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The mid-term evaluation of the implementation of measures in favour of R&D and higher education in the framework of the EU co-financed Structural Funds during the period 2007-13

Executive Summary

Commissioned by the Estonian Ministry of Education and Research

Tartu, October 2011

The report is a reflection of personal views and evaluations of the authors. The conclusions presented might not concur with the views of the Estonian Ministry of Education and Research. The project was supported by the European Commission Structural Funds.

The mid-term evaluation of the implementation of measures in favour of R&D and higher education in the framework of the EU co-financed Structural Funds during the period 2007-13 was structured around a number of key evaluation questions. The evaluation team sought to address each of these questions both specifically and with a view to providing an overall response to the layman's query of "what difference has all that EU funding made".

The conclusions presented in this section of the report are based on the quantitative and qualitative evidence gathered during the first two phases of the evaluation namely: an appraisal of the strategic programming and management of the Structural Funds (phase 1); and a review of the implementation of measures including the application process and monitoring system and case studies to examine evidence at a more disaggregated level (phase 2).

During the final phase of the evaluation, a policy workshop was organised in Tallinn which brought together officials from the relevant ministries and implementing agencies, beneficiaries and three international experts selected for their knowledge of HE and R&D policies in the context of small northern European countries and Structural Fund programming. The workshop provided an opportunity for a debate on the preliminary conclusions and the remarks and feedback from the participants helped to 'distil' the findings into a number of strategic and operational recommendations.

It can be summarised that the R&D and higher education measures support effectively reaching the strategic objectives of HE and R&D strategies. The indicators set in the OPs of Human Resources and Economic Development will mostly be reached, hence the main strategic objectives of HE and R&D and innovation strategies, which at the same time are the main objectives of NSRF, will most probably not be reached. Also, the planning and implementation of the higher education and R&D measures has been done rather well.

The conclusions for the six evaluation questions are summarised in the table below.

Table 1. Summary of main conclusions per evaluation questions

Evaluation question	Main conclusions
Is the current set of the SF (and other) measures suitable and sufficient for the fulfilment of the objectives of HE and R&D strategies and of the SF OPs? If not, what additional measures are necessary in the current programming period?	<p>The set of measures can be considered as sufficient to fulfil the objectives. However, the programme suffers from poorly articulated intervention logic. An inappropriate sequencing in the operational implementation of measures compounds this weakness.</p> <p>The evaluation team do not consider it necessary to introduce additional measures in the current programming period. Rather, the focus should be on the effective management of the current measures and, in particular, ensuring adequate progress with the thematic programmes.</p> <p>The evaluation team considers that the set of indicators proposed for the OPs was formalistic to support strategic management. The targets for output and result indicators were often set too conservatively, meaning that they will be comfortably attained. At the same time, the strategic objectives of the HE and R&D strategies</p>

	expressed in NSRF will most probably not be reached.
What are the best practices in the programming of the HE and R&D measures? What are the main reasons of the success?	<p>The multi-annual budget framework of the Structural Funds was instrumental in ensuring a stable development of the HE and R&D system, despite the unforeseeable financial crisis.</p> <p>The Structural Fund measures have contributed to overcoming key obstacles to the development of a more competitive HE and R&D system.</p> <p>A key element of success has been the accumulation of experience at all levels (ministry, agencies, beneficiaries) of the HE and R&D system.</p> <p>The Centres of Excellence and researchers' mobility measures can be regarded as the most effective and successful measures. Supporting of these measures should be continued in future.</p>
What are the reasons of the slower than planned launching of the HE and R&D policy measures? What mistakes have been made in the planning of the actions and financial objectives; in the programming and implementation of the measures?	<p>A critical issue that has slowed implementation is an overly high number of measures. At a strategic level, the Ministry did not have the capacity to design and launch the range of measures rapidly enough or in a logical sequence.</p> <p>The high number of measures also led to an excessive administrative burden on both applicants and the implementing agency.</p> <p>In the implementing agency, this resulted in a lack of understanding of the potential for synergies between different measures.</p> <p>For the applicants, efficiency was reduced by the need to source funds for a "single project" from various potentially complementary measures.</p> <p>The monitoring system has not provided sufficiently strategic information to allow corrective decisions to be made in a timely fashion by the monitoring committee.</p>
Do the delays in the payments pose any risks to the actual achievement of the SF objectives and/or to the utilisation of the resources available?	In part due to the conservative target setting, the delays in payments are unlikely to put at risk the achievement of the original goals. It should also be underlined that the commitment rate for most measures is significant and that many of the major (in financial terms) measures are well advanced.

