to ECOOM. These evaluation questions relate, amongst others, to the effectiveness (of ECOOM), but also to the scientific excellence of ECOOM, the degree to which ECOOM supports the government and the degree of policy relevance, the management and (internal) organisation of ECOOM and the research and staff policy.

The present evaluation discusses these evaluation questions and relates to the period since 2007 (and hence also takes SOOI into consideration).

This report includes the evaluation of (the investment of the Flemish government in) ECOOM and the results of the two years of the Policy Research Centre R&D Indicators (SOOI).

¹ The Centre for Research and Development Monitoring (ECOOM) derives its legal basis from the Education Decree XVIII of July 4, 2008, in which the Flemish Government was authorised to recognise of the research centre as founded by the united university associations.

² Assignment called 'Specific assignment in the framework of the evaluation of (the investment of the Flemish government in) ECOOM and (in) VABB-SHW' – terms of reference with number EWI-2012-10

Desk research, interviews and an international comparison were used for the preparation of the final evaluation report. On the basis of the above-mentioned methods, we prepared a synthesis report in order to support the evaluation of ECOOM by a panel of international experts. This panel of international experts conducted a site visit in November 2012 during which they met and talked to several staff members of ECOOM and other stakeholders involved. Based on their site visit, the panel wrote its own report, the results of which have been incorporated in the present final report.

The assignment of ECOOM

In the covenant 2009-2013 between the Flemish government and the five university associations regarding ECOOM, ECOOM's assignment is described as follows:

1. The development, update and follow-up of a Research and Development monitor, which includes necessary and useful and quantitative parameters in the framework of decree-related and temporary funding mechanisms of the science and innovation policy and of the specific research-related operational subsidies for higher education institutions.
2. The co-ordination of the publication of a biannual Research and Development Indicator Book which includes an overview of the Flemish research and innovation capacity in both an European and international context.
3. Conducting specific assignments requested by the Flemish Government.

In order to fulfil its assignment, ECOOM shall develop and maintain an effective system of R&D and innovation indicators, which should provide the Flemish government with up to date and relevant statistical data with respect to the Flemish region and the benchmark regions that are relevant for Flanders. In addition, the ECOOM will develop a portfolio of relevant scientific research activities to support its mission. For this purpose ECOOM:

- Conducts a number of specific long-term assignments and tasks in order to map the Flemish R&D and innovation profile;
- Ensures that the Flemish government disposes of an appropriate data management structure for bibliometric, technometric and innovation data;
- Establishes a pool of qualified staff;
- Builds the required IT infrastructure;
- Conducts "ad hoc" assignments and projects at the Flemish government's request.

The formal organisation of ECOOM is laid down in a co-operation agreement between the five Flemish university associations and their universities: KU Leuven, Ghent University, University of Antwerp, Free University of Brussels and Hasselt University at the start of ECOOM in 2009. As such, ECOOM is a virtual centre with multiple locations.

Achievement of objectives

ECOOM has fulfilled its mission as described in the covenant very well. In a period of four years, the already existing R&D monitoring system has been expanded with a number of important activities. The research expertise in the R&D domain has been expanded further and all participating universities have built up knowledge in this domain. The international position of the researchers affiliated with ECOOM has been strengthened and an increasing number of researchers have successfully augmented their international visibility.

Regarding the **organisation** of ECOOM, we can conclude the following:

- The structure and organisation as established in the covenant and the co-operation agreement work well and resulted in an efficient virtual centre of experts with a clear role for all partners involved. A challenge for the future will be to create added value by linking data sets and research activities of the partners who now mainly operate separately.
- Due to the many formal and informal interactions between ECOOM and the different parties in the Flemish policy landscape, ECOOM is well informed about both policy developments and the needs of Flemish policy.
- ECOOM has implemented a cautious financial policy and has foreseen that in order to be able to cope with increasing costs provisions should be made for the later years of the investments of the Flemish government.

