



**Interim Evaluation
Seventh Framework Programme
of the European Community (2007-2013)
Direct actions of the Joint Research Centre**

Final Report
December 2010

Summary version

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FOREWORD BY THE CHAIRMAN

At the conclusion of the interim evaluation of the non-nuclear Direct Actions of the Joint Research Centre under the Seventh Framework Programme it is my pleasure to congratulate the JRC on its work, its achievements, and its competent staff and on our overall positive assessment of the JRC's activities in the first half of FP7. This assessment work has been carried out by twenty-five experts through five thematic evaluations and a final meta-evaluation.

It was a fruitful experience to evaluate the JRC's non-nuclear programme in two stages. This novelty allowed us to make some observations at "thematic level", and in the second stage also to see some organisational, institutional features, confirmed more or less at "programme level".

We evaluated the work of a Commission department that operates quite smoothly behind the EU policy makers, usually invisible to the public. It has a very interesting science-based policy-support mission, central to all its successful activities. But this implies that the JRC has to capitalise continuously on its European added value, taking the maximum advantage of its unique position inside the Commission.

Few of the experts would choose the word "research" to brand the activities that we assessed. I would prefer to call it "science" practised as we see it for instance in support of EU policies. Hence the panel also sends an important message that a careful re-positioning of the JRC, closer to science than to research, would make a difference.

"Know your business", "Set your priorities" and "Live your strategy" are the catch-phrases used in the report, whereby discontinuation of activities has to be an active element in the priority setting, based on four ranking criteria. Related to the strategy, we believe that the JRC should develop it further with specific thematic and horizontal content in consultation with the policy stakeholders. And it goes without saying that any implementation of a new strategy would benefit from effective, lean and transparent governance.

These ideas are elaborated in the report and I am convinced that the JRC can use them to reinforce its position into the next framework programme to become the European Commission's scientific service in support of the Europe 2020 agenda.

Finally I wish to acknowledge the work in the thematic evaluations and all experts to whom we, as chairs of the thematic panels are indebted for their thorough analyses. On behalf of all I also convey words of thanks to the JRC for the timely provision of information and for the open and constructive dialogues as well as the necessary support during the different stages of the evaluation.

Jeroen van der Veer

EXECUTIVE SUMMARY

This report presents the interim evaluation of the direct actions by the Joint Research Centre under the Seventh Framework Programme (FP7) of the European Community (EC) for research, technological development and demonstration activities (2007 to 2013). The evaluation took place half way through the programme and covers the period of January 2007 until September 2010.

The interim evaluation was designed as a two-stage process, whereby the last stage, i.e. the preparation of the current interim evaluation report, builds on observations and conclusions of five “thematic evaluations” prepared in the first stage. These five reports respectively addressed the JRC activities in five policy / competence-oriented areas:

- Sustainable management of natural resources
- Safety of food and consumer products
- Energy and transport
- Security and anti-fraud
- Contribution to the Lisbon agenda

For the main report the panel identified a number of common issues that came out of the five thematic evaluations. The panel also made a synthesis of considerations and observations that emerged from sharing the knowledge and experiences of the five panels in the thematic evaluations.

The overall results of the evaluation half way the Seventh Framework Programme demonstrate that in the period 2007-2010 the JRC broadly fulfilled the objectives set out in its programme. The work is in general of a high international standard with nearly all actions producing peer reviewed scientific publications. JRC’s support to policy development and implementation is usually timely and of high quality and the JRC contributes in many aspects to the European Research Area.

Regarding the remaining part of FP7, the JRC introduced its strategy 2010-2020 as recommended by the ex-post FP6 evaluation. The panel acknowledges this strategy as an important step. It brings the JRC today at a junction that is opening up new directions for fulfilling its mission of science-based support to EU policies. With the recent nomination of a new Director General for the JRC the Commission responded to the need to create business continuity at top management level. This is crucial for an organisation at crossroads. It will enable a continuation of the development of the strategy and its gradual implementation in time for the next framework programme. The report highlights a number of features that the panel sees as relevant for both processes, i.e.:

- a structure of thematic areas balanced as regards human and financial resources and in relation to the long-term policy needs and the JRC’s ability to support the Commission;
- a deeper understanding of the science-and-policy landscape in which the JRC operates;
- the right branding and communication of the JRC’s core business;

- substantial plans for the thematic areas and also for cross-cutting issues like: ERA, networking, infrastructure, access to infrastructure, and international positioning.
- effective and transparent governance where the (policy) customer takes a high profile at all levels in a clear-cut organisational structure with single point contacts in the JRC for interfacing with the customer.

Most of these features associated with the strategy are in effect reiterated in the broader context of the main recommendations from this evaluation, formulated in the various parts of the report. In total the panel formulated ten main recommendations: nine of them are for the JRC in this executive summary presented under the heading of three catch-phrases also to help focusing the JRC in the follow-up process to this evaluation. One recommendation is addressed to the European Commission, since it concerns procedures for recruitment and human resource management. These recommendations are intended to have an impact on the JRC and to help shaping its future.

Know your business

The JRC's mission is to “provide customer-driven scientific and technological support” to EU policies whilst serving as a “reference centre of science and technology for the EU”. This mission brought the JRC to the well-recognised position it currently has, i.e. the Commission's in-house scientific service. Nevertheless, besides the mission of “providing support to policies” the panel believes that the JRC needs an explicit, more specific definition of its “business”. This would give more focus to the different parts of the JRC work programme and could reduce the observed wide variety of tasks. The report makes a number of recommendations to this end.

- a. For the future the JRC should start branding itself consistently, based on a set of key tasks for scientific and technical support to EU policies as they follow from the mission. The panel recommends making an inventory of JRC activities that produce context-sensitive scientific knowledge for this policy support, and establish where it should promote institutional permeability between science and society to give authority to the information that it feeds into the policy process.
- b. The JRC should start to distinguish its operational and routine services from scientific and research tasks. Although justified exceptions are always possible, the JRC should exclude the provision of operational services beyond an introductory phase as a matter of principle.
- c. The JRC should give more room in its programme to proactive subjects related to new, improved and holistic policy developments. It should also continue to capitalise on its European added value, i.e. looking at issues from inside the Commission with a common European point of view, taking on board as many scientific disciplines and macro view points as necessary to reach authoritative conclusions.
- d. To enhance visibility of the achievements and the impact of the organisation, the panel recommends that the JRC should investigate how it can improve its communications to the senior decision making level in the EU and in the member states.

Set your priorities

e. To ensure focusing on the priorities in the programming the panel recommends to apply a standard framework of criteria for ranking the activities of the JRC periodically and to achieve a discontinuation rate of 10% through de-selection of the lowest ranking activities. The suggested four ranking criteria are:

- the activity's contribution to knowledge creation and policy support,
- its European added value
- the uniqueness of the JRC for the activity, and
- its cost effectiveness

f. The JRC should establish how much resources it has to assign to maintain a scientific basis broad enough to carry out its mission properly in the different areas and for the different activities. The proportion science/policy support has to be established periodically for the various activities, since it varies widely across the range of JRC's activities.

Live your strategy

g. The JRC should develop a corporate strategy for its networking in the EU with a special eye for new member states and candidate countries as well as the global dimension. The strategy should be based on a corporate inventory of JRC networks in the various areas with an internal assessment of the benefits, the productivity and the long-term commitments associated with each one of them.

h. The JRC should develop a vision and strategy for its role within the European Research Area putting particular emphasis on (i) integration, coordination and facilitating of scientific networks as well as on (ii) developing and maintaining European infrastructures and tools suitable for sustainability assessments.

i. Considering the importance of effective and transparent governance for the implementation of the new strategy with an effective representation of policy support stakeholders, the JRC should make a revision of its governance based on an open review of the relevant bodies, structures, mechanisms and processes for consultation and decision-making in the planning and programming of the JRC.

Finally the panel addresses a recommendation to the human resource authorities of the Commission:

j. The Commission should assist the JRC looking for possibilities to bring more flexibility in recruitment procedures, e.g. by introducing new types of temporal and permanent positions, giving the JRC more agility to engage seasoned scientists with a mature mix of science knowledgeability and policy sensitivity.

1 INTRODUCTION

The interim evaluation of the direct actions by the Joint Research Centre (JRC) under the Seventh Framework Programme (FP7) of the European Community for research, technological development and demonstration activities (2007 to 2013) concerns the non-nuclear activities of the JRC carried out in the first part of the programme between January 2007 and September 2010.

The non-nuclear activities of the JRC together will receive € 1.7 billion from the total € 50.5 billion budget of the EC FP7 over the seven years of the programme. Hence, the evaluated activities represent roughly € 250 million on an annual basis and they cover roughly 75% of the entire JRC programme; the remaining part being the nuclear activities which have been subject of an interim evaluation¹ in the context of the Seventh Euratom Framework Programme earlier in 2010.