	<p>The main risk in terms of under-utilisation of resources lies in the area of thematic programmes, which are the weakest element in terms of implementation despite being a core element of the R&D and HE strategies.</p> <p>As the end of the current programming period approaches, there is a significant risk that a funding 'hiatus' will undermine the sustainability of the investments made in both research infrastructure and soft measures (doctoral schools, mobility schemes, etc.).</p>
<p>How can the implementation of the HE and R&D policy measures be speeded up, so that the objectives would be met and the resources would be wisely spent?</p>	<p>Implementation of projects has been slowed down by a number of factors related to the bureaucratic regulation of funding and insufficient support from the implementing agency.</p> <p>The implementing agency needs to increase 'process' support to applicants (enhancing information and publicity activities, coaching applicants) and assist participants in resolving more complex procedural issues (e.g. public procurement rules, meeting accounting/audit standards, etc.)</p> <p>Over-precise rules on eligible activities limit the applicants flexibility in designing and planning the most appropriate actions to reach the objectives of the measures.</p> <p>The slow refunding process of participants costs is penalising for smaller organisations with limited financial liquidity and self-financing capacity and hence, inadvertently, limits participation in the programme to the 'usual suspects'.</p>
<p>How can the HE and R&DI policy measures made more effective/efficient in the next planning period? What are the recommendations for the design of the measures and the choice of the programme modalities in order to overcome the current difficulties?</p>	<p>The current period has been focused on developing R&D and HE infrastructure with insufficient attention to complementary efforts to optimise the return on investment, e.g. by developing strategic research units operating the new. The existing fragmented financing scheme, where the financing decisions of infrastructure investments and scientific needs are made separately, do not guarantee the coherent and sustainable financing of the infrastructure and science capacities. More paid attention should be paid to the investments into human resources.</p>

	<p>Despite a good working relationship at inter-ministerial level and at the implementation level there remains insufficient alignment and co-ordination of the HE and R&D measures with each other and with the related enterprise and innovation policy.</p> <p>A number of critical challenging influencing the future performance of the HE and R&D systems are still not addressed adequately by the current SF OPs. Recommendations based on these conclusions are made in the next section.</p>
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The six evaluation questions can be summarised in temporal terms into:

“what has been done (badly or well) to date”,

“what could be done in the short-term (in the current period) to optimise the use of available resources” and

“what lessons can be drawn for the longer-term” (the next programming period and the Europe/Estonia 2020 strategies)

In terms of **what has been done**, it is important to underline that Structural Funds have provided a major boost to the HE and R&D funding system in Estonia. The funds available have been invested in both ‘capital’ (infrastructure, people) and processes (fostering new methods, new partnerships, etc.).

In a number of cases, the SF has clearly reinforced existing scientific or educational ‘excellence’ helping to create a stronger basis for higher quality research or teaching activities. This is the case with the Centres of Excellence programme that was ‘rolled-over’ from the previous programming period. The importance of continuity of programming is clear in the operational efficiency of the CoE programme, which has managed to avoid some of the administrative difficulties faced by newer measures.

Against this positive backdrop, there is a, however, a set of more ‘mixed messages’ that arises from the implementation of the SF measures. The first is a form of paradox in the sense that Estonia had, in 2007, two coherent and interlinked strategies for HE and R&D (and innovation), yet the operational deployment of these policies has been done in a fragmented and often sub-optimal manner in terms of the sequencing of implementation through the SF. Examples include strategic issues of sequencing such as launching of a policy research programme in the latter half, when it could have usefully informed and support the development of measures if launched from day one; or decisions on investment in research infrastructures prior to the adoption of a national research infrastructure roadmap. Other more operational level difficulties have slowed implementation, generated uncertainty and frustration for project sponsors and generated administrative costs of compliance with financial reporting or auditing procedures that outweigh the likely benefit.

Considering **what could be done** in the current programming period to improve effectiveness of SF supported policy measures, the issues can be split between more strategic misalignments and operational inefficiencies.

In terms of strategic issues, it is clear that the implementation of the OPs has failed to address sufficiently the expected thematic targeting of funding. The evaluation team were unable to assess the extent to which overall funding was focused on the thematic priorities of the Knowledge Based Estonia II strategy. More fundamentally, the major delay in implementation concerns precisely the launch of the thematic technology programmes.