- The Flemish investment in ECOOM covers only a part of the activities and services executed and provided by ECOOM. Researchers and promoters who are not directly financed by the ECOOM budget provide an important part of the output and of the internationally visible research. As such, the Flemish government benefits from a leverage effect induced by the direct ECOOM investment.
- The universities, on the other hand, benefit from the access they gained to the R&D data and IT infrastructure created as a result of ECOOM.
- Regarding the Human Resources the aim to develop ECOOM into a broad research network in which young researchers can finalise a PhD or develop an independent line of research, has not been fully met yet.
- Despite the direct involvement of all universities in the collection and validation of all data used for the BOF³ and IOF⁴ keys, utmost transparency about the realisation of all calculations and weights and the people involved is of the utmost importance in order for all parties to remain convinced of it being a fair system.

The number of **activities** undertaken by the network is impressive and concerns a combination of recurrent activities (such as the Flemish Indicator Book, the calculation of the BOF and IOF keys, the support of VABB-SHW and the development of databases about of research careers), research on and development of indicators and ad hoc assignments for Flemish policy. During the period 2007-2011, it is noteworthy that:

- The share of efforts aimed at the development of new indicators (including research in that domain) is decreasing due to the fact that more time has to be spent on recurrent activities and ad hoc assignments.
- In the period 2007-2011, especially at KU Leuven and UGent an increasing number of work packages have been executed annually, many of which only appear once. In 2011, for instance, almost 40 work packages were executed, more than a fourth of which are smaller than 3 months equivalents. A further increase of the number of small incidental work packages could lead to a fragmentation of activities.

Effects on Flemish policy and scientific achievements

The **effects on Flemish policy** are be considered to be positive:

- Policy makers are very satisfied with the activities and services of ECOOM. The output of ECOOM is very relevant for policy makers in order for them to know how Flanders' position in science, innovation and development is progressing. The Flemish Indicator Book – of which a large part is realised by ECOOM – is the most important reference source for this.
- A direct impact of ECOOM's activities is the support for the output-based allocation of research budgets by means of the BOF and IOF keys. Indirectly this affects the research management activities of the Flemish universities, since data and knowledge generated for this purpose are also used for the management of the internal organisation.
- Further exploitation of the existing data sets, and especially of related research that builds on these data sets to accommodate policy needs, requires that demand-side actors, consider more explicitly the information needs for the medium to long term (and not just ad hoc and in the short term) and how R&D indicators can contribute to these policy needs or policy developments.
- The ECOOM partners should make the possible policy conclusions of existing research, or policy relevance of future research accessible to policy makers by communicating in an accessible format. An example of such a format are the 'policy A4s' currently made when a new article is published.
- Both the policy makers and the ECOOM consortium benefit from ECOOM having sufficient free capacity for taking on new topics and conducting further research on current research themes. Too many ad hoc assignments may endanger this free capacity. Up until now, ECOOM has always taken a service-oriented approach, but in the future it should indicate more clearly when additional assignments do not fit in the work schedule any more, allowing to decrease the work load of the current employees as well.

³ Special Research Funds (BOF is the Dutch abbreviation of "Bijzondere Onderzoeksfondsen")

⁴ Industrial Research Funds (IOF is the Dutch abbreviation of "Industriële Onderzoeksfondsen")

- A better alignment with and integration between R&D indicators and indicators in the domain of economic and geographic aspects of innovation and (high-tech) entrepreneurship would be an enrichment for Flemish policy.
- An ‘insourcing’ of the ECOOM activities at the Flemish government would require an enormous effort in building competences and would endanger the continuity of R&D monitoring. It is improbable that the Flemish government could enlist the specialist knowledge required for this, and the interaction with and the leverage effect of the academic discourse that the current constellation enhances in these research domains, would be lost as well.

Concerning the **scientific achievements** and the comparison made with similar organisations, the following conclusions can be made:

- The scientific achievements of ECOOM can be considered as of world class, in particular in the area of bibliometrics and technometrics. The annual number of scientific articles published by ECOOM researchers in the last years shows a stable pattern. The publications that appear, and in more than half of the cases these are international co-publications, are more often cited than the world average. The total impact factor of the journals in which ECOOM researchers publish, shows a continuous increase and is on average considerably above the world average. KU Leuven is responsible for virtually all scientific ECOOM publications. However, the expert panel noted that in all the domains where the other ECOOM partners publish, the visibility and impact of their research is growing.
- With regard to the European institutes (OST, NIFU and CWTS⁵) we compared ECOOM with in this evaluation, only ECOOM provides statistics that are systematically used for the allocation of financial resources for research and innovation (through the calculation of the BOF and IOF keys). As such, ECOOM plays an important role in national policy processes in the area of science and technology. Where the income of the other institutes partly comes from contract research, ECOOM is solely financed by the Flemish government, which is as such the only customer of ECOOM. The range of indicators developed by ECOOM is broader than those of the other institutes, particularly in the area of human resources.