The last major evaluation² of the JRC programme in 2008 recommended evaluating the JRC programme in smaller, sectoral, competence-oriented parts, in order to receive focused feedback on the activities in the competence areas. Consequently, instead of one "traditional" evaluation of the whole JRC programme, the JRC arranged this interim evaluation in two stages with five expert panels carrying out five thematic evaluations in the first stage, thus fulfilling the recommendation of the ex-post FP6 evaluation. This provided an aggregated information base for the second stage of the exercise, the actual interim evaluation, implemented as a meta-evaluation of the five thematic evaluations and subject of this report.

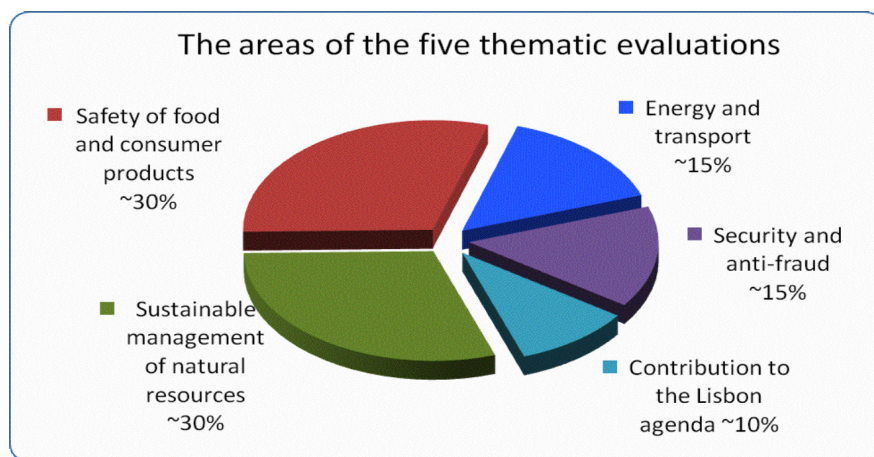


Figure 1. The five evaluation themes with their indicative round percentages of the non-nuclear programme resources

¹ Interim evaluation of the direct actions of the Joint Research Centre (JRC) under the Seventh Euratom Framework Programme (2007-2011), Final report February 2010.

² Ex-post Evaluation of the Joint Research Centre Direct Actions in the Sixth Framework Programmes (2002-2006), Final Report September 2008 and the Commission's response, SEC(2008)3105.

The thematic structure for this interim evaluation was composed of five competence-oriented areas displayed in Figure 1 with their indicative rounded average percentages of resources coming from the non-nuclear programme.

The JRC established this ad hoc structure of themes for the evaluation in the middle of an organisational adaptation to the JRC strategy 2010-2020. The new strategy has a slightly different thematic division with a sixth theme of “reference materials and measurements”. The activities in this area come either from the evaluation theme “Sustainable management of natural resources” or from “Safety of food and consumer products”. This evaluation addresses the reference-materials-and-measurements activities adequately in the respective thematic evaluation reports and does not refer any further to this supplementary theme.

The thematic evaluations took place between June and October 2010 when five thematic panels performed their evaluations based on extensive written input provided by the JRC (composition of the thematic evaluation panels cf. annex II).

The baseline documents against which the assessment was made are specified in annex III and consisted in broad terms of:

- General JRC reports on progress (e.g. annual reports, annual activity reports, and the results of customer surveys);
- Reports of previous framework programme evaluations;
- JRC “Facts and Figures”: a series of summary documents containing, inter alia, information on human resources and budget implementation for the JRC and the evaluation themes;
- A report from each JRC action³ during the evaluation period;
- Statistical information on the implementation of the research activities (e.g. publications, patents);
- Detailed publication data from JRC’s corporate publication repository (PUSBY);
- An internal report on JRC infrastructures; and
- A status report on the follow-up to recommendations of the ex-post FP6 evaluation.

The panels received further information during their visits to JRC sites, visited relevant scientific infrastructure and benefitted from questions in open discussions between the panel and JRC staff. The reports of the thematic evaluation were finalised and submitted to the JRC by mid-October. These thematic evaluation reports are an integral part of the interim evaluation of the JRC in FP7 and they are included in the annex to the full version of the interim evaluation report.

In October and November 2010 the chairs of the thematic evaluations carried out a meta-evaluation based on the findings of their panels, addressing the

³ A JRC “action” is the smallest administrative entity for implementing the JRC programme. Each action has its own set of objectives and associated resources. Therefore “action” often simply reads like “project” (i.e. one specific task of investigation), but it should be noticed that actions typically encompass more than one project and change content over time.

specific evaluation questions as annexed in the JRC Terms of Reference⁴. The pitch of the current interim evaluation report lies at a higher level than that of individual actions and findings and conclusions in this report refer in general to the corporate JRC issues or occasionally to the level of the evaluation themes excluding nuclear which falls under the Euratom programme.

The results of the interim evaluation are presented in the next chapters, starting in Chapter 2 with a consolidated description of a number of important issues common to all thematic evaluations. They have been addressed and can be traced back in practically each of the individual thematic evaluation reports. Subsequently Chapter 3 presents a number of synthetic considerations and observations that emerged from sharing the knowledge and experiences of the five panels in the thematic evaluations. The issues in this chapter should guide further reflection and discussion in the JRC as well as with its most important customer, the European Commission, and its stakeholders. Chapter 4 of the report presents the key results of each of the five thematic evaluations. Finally, Chapter 5 lists the main recommendations, highlighted in the report.

In this introduction the panel also wishes to acknowledge three particular aspects of the current evaluation report:

1. The report should not be taken as a substitute for the detailed thematic evaluation reports, which enter into more detail and present dedicated findings from the experts, sometimes down to the level of an action³. The JRC shall take these thematic evaluation reports as guidance for improvement within the respective themes.
2. Several recommendations in this report concern issues addressed in previous evaluations. The panel is aware that there are “continuous recommendations” and that this report adds further recommendations possibly before previous recommendations could show their full effect. Nevertheless, the panel reiterates them as they give distinct emphasis to the issues addressed.
3. The report aggregates findings of a series of thematic evaluations covering a diverse set of disciplines and kinds of policy support. At the end of the exercise the panel noticed some seeming inconsistencies in the comments, but could solve them all through an appropriate contextual analysis. Therefore all comments in the report and in the thematic reports have to be considered within their context.

⁴ Terms of reference Interim evaluation of the direct actions of the Joint Research Centre under the Seventh Framework Programme of the European Community (annex I).

2 COMMON ISSUES FOR ALL AREAS

The two-step evaluation approach, starting with smaller, competence or sector-orientated evaluations and ending with a meta-evaluation of the thematic findings is a novelty for the JRC. The advantage of this approach lies in the opportunity to make more specialised observations at the level of the different themes. Nevertheless, the formally required FP7 interim evaluation is about an overall view on the non-nuclear programme focussing on common issues across the thematic evaluations.

Throughout the five reports and in the meta-evaluation the panel made a number of observations on the JRC's operations, programming, organisation, future goals and ambitions and where it can improve. However, the important statement upfront is that the JRC's achievements in the period 2007-2010 are fulfilling the broad objectives set out in FP7. The work is often of a high international standard with nearly all actions producing peer reviewed scientific publications. JRC's support to policy development and implementation is usually timely and of high quality and the JRC contributes in many aspects to the European Research Area.

The common issues presented in this chapter capture the constructive criticism and concerns as this came out of the meta-evaluation in which the chairs of the different thematic panels shared and discussed their findings and observations.

2.1 Mode of operation and the need to set priorities

Compared to other entities, like national scientific and research organisations, universities, private consultancies or think tanks, including European institutions, the JRC's strengths lie in (i) its capability to look at issues from inside the Commission from a common European point of view and (ii) its capability to take on board as many scientific disciplines and macro view points as necessary to reach authoritative conclusions.

Although the mission of the JRC captures these strengths, the panel believes that they are not enough internalised in JRC thinking. For instance, a key condition for including activities in the JRC work programme should be that they make use of these capabilities. Therefore, most of the thematic evaluation reports include an encouragement for the JRC to look for a holistic and integrated approach, to work transdisciplinary and take full advantage of the interdisciplinary possibilities (cf. Chapter 3). To achieve this and to exploit its unique position to a fuller extent the JRC would benefit from a different, more proactive mode of operation.