The operational issues raised during the fieldwork by implementing bodies and beneficiaries include the complexity and burdensome financial procedures, an overly restrictive approach to defining eligible expenditures, the lack of capacity in the first level implementing bodies and a reactive 'ex-post control' approach to project supervision.

The **lesson for the future** programming period can be articulated around the need to reduce the total number of measures to ensure that project applicants can bid for funding that enables the implementation of a related set of activities to attain a specific outcome. A stronger thematic focusing of intervention, promised but not delivered in the current period, would also improve the 'readability' of the intervention logic and enable 'consortiums' of operators to bid for funding to implement complementary and interlinked projects in specific fields of educational or R&D.

Anticipating future challenges: R&D and Higher Education policies in the context of Estonia 2020

The current programming period provides a strong foundation for future policy design and delivery by the MoER and its agencies. There is a broad consensus amongst policy-makers and beneficiaries interviewed, and indeed more broadly if conclusions of foresight and other studies are reviewed, on the challenges that need to be overcome for Estonia to follow a sustainable path of development. Strategic policy objectives and targets have remained relatively constant over the last decade and the recently adopted Estonia 2020 strategy has not challenged the prevailing 'orthodoxy'. Work will begin shortly on renewing the current research and innovation strategy (which will be a 'conditionality' for ERDF support, in all likelihood, for the future programming period). Estonia has a good track record of R&D&I and HE strategy development over the last decade, that has certainly been more structured and coherent than other 'new Member States'.

However, the experience of Ireland, presented during the evaluation workshop, is one example that 'producing good strategies' does not always lead to coherent or effective implementation of policies. Estonia is, at least in macroeconomic terms, in a more favourable position than many other Eurozone countries and has outperformed its neighbours from the Baltic Sea region in terms of trends in R&D expenditure growth and innovation performance (e.g. as measured by European Innovation Scoreboard) and higher education performance (e.g. PISA results). Yet there is little room for complacency.

While there has been a steady increase in the R&D intensity of the economy, the economic structure (in terms of the share of high-tech manufacturing or knowledge intensive services in total employment or value added) has barely changed in the last decade. The discussions at the closing policy workshop put a spotlight on the need to boost further HE-research-business co-operation. Both the measures of the HTM (joint curricula development, etc.) and particularly those of the MKM (competence centres, Spinno, clusters, etc.) have sought to strengthen knowledge transfer and co-operation in the 'national innovation system'. Yet the degree of synergies between the various measures is not always evident. A further 'cultural' shift is required to avoid fragmentation of effort and develop permanent 'platforms' that articulate demand (from the business side) and structure the knowledge transfer from the HE/research sector. The Norwegian case presented during the workshop underlined that an economy dominated by 'low-tech' sectors can also be a knowledge intensive economy. Ensuring, for instance, that the clusters promoted by MKM articulate needs for future qualifications in the sectors concerned and that this feeds into curricula development in measures supported by the HTM is one example of greater articulation of SF supported programming. Equally, the experience of the competence centre programme has shown that business can drive a 'research agenda' (create a demand for scientific research) and there is a need to consider ways in which a broader range of companies can be encouraged to invest jointly with the HE/research institutions in projects.

On the higher education front, the reforms of higher education and increased investment have led to improvements in teaching methods and capacities, yet the education sector is facing an imminent demographic crunch that is not fully integrated in the strategies of the HEI. The need to retain those educated in Estonia to third-level standards is clear but that alone is not sufficient and the internationalisation of the higher education system (and economy in general) through the attraction of students (and skilled employees) must remain a priority. At the same time, the mobility programmes launched during this period have worked best in sending people out (for short-term periods) rather than bringing people in to the country (potentially for longer terms including professors or researchers). The lessons of the current period suggest that both more flexible funding measures (removing the distinction between support for teaching and research mobility) and increased promotion and marketing of Estonia as a place of study and work is required to attract the 'creative classes'. The investments into research infrastructure in the current period need to be managed strategically to create niche 'laboratories of excellence' linked to doctoral and post-graduate studies that are attractive places for senior researchers to move to from abroad. However, better facilities are a necessary but not a sufficient condition for attracting talent, the academic recruitment, promotion and incentive system needs a further overhaul if Estonia is to truly compete with neighbouring Nordic countries for 'top people'.

Recommendations

Based on the conclusions of the evaluation and drawing on the discussion during the policy workshop, three sets of recommendations are proposed.

1. Enhancing operational efficiency

1.1. From administrative burden to performance contracts

The current administrative system for applications, defining eligible activities and financial reporting stifles initiative rather than maximising the room for manoeuvre of applicants to define actions that optimise the outcomes achievable through the SF interventions.