The draft Multiannual Plan 2014-2018 of ECOOM describes its future plans. The plan is characterised by its focus on continuity of current services and proposes a number of additional work packages. The mission of ECOOM remains aimed at service provision to the Flemish government as described in the original covenant and includes the basic assignments it currently performs. The current recurring and running activities will be continued. The proposed budget presupposes that the same financial resources will be available, but it also proposes an additional annual indexation. The evaluation shows that with the current resources the recurring basic activities could still be performed in the future, provided not too many ad hoc assignments without additional resources are added later on. A future budget based on the current investment level is therefore in no way too ambitious, but also leaves little room for innovation.

Recommendations

Based on the evaluation we recommend the following:

Recommendations to the Flemish government:

1. To ensure the continuity of the high quality of the current R&D monitoring, ECOOM should be able to continue its recurrent and supporting activities in the period 2014-2018, taking the current budget should be taken as a starting point, but taking into account the increasing costs for salaries and possibly data licenses as well (i.e. that the yearly budget should at least be indexed for salary costs).
2. The pressure of an increasing number of ad hoc activities should not mount up to such a degree that it hampers the adequate performance of the basic assignments of ECOOM and squeezes out the capacity for innovative research, the latter conducted by both the current senior researchers as well as new talent. The Steering Committee of ECOOM should remain vigilant in order to prevent ECOOM to take on too many ad hoc tasks. We agree with the recommendation of the expert panel

⁵ Observatoire des Sciences et des Techniques (OST) in France, the Nordic Institute for Studies in Innovation, Research and Education (NIFU) in Norway and the Centrum voor Wetenschappen- en Technologiastudies (CWTS) in the Netherlands

that for larger ad hoc assignments, additional resources should be found as well. Not only financial resources are important in this respect, but also the availability of researchers with the right expertise to carry out these assignments.

3. The coming year 2013, during which the preparation for the next covenant with ECOOM can take place, should be used to hold a careful substantial discussion from the demand side (the respective stakeholders from the Flemish policy arena in innovation and science), in order to determine which parts of the R&D monitoring have priority and which new topics (also those proposed by ECOOM) are of strategic importance given the recent policy developments (for instance the 'New Industrial Policy', the rise of themes in the European R&D policy that are of relevance for Flanders, etc.). Especially the direct clients, (the cabinet of the) Flemish Minister of Innovation, Public Investments, Media and Poverty Reduction and the department of Economy, Science and Innovation, should indicate the strategic priorities. Afterwards, this could lead to a dialogue with the ECOOM promoters and researchers in which the importance of new themes from the supply side can be brought forward. In this discussion the policy research centres such as STORE (Support Centre Entrepreneurship and Regional Economy) could be involved in order to prevent overlap and to create synergy.

Recommendations to ECOOM

4. Every participating university should put an effort into finding a good way to retain young talent in the ECOOM research, for instance by means of the solution proposed by the expert panel. This solution encompasses the PhD students to first have a year learning how to deal with routine basic tasks related to working with data sets and indicator development, after which they are embedded in a relevant research group in the university. Every partner should consider the development of research competences in the ECOOM themes as a chance to position themselves better in the R&D domain, and also as a benefit to their own research management. At this moment, the expertise and research efforts are very unevenly distributed within the ECOOM consortium.
5. ECOOM should, in a targeted strategic effort before the start of the new covenant period, identify where added value (not only content-related but also on the basis of a cost-benefit analysis) is to be found in bringing together themes and data sets which are now existing or still taken on out independently. The expert panel argues for better co-operation between the ECOOM groups. Given that the expertise and research capacity of ECOOM partners is quite diverse, this should be realistic and provide added value, both for ECOOM itself as for policy makers. Co-operation should not be a goal in itself, but where better 'strategic intelligence' could be achieved by linking data and analyses, better co-operation within ECOOM should be pursued.

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