Much of the current work is reactive, serving direct needs of a customer, whereas the panel believes that a Commission service like the JRC could be more proactive and do more on agenda setting, scientific foresight and policy anticipation. This implies that in addition to the usual customer-driven programmes, subjects related to new, improved and holistic policy development should receive more room. The identification of such subjects can tap on both, internal and external resources, e.g., through the involvement of universities and/or national research organisations, but also through

contacts inside the Commission. The coordination of such networking requires appropriate scientific consultation processes.

An example: when inside the JRC a unit starts a specific activity on air quality, it may be much better to handle this subject from a quality-of-life point of view, including all kinds of other hazards to health and sustainability.

This “mode-of-operation” issue is also clearly linked to how the action portfolio is composed and how the JRC selects the specific tasks. In each of the thematic evaluations the experts have been looking for more clarity about this, but criteria for setting priorities in the selection and acceptance of tasks are not explicit. The need for priority setting is included here as a clear common observation, but Chapter 3.3 comes back on this issue in elaborated detail as part of a discussion on the criteria for the acceptance of work.

The JRC should give more room in its programme to proactive subjects related to new, improved and holistic policy developments. It should also continue to capitalise on its European added value, i.e. looking at issues from inside the Commission with a common European point of view, taking on board as many scientific disciplines and macro view points as necessary to reach authoritative conclusions.

2.2 Science-driven activities vs. policy support and the place of routine services

Science-driven activities vs. policy support

Several experts in the thematic evaluations observed that the work of the JRC in their area has a rather strong focus on pure science. It is true that the JRC needs a highly qualified science driven background to ensure sustainable quality and credibility of science-based policy support and activities on request. However, there is the risk that science becomes too prominent, that it becomes an end in itself rather than that it is practised as a means to support policies. Therefore the JRC should find out how broad its scientific basis has to be, and how much resources it has assign to “science” to carry out its mission properly.

The place of routine services

The fraction of operational and routine services is higher than the panel had expected based on the programme descriptions. These services to the Commission DGs or EU agencies are developed without a necessary mid-to-long term perspective on how they should be organised and run including considerations of handing them over to an appropriate operational player. The operational and maintenance expenses of such services could become a burden to the scientific work. Developing and operating a service are two different processes and it should not be the JRC’s task to run the operational part. Although justified exceptions based on important reasons are always possible, the panel is firm that JRC should exclude the provision of operational services of indefinite duration as a matter of principle.

Hence the panel suggests that the JRC starts to distinguish its operational and routine services from scientific and research tasks. Furthermore the JRC should identify the various phases in the development of these services (research, development, pre operational and operational where justified) and define their project cycles, including potential operational phases outsourced to third parties. Subsequently the cycle of the project should be fixed in an early stage to avoid that resources for research tasks are blocked in operational tasks, which might as well be carried out by non-research staff. Early introduction and collaboration with industrial/operational players would also allow the support of innovation and the European technical and industrial basis.

The JRC should establish how much resources it has to assign to maintain a scientific basis broad enough to carry out its mission properly in the different areas and for the different activities. The proportion science/policy support has to be established periodically for the various activities, since it varies widely across the range of JRC's activities.

The JRC should start to distinguish its operational and routine services from scientific and research tasks. Although justified exceptions are always possible, the JRC should exclude the provision of operational services beyond an introductory phase as a matter of principle.

2.3 Human resource management, mobility and further staff issues

Previous evaluation panels flagged that the JRC should be granted hiring procedures and career management schemes in keeping with the skills required. Again, in this evaluation the panel sees human resource management as an outspoken and important common issue, largely because it has such an enormous influence on the overall performance of JRC and remains one of the major causes and food for criticism.

Indeed, the acquisition and the dynamics of the human resources in the JRC are those of large administrative bodies commensurate with the supranational character of the European Commission. Neither the directors nor the people working in the JRC, have a possibility to make a general change of the situation from inside their organisation, but continued attention from the Human Resource authorities in the Commission can help to achieve the maximum possible.

Supported by recommendations from previous panels the JRC managed to carve out a few useful exceptions and improvements for its overall recruitment process. Nevertheless, the panel is not sure that the present human resources policies of recruiting young staff, employing seasoned experts for short or longer-term assignments and “managing out”, are sufficient for the new strategy/organisation as recently put forward.

Temporary positions could include PhD-thesis and postdoctoral positions with closer links to universities, which could reinforce exploratory research and contribute to further networking. In addition, career management and the individual obligation for further development including mobility need on the

one hand more flexibility, but on the other hand more rigour (e.g. the position of action leaders).

The Commission should assist the JRC looking for possibilities to bring more flexibility in recruitment procedures, e.g. by introducing new types of temporal and permanent positions, giving the JRC more agility to engage seasoned scientists with a mature mix of science knowledgeability and policy sensitivity.

2.4 Follow-up to the ex-post FP6 evaluation of JRC

The follow-up of recommendations is a key evaluation issue and accordingly the various thematic panels examined to what extent the JRC followed the main recommendations from the ex-post FP6 evaluation. They focussed on three issues:

Strategic positioning: For this the major task for the JRC was to establish a rolling five-year strategy, formulate a vision with clear goals, analyse its assets making a proper representation of policy support areas and competencies, and adopt criteria for accepting or not accepting tasks and apply them rigorously. With the new strategy the JRC has come a long way and subsequent implementation and further refinement of the strategy will proof its value. The requested start and stop criteria are addressed below in the current evaluation report as a special issue (cf. 3.3 Criteria for acceptance of work).

Human resources: The JRC made a serious and successful effort to improve within strict and rigid boundaries of the Commission's recruitment procedures. The JRC achieved effectively a net increase in temporary staff posts, the grant holder scheme has been secured and can be used in the future, specialized competitions for permanent staff have been launched and the JRC set up a rolling multi-annual plan of permanent staff recruitment. Nevertheless, the current report reiterates the issue, since recruitment rules and temporary contracts are of continued concern.

Modernising the organisation: Following the introduction of the new strategy the panel noticed signs of change in the management towards an organisation driven by the new strategy. To make sure that the organisation lives up to expectations it is essential to have single point accountability of the thematic areas for strategy implementation and for the interface with customers.

The JRC has prepared the relevant inventories for a mid and long-term assessment of the status of its research facilities and infrastructure and should proceed on the actual assessment without further delay.

The JRC adopted a strategy to enhance its knowledge management tools and launched the necessary modernisation programme. The effects should be visible in the next external evaluation of the JRC.

As a practical issue the previous panel also suggested to organise smaller competence- or sector oriented evaluations. The thematic evaluations of the current interim evaluation exercise successfully implemented this recommendation.

2.5 Networking, new Member States and an international dimension

The JRC has its own view point and capabilities. Hence, active cooperation with or outsourcing to other entities either on national or European level should be considered as an effective way for a good reputation, for quality and for completeness whilst avoiding unnecessary overlaps. Therefore the JRC has a particular role as a builder of networks and also in making sure that the advice given to the Commission is based on wider knowledge than that produced in the organisation itself. Indeed, via collaboration agreements of their hosting institutes many actions cooperate with external organisations working in similar areas of interest. Through this the JRC is able to achieve the harmonisation and validation of methods and measurements, elaboration of common standards, and the provision of support in the implementation of European legislation.

Nevertheless the panel noticed that the JRC's networking potential in some areas is so broad that it needs more focusing and a better co-ordinated approach. Therefore the JRC should make a corporate inventory of its networks in the various areas with an internal assessment of the benefits, the productivity and the long-term commitments associated with each one of them. This in turn could trigger a corporate network strategy, which would contribute to a further development of the JRC's position in the European Research Area (ERA), as put forward later in Chapter 3.

The JRC should keep an eye on the particular need and opportunities for networks accommodating enlargement of the EU and international cooperation with countries outside the EU. Special attention for the new member states should remain necessary. After the increased attention during the accession phase and the first years of the enlarged European Union, the JRC should continue to highlight training of researchers, organisation of joint workshops, training courses and information events for the new member states.

The JRC should develop a corporate strategy for its networking in the EU with a special eye for new member states and candidate countries as well as the global dimension. The strategy should be based on a corporate inventory of JRC networks in the various areas with an internal assessment of the benefits, the productivity and the long-term commitments associated with each one of them.

2.6 “Institutional existence has to be earned”

Renewed calls for accountability and responsibility in the public sector make today that institutional existence and credibility have to be earned. Whilst the panel sees and scores JRC's knowledge and contributions to policy making as ranging from good to sometimes excellent, the impression is that presentations and communication of outcomes can be stronger. Marketing of JRC products, services and deliverables in the European Commission and the EU merits more management attention and specialised support.

Across the thematic presentations the panel has seen few key performance indicators (KPIs) that are understandable for outsiders and that are of help internally and externally. KPIs should show progress against plans in the

annually published Management Plan and include objective measures of the quality of output and deliverables in the areas of policy support and scientific knowledge.

Although the impacts of JRC work on policies appeared to be carefully monitored, they were often not visible in the communications to the thematic panels. Nevertheless, they are the *raison d'être* and should be highlighted and publicised.

Targets for the dissemination of JRC impact should include policy makers in member states, research institutions in the member states that may provide the links to national policy makers and may facilitate exchange in research. Communication should also take place through making available JRC data bases and methodologies (workshops organised at JRC and in EU members states (particularly the new ones).

To enhance visibility of the achievements and the impact of the organisation, the panel recommends that the JRC should investigate how it can improve its communications to the senior decision making level in the EU and in the member states.

3 SPECIAL OBSERVATIONS

The special observation presented in this chapter emerged from a number of synthetic considerations based on the shared knowledge and experiences of the five panels in the thematic evaluations. The issues in this chapter should guide further reflection and discussion in the JRC internally as well as with its most important customer, the European Commission, and its stakeholders.

3.1 The science-and-policy landscape for the JRC

In the different stages of the evaluation exercise the JRC gradually showed different facets of its operation, functioning and organisation. Viewed from one angle, the JRC is a European Commission service and therefore in practice part of the day-to-day policy-making processes of the EU. Viewed from a different angle, the JRC – even though it is a Commission service - shares many characteristics with national scientific research and technical organisations. It is because of these many different aspects that the JRC takes a highly interesting position in the European science-and-policy landscape.

Its position inside the European Commission provides a relation of trust and reliability between scientists and policy makers. This allows the JRC to sort considerable effect with its (scientific) knowledge in European policies and regularly creates examples of fruitful interaction between science and governance.

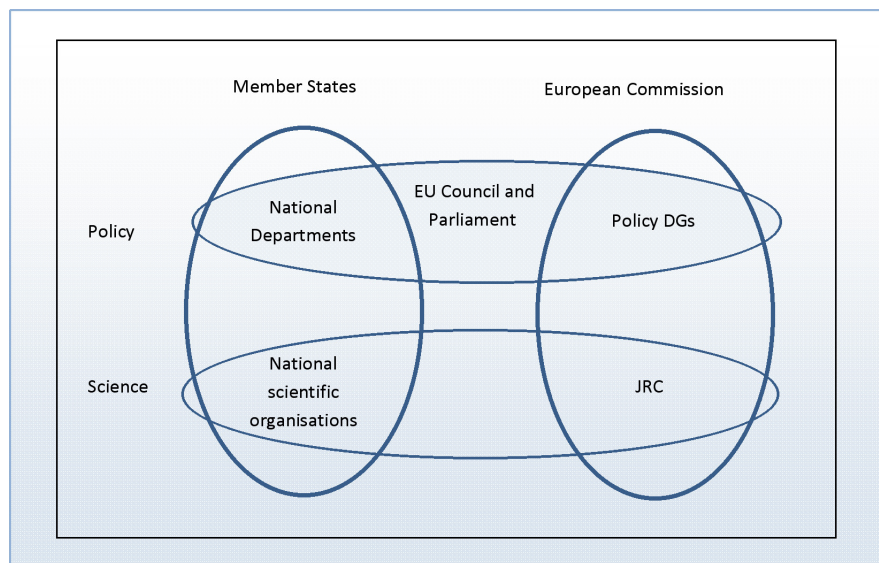


Figure 2. Simplified view of the science -and-policy landscape for the JRC

In an attempt to depict the position of the JRC in the policy and in the science landscape the panel depicted the diagram in Figure 2. It shows both environments in which the JRC is present through its place in the Commission, but it also shows the different connections to the member states. Whereas policy DGs are institutionally communicating to the member states through the EU Council and Parliament and all its associated bodies, there is no institutional communication link for contacts between JRC and national scientific organisation for scientific discussion in the EU.

The panel is certainly not promoting the creation of an institutional body for this kind of communication, but presents this picture to draw the attention of the JRC that there is a need for this communication, in particular for discussions and forming consensus on and credibility for the underlying science for JRC's policy advice. Since the JRC is in a key position to cater for these links, it should systematically look for them in the areas where the JRC is active and support the creation of such links where they do not exist.

3.2 Branding the core business

Related to the discussions about the JRC in the science-policy landscape in the previous section, the panel also discussed the nature of the work of the JRC. The various thematic evaluation reports already showed that it is not easy to find a qualification of the JRC's activities that is valid in every area.

Every organisation needs to have a clear idea of its “business” for branding and successful marketing of its products. Therefore, it is important to be able to answer the question: “What is the business of the JRC? This question is included in this final report not to solve it, but to be provocative, to raise ideas and to stimulate further debate about branding the business of the JRC.

Through its name the JRC brands “research” as its core business. However, in the evaluated actions the panel found that the research component in many of them is modest and that the number of those which actually do research in its conventional meaning is decreasing. Indeed, also the JRC's mission makes no mention of research and gives as core business: the provision of scientific and technological support to policy processes and being the focal point, i.e. the reference centre of science and technology for the EU. For the JRC as well as for many other government research institutes, research is not a goal in itself but it is a prerequisite for providing the knowledge and critical thinking that gives the credibility to produce reliable policy advice and support.

The thematic evaluation reports use an imaginative terminology when they describe JRC's business as: “knowledge production”, knowledge transfer or management of knowledge in a transdisciplinary manner. These concepts are spot-on and ready to be used for positioning, branding and marketing of the JRC. A first step is that the JRC should start to internalise this message that, rather than research, its primary business is contribution to the policy cycle by knowledge production with a public accountability for the knowledge that it produces.

Much of what the JRC produces within the EC framework programme is nowadays described in the literature as context-sensitive science⁵. It refers to a new mode of knowledge production, which takes place outside the traditional university settings and outside of disciplinary communities. This mode of knowledge, including development and application of integrated concepts and models undertaking science-based assessments, satisfies a

⁵ This is often referred to as Mode 2 knowledge production, a novel way of scientific knowledge production introduced in the book: *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*, Michael Gibbons, Camille Limoges, Helga Nowotny, Simon Schwartzman, Peter Scott and Martin Trow, 1994.

new requirement, i.e., that both science and society act as open, interactive systems⁶.

The JRC is playing an increasingly important role here, which seems to happen somewhat by itself not driven by strategic goals, thanks to the fruitful interaction between scientists and administrators, who are perhaps from time to time even unaware of this broader context in which their work takes place. Regarding this and as part of future strategies the JRC should develop a deeper understanding of what is changing in the sciences and what this implies for the future of our knowledge producing institutions.

In most of the thematic reports the experts recognised this as a key issue to work on: building the networks, producing, transferring and collecting knowledge for the benefit of the citizens of the EU. The panel believes that this role needs to be articulated much more clearly in the JRC work programme and in next updates of the strategy.

For the future the JRC should start branding itself consistently, based on a set of key tasks for scientific and technical support to EU policies as they follow from the mission. The panel recommends making an inventory of JRC activities that produce context-sensitive scientific knowledge for this policy support, and establish where it should promote institutional permeability between science and society to give authority to the information that it feeds into the policy process.

3.3 Criteria for acceptance of work

Chapter 2 already pointed out that the various thematic evaluations noticed a lack or a lack of visibility of criteria for setting priorities in the selection and acceptance of tasks. Priority setting is a delicate and difficult issue and the panel is aware that the JRC received recommendations on this issue in the past. Not ignoring that this has been on the focus previously, the panel made a synthesis of its considerations on this important issue in this separate section.

In response to recommendations to set priorities and develop criteria etc. the JRC has a number of criteria in place, like e.g. customer drive, scientific excellence, alignment with competence, or support to policy. There is even an internal Periodic Action Review assessing the performance in terms of the impact of an action's support to policies and an action's scientific performance. Apparently relatively clear ideas exist about criteria for priorities in JRC, but the fact that evaluation panels have not noticed an effect is significant. It is difficult to apply criteria for setting priorities in the programming of any organisation also in the JRC.

Nevertheless the panel would suggest starting a periodical priority setting in the programme by using a relatively simple standard framework of the four key criteria proposed in Chapter 2.1 (perhaps in a similar way as the current

⁶ Some scientific organisations, e.g. the National Science Foundation in the United States, have pointed out that this type of science, for which there is an increased need for the future, should form its own scientific discipline making sure that it becomes attractive to the most qualified scientists and that it includes traditional scientific approaches.

periodical action review). Every activity should be scored against these four criteria, i.e. on:

- its contribution to policy support,
- its added value for the Union,
- the uniqueness of the JRC for the activity and
- its cost effectiveness.

Discontinuation of activities has to be an active element in the priority setting and the difficult choice to continue the support for an activity or not must be made. Therefore ranking of all activities against the four criteria is an unavoidable exercise to establish 25% of the activities scoring lowest. Ultimately the lowest 10% has to be rationalised or discontinued.

To ensure focusing on the priorities in the programming the panel recommends to apply a standard framework of criteria for ranking the activities of the JRC periodically and to achieve a discontinuation rate of 10% through de-selection of the lowest ranking activities. The suggested four ranking criteria are:

- *the activity's contribution to knowledge creation and policy support,*
- *its European added value,*
- *the uniqueness of the JRC for the activity, and*
- *its cost effectiveness*

3.4 The JRC in the European Research Area

Under the EU's Lisbon agenda with the ambitious goal to make Europe the world's most dynamic and competitive knowledge-based economy, the Seventh Framework Programme became an important instrument achieving a key target: substantial strengthening of research in European. Earlier this year at the start of a new decade the EU adopted its "Europe 2020" strategy for growth in the coming years, focussing on smart, sustainable and inclusive growth⁷ and research and innovation remain key targets for reinforcement. The European Research Area (ERA), developed as a central element under the Lisbon strategy, continues to play an important role for achieving the socio-economic goals of the Europe 2020 strategy.

The ERA is composed of all research and development activities, programmes and policies in Europe, which involve a transnational perspective. Together, ERA components enable researchers, research institutions and businesses to increasingly circulate, compete and co-operate across borders. The aim is to give all European research organisations access to a Europe-wide open space for knowledge and technologies in which transnational synergies and complementarities are fully exploited.

⁷ The growth strategy Europe 2020 focuses on:

- Smart growth: developing an economy based on knowledge and innovation;
- Sustainable growth: promoting a more resource efficient, greener and more competitive economy;
- Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.

As an institution independent of private or national interests, the JRC can make an important contribution to ERA by promoting its objectives and by bringing it to fruition. Under FP7 the JRC makes various contributions to ERA, in particular through coordinating research activities in a pan-European perspective and promoting exchange of scientists. Nevertheless, within the JRC there should be more awareness of the meaning of ERA in general and the organisation should have a structured approach to how it can actively contribute to the development of ERA.

In particular the panel would like to see the JRC further developing its role in integration, coordination and facilitating of scientific networks (cf. Chapter 2.6). This may include already ongoing activities but there are also other areas, where the infrastructure role can be of particular importance. In doing this, the JRC should also keep close links with the Commission's Directorate General for Research and Innovation and with EU policymaking.

The JRC should develop a vision and strategy for its role within the European Research Area putting particular emphasis on (i) integration, coordination and facilitating of scientific networks as well as on (ii) developing and maintaining European infrastructures and tools suitable for sustainability assessments.

3.5 Strategy and governance of the JRC

The mandate for this evaluation mentions neither the new strategy nor the governance of the JRC as a specific subject. Nevertheless, they are both important ingredients for the future of the organisation and the panel considered them as such.

Regarding the governance of the JRC, the panel had the impression that it is possible to streamline the various mechanisms and structures for consultation and decision making. The thematic evaluations showed that the JRC has dispersed criteria for prioritisation of work and several mechanisms to structure the relation between the JRC and the policy support stakeholders, like the High-Level Users Group for its customers from inside the Commission. In addition the Board of Governors plays its role in these mechanisms, structures and processes. Justifiably the governance of the JRC is a complex matter, but the complexity has to keep its transparency.

In view of the new strategy and preparations for the next framework programme the JRC needs an efficient governance structure with an effective representation of the policy support stakeholders. Therefore, rather than adding an advisory committee here or trying a quick fix in a decision or consultation procedure there, JRC governance should be considered as a whole and revised on the basis of a thorough and transparent review of all structures, mechanisms and processes for consultation and decision-making in the planning and programming of the JRC.

As regards the new strategy, this is a clear follow-up to recommendations in the ex-post FP6 evaluation and the panel makes the following annotations to the new strategy, aware that its implementation is on the horizon and further development may be needed.

- A thematic structure should consist of areas, balanced in size as regards human and financial resources in relation to the long-term policy needs and the JRC's ability to support the Commission. The structure should be stable for a longer period of time and areas should be further optimized from a managerial, programmatic and competence point of view.
- It is important to start a discussion on the science policy landscape in which the JRC operates (section 3.1) and on the branding of the JRC's core business (section 3.2). A deeper understanding of these subjects will help to reinvigorate the vision and the strategy with new insight.
- Emerging from the thematic evaluations is the need for an elaborated plan or a strategy for their area. Indeed, there is scope for substantiating the strategy with thematic projections and plans and with strategies for cross-cutting issues pointed at above: ERA, networking, access to infrastructure, infrastructure, and international positioning.
- As regards the organisation several thematic evaluations emphasize the need for single point accountability. The current management structure has elements of both vertical (institute) and horizontal (thematic) management, whereas the implementation of the strategy and interfacing with customers require these single points as a clear-cut organisational structure.
- For the short term the panel would also suggest to consider taking independent experts' advice for the necessary adaptations in the organisational structure to the strategy before implementing them.

Considering the importance of effective and transparent governance for the implementation of the new strategy with an effective representation of policy support stakeholders, the JRC should make a revision of its governance based on an open review of the relevant bodies, structures, mechanisms and processes for consultation and decision-making in the planning and programming of the JRC.

4 SUMMARIES OF THE FIVE THEMATIC EVALUATIONS

This chapter summarizes the main findings and conclusions that were drawn in the five thematic evaluations by five expert groups, chaired by the persons who constitute the authors the current interim FP7 evaluation report.

4.1 Sustainable management of natural resources

The evaluation of the activities under the theme “Sustainable management of natural resources” concerned the work of twenty-nine actions carried out in four JRC Institutes: nineteen actions at IES in Ispra, four at IPSC in Ispra, four at IPTS in Seville and two at IRMM in Geel. In terms of resources, this accounts for almost 30 % of the non-nuclear JRC programme.

With its activities in this area and as part of the Commission, the JRC has a unique and important role in the European science-policy landscape (cf. Fig 2 in chapter 3). The activities are well positioned and contribute directly to several EU policies, like the energy and climate package, the EU Air Pollution Directive, the EU Water Framework Directive and the Common Agricultural Policy. This means that the policy relevance of work in this evaluation theme is in general very high.

The scientific achievements are good to sometimes excellent and their quality is usually high. The same applies to the scientific productivity in this area and the JRC plays an important role in bringing research organisations from member states together. Nevertheless experts noticed a few examples in which relevant research in member states had not been considered. Therefore, JRC scientist should take care that they systematically follow related work in the member states.

Several of the activities under this evaluation theme are significant for the European Research Area (ERA). However, scientists at the level of the actions should increase their understanding and awareness of what ERA is meant for. Therefore the thematic evaluation report suggests the JRC to elaborate a strategy in relation to ERA.

The experts counted that the evaluated actions result in twenty-six “tools”, many of which are of high value for EU institutions and member states. Here too it is suggested to structure these tools and to establish a strategy on how to maintain and develop them further in the longer term.

Having seen the variety of activities, the experts encourage the JRC to look for a holistic and integrated approach in order to take full advantage of interdisciplinary possibilities. In this respect it would be useful to consider the whole policy cycle, to include sustainability aspects and to integrate more, for instance between actions in support of the Common Agricultural Policy and actions related to environmental effects. Regarding future orientations the experts recommend the JRC to bring more nuance in the decision to decrease its research on human health aspects, in the sense that human health is so important for the policy development in this area that the JRC should develop or maintain relevant competence to support the Commission (e.g. in epidemiology statistics).

Several actions are widening the perspective by including areas outside Europe or incorporating global perspectives. This widening of perspective is strategically important for the EU and merits explicit support in the JRC strategy.

Staff working in this area is highly motivated and skilled, but it is recommended to simplify recruitment processes for permanent staff.

The JRC should further develop its role as key policy adviser to the Commission by increasing its use of the large amount of research that is conducted within Europe as a whole. At the same time it should develop a strategy for capacity building, maintenance and hosting of successful products/ services. Integration, coordination and facilitation of networks need reinforcement to achieve this.

4.2 Safety of food and consumer products

The evaluation of the activities under the theme “Safety of food and consumer products” concerned the work of eighteen actions carried out in four JRC Institutes: ten actions at IHCP in Ispra, six actions at IRMM in Geel, one action at IPSC in Ispra, and one action from IES in Ispra. In terms of resources, this accounts for practically 30 % of the non-nuclear JRC programme.

The competence of the JRC scientists in this area is high and they have a modern infrastructure at their disposal. The exploratory research is of high level and as a group the activities are relevant for the consumers in the EU.

Some areas of policy support have a relatively low scientific publication rate (e.g. GMOs). Whereas the panel is aware of the delicate balances between policy support and scientific work in the various JRC activities, it is stressed that proactive exploratory research in this area is essential to trigger and underpin policy formulation.

Certain actions demonstrate their expertise in the development of quality methodologies. The experts recommend the JRC for future method development to establish beforehand what sensitivity the method should achieve to satisfy the actual regulatory needs. This step from “what is possible to analyse” to “what is needed” will help speed up the development and standardisation of the required methods.

Early introduction and collaboration with industrial/operational players at these and other highly applied methodologies (e.g. in the field of nanoparticles) would also allow the support of innovation in support to Europe 2020.

Actions evaluated under this theme should strengthen the integration with other parts of the JRC to provide more holistic levels of support and advice to policy makers. Collaboration is needed in particular on issues bearing conflicting interests, such as energy efficient buildings vs. indoor air quality, and greater demands for biomass vs. challenges to food supply.

Reporting the outcome and impact of the actions in this area should be made a priority, not only with a view to the direct customers of the actions, i.e., the EU policy makers, but also to policy makers in member states.

The experts regret the suppression of “health” as a visible subject in the new strategy, firstly because the underlying objectives of many of the activities under the theme “Safety of food and consumer products” are indirectly linked to health and secondly because health is an important issue for the Europe 2020 agenda. Although the word “health” is absent in the thematic title, it must remain possible to work for instance on issues related to health, mostly in the context of highly qualified epidemiological studies in EU and globally in collaboration with EU organisations related to public health and other academic and health EU institutions. For “quality of life” issues, the JRC has to consider environmental aspects in a similar manner by integrating within EU institutions.

In view of this the JRC is recommended to clarify explicitly that the title “Safety of food and consumer products” is used in a broader sense and includes associated and related issues.

Considering that growing importance of addressing societal challenges with themes like “aging population” and “food” and “water quality”, the JRC should be proactive and more work on issues upstream in the policy cycle and less on policy implementation. The planned downsizing of the thematic area as a whole runs counter to this idea. Currently 75% of the work in this area relates to policy implementation. For this purpose and to align it with the goals of the JRC’s new strategy, the projected future specific resources for this thematic area need to be reinforced.

There is also scope for a better integration of the activities in the European Research Area. In particular the JRC should follow the relevant national research policies in EU member states more closely and actively pursue scientific exchange with a number of high-level national research institutions in (new) EU member states. It should also give more visibility to these collaborations.

Similarly the JRC should clearly open its extensive databases in this area to research institutions, the public and (where possible) industry to encourage innovation and collaboration between private and public R&D institutions.

4.3 Energy and transport

The evaluation of the activities under the theme “Energy and transport” concerned the work of fifteen actions carried out in four JRC institutes: ten actions at IE in Petten and Ispra, three actions at IES in Ispra, one action at IPSC in Ispra, and one action at IPTS in Seville. In terms of resources, this accounts for nearly 15 % of the non-nuclear JRC programme.

The activities related to energy and transport have been assessed on four criteria: policy support, added value for the Union, uniqueness, cost-effectiveness

A general observation regarding the activities is that they are carried out in isolation, even within the evaluation theme, whereas most subjects would benefit from an integrated, more holistic approach.

In addition more use could be made of opportunities to participate in open scientific platforms, to share expensive facilities/models with others, and to work more closely with national counterparts. The experts recommend to develop a policy for activities to be executed by JRC itself, and those that could be done in cooperation or through outsourcing.

The activities related to “Hydrogen and fuel cell development” are sub-critical and score low on all four criteria. The JRC should seriously reconsider the position of these activities for the medium and longer term.

Although the photovoltaic work is excellent, the predominant opinion amongst the thematic experts is that this can be done outside the JRC. Therefore the work provides limited added value for the Union and has a high potential for being outsourced.

From a geological point of view new technological CO₂ storage methods offer an attractive means of mitigating the contribution of fossil fuel emissions to global warming. Therefore the panel experts suggested that the JRC could do more related to carbon capture and storage (CCS) focusing notably on the storage aspect rather than on the CO₂ capture aspect like in the current activities in the area of gasification and CO₂ capture, which could be de-emphasized.

In the future, work in this area can play an important role in stimulating innovation through actively considering innovation aspects of norms, standards and policies. This role asks for more in-depth understanding of innovation theory and practices and for influencing science and technology development networks and consortia.

Furthermore, for this area the experts suggest to do more networking, to keep an inventory of quotation indexes and to place more emphasis on key performance indicators, also to motivate staff.

Having considered the work in this evaluation theme, the experts noticed that the research component in most of the work is modest and small. Nevertheless, “research” appears prominently in the name of the Joint Research Centre; an issue flagged for further reflection.

With the new strategy a new organisational structure is emerging and it is noticed that there is potential friction in the co-existence of an institute structure and a cross-cutting thematic organisation.

Still more in general the experts noticed that human-resource management and notably recruitment of staff is out of line with the market, which makes it difficult to recruit the more seasoned scientists that the JRC needs.

4.4 Security and anti-fraud

The evaluation of the activities under the theme “Security and anti-fraud” concerned the work of sixteen actions carried out in two JRC institutes in Ispra: fifteen actions at IPSC and one at IES. In terms of resources, this accounts for well over 15% of the non-nuclear JRC programme.

The thematic experts consider that both the researchers and the research done at the JRC are of high value and quality. Monitoring and control research is of high quality. The Critical Infrastructure Protection area has a valuable role in policy making, research and innovation. Crisis Management research is clearly of high quality and takes a global view.

The experts also noticed a wide variety of activities under this evaluation theme, perhaps too wide for the overall size, bearing the risk that some activities become sub-critical because of the limited resources. Therefore, networking, integration across thematic areas to enhance synergy and a focus on strategic priority research projects are considered as essential goals for this area.

In this area information and communications technology (ICT) is both an enabling technology as well as a research theme of its own, but the latter is not addressed in a structured way across the JRC. To strengthen the focus and to enable this focus to prevail the experts strongly suggested that the JRC should formulate a strategy that positions the JRC with respect to ICT research.

As far as standardisation is concerned, JRC should focus on pre-normative research in the areas where its competences and unique research facilities can be exploited best. The present staffing and instalment of the JRC is not designed for operational tasks (like becoming a certification body) that exceed an experimental phase and it should be considered to outsource certain tasks.

The JRC should put in place a strategic plan for cooperation with external organisations, including research and security entities of other Commission directorates general and EU agencies (e.g. the European Network and Information Security Agency -ENISA). Strategic partnerships will be developed following this plan, to complement and replace the existing ties with various organisations. The JRC shall also be more involved in stakeholder forums including the private sector.

“Scientific positioning” should become a higher priority for the actions evaluated under this theme. A dissemination, publication and exploitation policy should be put in place and assessed on a regular basis to support results of the research work becoming more visible and to make active contributions to networking. The researchers shall be strongly encouraged and supported to publish in high- quality conferences and journals as well as to generate, manage and maintain intellectual property rights (IPR) e.g. through patents.

The appointment of a thematic lead director to implement the new strategy is seen as a positive step in that direction and should lead to a clearer governance process for this area and in fact for the whole JRC.

Commission rules impose a rigid recruitment scheme which does not help the scientific positioning of this or the corresponding “Security and crisis management” thematic area in the strategy. A compromise shall be found to avoid limitation in the scientific quality of JRC research.

There is more developed than exploited in this area and JRC Intellectual Property management and the patent/licenses strategy need to be improved, as well as the procedures for transferring mature technologies and operational tasks to the private sector.

4.5 Contribution to the Lisbon agenda

The evaluation of the activities under the theme “Contribution to the Lisbon agenda” concerned the work of ten actions carried out in two JRC Institutes: eight actions at IPTS in Seville and two at IPSC in Ispra. In terms of resources, this accounts for roughly 10% of the non-nuclear JRC programme.

The JRC units that carry out this work are of good to excellent quality producing useful products in a cost-effective manner. Nonetheless, with a more pro-active and prospective profile and a long-term vision, this theme could have a higher impact and much more relevance for EU policy-making.

The experts are of the opinion that the JRC in this area needs a different balance in activities and resources with a view to covering social, technological and economic perspectives.

A closer interaction with high-level policy makers on agenda setting is pivotal for increasing the JRC’s policy impact in this area. It also needs a more effective governance structure to drive strategy setting in which the longer-term policy interests are well represented.

The transition from the Lisbon Agenda to the Europe 2020 strategy represents both a challenge and an opportunity for the JRC. The opportunity is to establish overall and long-term agreements with clients and to define future activities based on such agreements. The challenge lies in the possibility for the JRC to make a more pivotal contribution to the Europe 2020 strategy.

It is important that management provides clear guidelines for this area what the ratio should be between scientific and policy-impact deliverables. In any case the emphasis should be more on the latter. It should be ready to develop more resources to the development of capacities for technological assessment and for tackling the social dimensions in the policy agenda. It should also encourage cross-cutting contributions from units in different JRC institutes, i.e. promote collaboration between units within the IPTS, between the IPTS and IPSC and across the JRC in general through multi-disciplinary and multi-policy teams.

In addition the JRC should introduce the proper incentives to create stronger links with international policy organisations and to achieve a fundamental increase in cooperative research. It will also be beneficial to enhance networking and participation in researcher-mobility schemes in cooperation with academic entities from member states.

5 LIST OF RECOMMENDATIONS

In this report the panel put forward ideas, made a number of suggestions and highlighted ten recommendations: nine recommendations for the JRC and one more general recommendation to the European Commission. In the executive summary of the report the panel considered the overall thrust of the recommendations and regrouped them under the headings “know your business”, “set your priorities” and “live your strategy”. For convenience this chapter presents a clean listing of the recommendations in the order in which they appear in the main text of the report.

- The JRC should give more room in its programme to proactive subjects related to new, improved and holistic policy developments. It should also continue to capitalise on its European added value, i.e. looking at issues from inside the Commission with a common European point of view, taking on board as many scientific disciplines and macro view points as necessary to reach authoritative conclusions.
- The JRC should establish how much resources it has to assign to maintain a scientific basis broad enough to carry out its mission properly in the different areas and for the different activities. The proportion science/policy support has to be established periodically for the various activities, since it varies widely across the range of JRC’s activities.
- The JRC should start to distinguish its operational and routine services from scientific and research tasks. Although justified exceptions are always possible, the JRC should exclude the provision of operational services beyond an introductory phase as a matter of principle.
- The Commission should assist the JRC looking for possibilities to bring more flexibility in recruitment procedures, e.g. by introducing new types of temporal and permanent positions, giving the JRC more agility to engage seasoned scientists with a mature mix of science knowledge-ability and policy sensitivity.
- The JRC should develop a corporate strategy for its networking in the EU with a special eye for new member states and candidate countries as well as the global dimension. The strategy should be based on a corporate inventory of JRC networks in the various areas with an internal assessment of the benefits, the productivity and the long-term commitments associated with each one of them.
- To enhance visibility of the achievements and the impact of the organisation, the panel recommends that the JRC should investigate how it can improve its communications to the senior decision making level in the EU and in the member states.
- For the future the JRC should start branding itself consistently, based on a set of key tasks for scientific and technical support to EU policies as they follow from the mission. The panel recommends making an inventory of JRC activities that produce context-sensitive scientific knowledge for this policy support, and establish where it should promote institutional permeability between science and society to give authority to the information that it feeds into the policy process.
- To ensure focusing on the priorities in the programming the panel recommends to apply a standard framework of criteria for ranking the activities of the JRC periodically and to achieve a discontinuation rate of

10% through de-selection of the lowest ranking activities. The suggested four ranking criteria are:

- the activity's contribution to knowledge creation and policy support,
 - its European added value,
 - the uniqueness of the JRC for the activity, and
 - its cost effectiveness
- The JRC should develop a vision and strategy for its role within the European Research Area putting particular emphasis on (i) integration, coordination and facilitating of scientific networks as well as on (ii) developing and maintaining European infrastructures and tools suitable for sustainability assessments.
 - Considering the importance of effective and transparent governance for the implementation of the new strategy with an effective representation of policy support stakeholders, the JRC should make a revision of its governance based on an open review of the relevant bodies, structures, mechanisms and processes for consultation and decision-making in the planning and programming of the JRC.

ANNEX I

Terms of reference of the evaluation

1 Introduction

The legal provisions in the Seventh Framework Programme⁸ (FP7) of the European Community require an interim evaluation of the JRC activities before the end of 2010. In addition, the ex-post evaluation⁹ of FP6 recommended the JRC to start using smaller, sectoral, competence-oriented evaluations rather than the “traditional” single evaluation of the whole programme.

To combine these requirements the JRC is implementing the interim evaluation in two stages. In the first stage, implemented in the summer of 2010, five expert panels carry out five thematic external evaluations. These five evaluations provide an aggregated evidence base for the second stage of the exercise, the actual interim evaluation implemented as a meta-evaluation of the five thematic evaluations.

An *ad hoc* thematic structure has been fixed for this two stage process consisting of five sectoral, competence-oriented themes, as follows:

- Energy and transport
- Sustainable management of natural resources
- Contribution to the Lisbon agenda
- Safety of food and consumer products
- Security and anti-fraud

The current terms of reference describe the actual interim evaluation in which an expert panel will make a meta-evaluation using the findings of the five thematic evaluations to draw conclusions and make recommendations for the JRC’s non-nuclear programme.

The evaluation will be carried out by the chairpersons of the five thematic evaluation panels before the deadline of the end of the year 2010.

N.B. Encouraged by relevant recommendations in the FP6 ex-post evaluation, the JRC is going through a process of strategy development. Hence, the evaluation takes place in the perspective of the developing corporate strategy.

⁸ Decision (1982/2006/EC) of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013), Official Journal of the European Union L 412/1.

⁹ Ex-post Evaluation, Joint Research Centre Direct Actions in the 6th Framework Programmes (2002-2006), Final Report September 2008 and the response from the Commission: “Ex-post evaluation of the Direct Actions under the Sixth Framework Programmes for Research Technology Development and Demonstration carried out by the Joint Research Centre”, SEC(2008)3105.

2 Mandate, deliverables and timetable

2.1 Legal basis

Article 7.2 of the EC FP7 legal text⁸ contains the following provision for the interim evaluation: “No later than 2010, the Commission shall carry out, with the assistance of external experts, an evidence-based interim evaluation of this Framework Programme and its specific programmes building upon the ex-post evaluation of the Sixth Framework Programme. This evaluation shall cover the quality of the research activities under way, as well as the quality of implementation and management, and progress towards the objectives set.”

Specific inter-institutional and Commission requirements further frame this evaluation; in particular those related to the Financial Regulation (Article 27.4), the Implementing Rules (Article 27.3)¹⁰ and the evaluation standards in the Commission¹¹.

2.2 Objectives and scope

The overall objective of this interim evaluation is to establish fact-based answers to the evaluation questions set out in section 2.3. They have been formulated to capture various aspects of an interim evaluation and cover the characteristic backwards and forward looking components.

The purpose of looking back is to assess to what degree the JRC programme was implemented effectively and efficiently, whereas the forward looking component aims at helping the JRC with the continuous improvement of its science-based policy support. This will provide its senior management with orientations for the remaining part of FP7 (2011-2013) as well as for the preparation of the JRC’s part in the next EC Framework Programme (2013 - 2020).

This interim evaluation covers the non-nuclear JRC activities carried out under the Seventh EC Framework Programme in the years 2007-2010.

2.3 Evaluation questions

The interim evaluation should provide substantive answers to the evaluation questions listed hereafter:

Rationale/Relevance

- i) To what extent are the objectives and the approach in the five non-nuclear thematic areas pertinent to the needs and problems of European policy makers?
- ii) To what extent is the policy support work based on relevant, sound and innovative science results?

¹⁰ Council Regulation (EC, Euratom) No 1995/2006 of 13 December 2006 amending Regulation (EC, Euratom) No 1605/2002 on the Financial Regulation applicable to the general budget of the European Communities (O) L 390 of 30.12.2006, p. 1) and Commission Regulation no. 478/2007 of 23 April 2007, amending Commission Regulation no. 2342/2002 (O) L 111 of 28.4.2007, p.1).

¹¹ “Responding to Strategic Needs: Reinforcing the use of evaluation”, SEC(2007)213 http://ec.europa.eu/dgs/secretariat_general/evaluation/docs/eval_comm_sec_2007_213_en.pdf.

- iii) To what extent do the JRC activities in the five non-nuclear thematic areas provide (Community) added value? (or in other words “is the JRC the place to carry out the work”?)
- iv) How does this added value compare to the baseline options, i.e. no EU-policy/no change from FP6 to FP7?

Implementation

- v) To what extent does the JRC has the competences required for achieving its objectives set in the context of the EC FP7?
- vi) To what extent is the level of funding for the different thematic areas and for the programme as a whole adequate to achieve JRC’s objectives set in the context of the EC FP7?
- vii) To what extent are the facilities of the JRC appropriate for achieving its objectives set in the context of the EC FP7?
- viii) To what extent does the JRC run its activities in a cost-effective manner?
- ix) Are the arrangements for planning, monitoring, reporting and evaluation appropriate and effective? Are they transparent?
- x) To what extent does the JRC give a follow-up to the recommendations of the JRC FP6 ex-post evaluation⁹?

Achievements and performance level

- xi) What are the indications in the early outcomes of the activities that the overall and specific objectives of the EC FP7 can be met?
- xii) Referring to the consideration of the Council Decisions (“whereas” clauses) to what extent do the FP7 direct actions
 - a) Provide customer-driven support to European policy makers?
 - b) Engage in international cooperation activities for implementing the JRC programme?
 - c) Promote the integration of New Member States’ /Candidate Countries’ organisations and researchers in their activities in particular on the implementation of the S&T components of the *acquis communautaire*?
- xiii) To what degree do the activities support the creation of the European Research Area, e.g. through provision of access to JRC’s facilities and contribution to the mobility and training of (young) researchers?
- xiv) To what degree did the JRC participate in networking activities under the indirect actions of FP7 and what is the level of the network partners?
- xv) From an expert point of view, how does the work in the various areas compare to similar work done at top organisations in the relevant fields?

Forward looking

- xvi) What options should be explored for the future orientation of the thematic areas and the overall non-nuclear activities of the JRC in view of the Europe 2020 strategy¹²?

¹² EUROPE 2020, A strategy for smart, sustainable and inclusive growth, COM(2010) 2020 final.

2.4 Deliverables and timetable

The panel will address its final evaluation report to the JRC before the end of 2010. It will present its findings to the JRC Board of Governors, if possible at its meeting on 18/19 November 2010.

The report will count a maximum of 30 pages, excluding annexes, with an analysis of findings and a set of conclusions and recommendations based on evidence. It should be prefaced by an executive summary, not exceeding five pages.

The JRC will make the final report publicly available.

As regards the timing, the meta-evaluation can start as soon as the draft final reports are available, but not later than 15 October 2010. After the kick-off meeting the panel may meet as often as necessary to produce the final report in time before the end of 2010.

3 Working method

The meta-evaluation should contain the following elements:

- General study of the evidence base, i.e. the five thematic evaluations reports.
- Cross-sectional analysis of the responses to the individual evaluative questions.
- Cross-sectional analysis of findings and recommendations in the thematic evaluation reports.
- Reaching agreement on aggregated responses to the evaluative questions at programme level.
- Formulation of main findings, conclusions and recommendations in the final report of the JRC FP7 EC interim evaluation.

At the kick-off meeting the chair decides on the panel's detailed implementation of these elements to achieve the overall objective of the evaluation, i.e. to establish fact-based findings in response to the evaluation questions set out in section 2.3.

If necessary the panel will hold one or more other meetings to arrive at conclusions, formulate recommendations and agree on the final text of the report.

The rapporteur will take responsibility for preparing (compiling and editing) the final report, based on all members' (written) contributions and of relevant material and events identified by the panel members and/or the JRC. The rapporteur will draft summaries of the discussions held at meetings.

The JRC will make staff available to support the work of the panel, e.g. through the collection and distribution of factual evidence for the production of the report. They will be in regular liaison with the members of the panel and notably the chair and the rapporteur to ensure the smooth running of the work

of the panel. They will attend the meetings and provide information and orientations if requested.

The evaluation will be designed and carried out in line with the relevant Commission standards for evaluation (cf. Section 2.1) and subject to the quality assessment criteria.

4 Panel of Experts, the evidence-base and expert support

4.1 Composition

The panel is composed of the chairpersons of the five panels, each of which has been set up according to the terms of reference for the establishment of a panel of experts to carry out a thematic evaluation. The Director General of the JRC selects the person who chairs the meta-evaluation panel. In addition to the five experts the panel will include a highly qualified rapporteur.

4.2 Evidence-base

The panel will carry out its activities through an evidence-based process. The JRC will provide the panel with all necessary information, in particular the draft reports from the thematic evaluations plus all underlying background material. This constitutes the evidence base for the meta-evaluation.

4.3 Expert support

The panel may want to invite (an) independent expert(s) to fill in gaps in expertise also in the meta-evaluation stage and it may invite selected representatives of the customers and stakeholders (e.g. European policy makers, beneficiaries of third party work) for an interview.

ANNEX II

Composition expert panels for the thematic evaluations

SECURITY AND ANTI-FRAUD

Reinhard POSCH (Chair)

Professor at the University of Technology Graz, Chief Information Officer for the Government of Austria; Chairman of the board of ENISA

Dimitris GRITZALIS

Associate Professor of ICT Security, Director of the Information Security and Critical Infrastructure Protection Research, Athens University, Greece

Paul KORTING

General Director of TNO Science and Industry

Veikko ROUHAINEN

Research Professor, Coordinator Safety and Security, Industrial Risk Management, VTT

Brigitte SERREAUULT

Vice-President Research & Technology, EADS Astrium

SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES

Peringe GRENNFELT (Chair)

Professor of atmospheric chemistry and air pollution strategies, University of Gothenburg; Senior Adviser IVL, Swedish Environmental Research Institute

Lea KAUPPI

Director General, Finish Environment Institute (SYKE)

Victor JETTEN

Professor Earth Surface Systems Analysis, University of Twente, The Netherlands

Stella MICHAELIDOU-CANNA

Retired Director of the State General Laboratory and Acting Permanent Secretary Ministry of Health, Cyprus

Bedrich MOLDAN

Professor Environmental Science, Charles University Environment Centre, Member Czech Parliament

Jean-François SOUSSANA

Scientific Director, INRA, Paris

ENERGY AND TRANSPORT

Jeroen VAN DER VEER (Chair)

Former Chief Executive of Royal Dutch Shell, currently non-executive director of Shell plc

Claudia KEMFERT

Professor of energy and sustainability and Head of department Energy, transportation and environment; DIW Berlin

David CLARKE

CEO Energy Technologies Institute, UK

Henrik BINDSLEV

Director of Risø National Laboratory for Sustainable Energy, Technical University of Denmark

Antonio LUQUE

Director Institute for Solar Energy; Professor of electronic technology, Universidad of Madrid

SAFETY OF FOOD AND CONSUMER PRODUCTS

Tamara LAH TURNŠEK (Chair)

Professor at the University of Ljubljana, Director, National Institute of Biology

Jana HAJŠLOVA

Professor food chemistry and analysis, Institute of Chemical Technology Prague

Gernot KLOTZ

Executive Director for Research and Innovation for the European Chemical Industry Council (CEFIC), Brussels

Danuta KORADECKA

Professor of medical science, Director of the Central Institute for Labour Protection, National Research Institute, Warsaw

CONTRIBUTION TO THE LISBON AGENDA

Reinhilde VEUGELERS (Chair)

Professor, Faculty of Economics and Business, Katholieke Universiteit Leuven

Wolfgang DRECHSLER

Professor and Chair of Governance, Tallinn University of Technology, Estonia

Gonzalo LEÓN

Professor, Vice President for Research, Universidad Politécnica de Madrid

Paul HOFHEINZ

President, The Lisbon Council Asbl, Brussels

ANNEX III

Reference documents

Programme documents

- Decision (1982/2006/EC) of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013), Official Journal of the European Union L 412/1
- The Council Decision of 19 December 2006 concerning the Specific Programme to be carried out by means of direct actions by the Joint Research Centre under the Seventh Framework Programme of the European Community (Euratom) for research, technological development and demonstration activities (2007 to 2013) (2006/975/EC)
- The JRC Multi-Annual Work Programme (2007-2013)
- The JRC Annual Work Programmes 2007, 2008, 2009 and 2010.

Reports and background documents

- The JRC Annual Reports 2007, 2008 and 2009
- Ex-post Evaluation of Joint Research Centre (JRC) Direct Actions in the 6th Framework Programmes 2002-2006, Final Report, September 2008 and the Commission's response, SEC(2008)3105
- Interim evaluation of the direct actions of the Joint Research Centre (JRC) under the Seventh Euratom Framework Programme (2007-2011), Final report February 2010
- "Facts and Figures on the activities of the Joint Research Centre under the Seventh Framework Programme" for the interim evaluation of FP7
- JRC Customer Satisfaction Survey, Final Report 2008
- "Robust Science for Policy Making: A guideline towards integrity and veracity in scientific support and advice", Board of Governors, document CA(06)55
- Follow-up Recommendations "King Report", JRC response to Board Action 87.1, Status February 2010, CA(10)4-1
- Synthesis Report on the JRC Infrastructures, JRC internal report
- JRC Strategy 2010-2020: Summary (ISBN-13:978-92-79-16044-8)
- Europe 2020: A strategy for smart, sustainable and inclusive growth COM(2010)2020