The evaluation team recommend that future programming procedures should adopt a 'performance contract' approach where applicants commit to achieving a specified set of outcomes within a defined budget and timescale. The operational 'how' (activities, capital versus personnel costs, eligible expenditure, etc.) should then be a matter for the operators to define on a rolling and flexible basis (reallocation between budget lines, etc.). This does not discount the need to meet required standards of financial reporting, respect of State Aid rules, etc., however it would the primary reporting obligation of projects would shift from "satisfying auditors" to reporting on outcomes.

1.2. From ex-post controls to portfolio management

In line with the above recommendation, there is a need to shift resources within the implementing agencies from a 'controller' function to a pro-active advisory role for applicants and operators. The experience of 'portfolio management' of the Scottish ERDF/ESF programmes presented during the workshop is one that could be usefully transferred and applied to the Estonian situation. Close and regular monitoring of approved projects by the MA/IB is essential to develop constructive relationship with the project sponsor. This approach enhances the ability to intervene and take corrective action and also fosters opportunity for ongoing project development and thereby a future pipeline of funding applications. The strengthened monitoring system suggested in the evaluation could be inspired by the Scottish portfolio management approach.

In the short-term, the evaluation recommends that a dedicated SF help-desk should be created within the implementing body in order to respond to and solve non-standard implementation problems. The help-desk should organise 'information/training sessions on best practice examples of financial management by projects and provide FAQ on how to deal with common financial issues.

The excessive level of detail of financial controls slows payments to project sponsors and generates significant costs in terms of the cost-benefit of this financial control and auditing needs to be weighed up. It could be considered to certificate the bigger and more complex project promoters by the implementing agency. The implementing agency would need to analyze the implementation and control systems of the project promoter in order to be convinced the project promoter has appropriate analytical accounting systems in place. For the certified project promoters the light payment orders check can be applied in order to speed up the disbursement process and reduce the administrative burden.

2. Delivering on strategic objectives

2.1. Improving the process of programme design and revision

The process of strategy development for 2014-2020 period will begin shortly. The adoption of the Estonia 2020 strategy provides an overall framework that should be used for the 're-design' of the current Knowledge Based Estonia and Higher Education strategies. It may be advisable to consider developing a single 'knowledge triangle' strategy that would bring together in a more consolidated whole the research-innovation-education strategies and provide a framework for a more articulated set of interventions programming.

As a significant in-house increase in staff at the Ministry is unlikely and in order to avoid bottlenecks in designing and launching measures, an increased 'sourcing' of external expertise should be sought. This could take several forms. Firstly, the HTM should learn from the experience of the MKM, which has commissioned feasibility studies and background analysis for most programmes it has launched over the last decade. Secondly, the recently launched TIPS measure should provide a stream of relevant analysis in the coming year. However, for these studies to provide real input to the policy making cycle implies that the relevant ministries (HTM, MKM) should steer and guide the research teams towards topics of critical policy importance and have the in-house capacity to turn 'academic' findings into policy relevant conclusions. Thirdly, an enhanced consultation with a broader range of stakeholders (notably including the business sector) should be organised with a view to pre-defining a number of 'major bundles of related projects' in advance of the next programming round.

2.2. Implementing the long-promised thematic programmes

For the current period, a main priority for the HTM should be to deliver on the promised thematic technology programmes. If it is still planned for these programmes to be co-financed by the SF, technical assistance budgets should be used to bring in the required 'manpower' to design and launch them programmes and pro-actively manage their implementation.

The evaluation team recommend that the next round of SF support for higher education, research and innovation (and enterprise policy) should be structured around (i.e. the majority if not all funding available should be concentrated in priority fields) a limited number of thematic programmes that would provide funding for an inter-linked portfolio of projects contributing to an action plan defined by a 'partnership'.

Finally, the evaluation team consider that the future Structural Fund support should be used for capability building in areas of R&D and innovation in emerging new fields of S&T or for addressing societal challenges than for 'routine' research funding.

2.3. Fostering experimentation and emergence of new operators

The evaluation underlined that there are at least two factors encouraging 'lock-in' in the current programming procedures. Firstly, the focusing of funding on existing recognised fields of excellence (in HE or research) risks to weaken the possibility for projects in newer or emerging fields and

research or educational units to emerge. The counter-argument is the need to build up critical mass and internationally recognised centres of excellence. Secondly, the current funding procedures tend to favour those (larger) institutions that have sufficiently 'deep pockets' to be able to pre-finance projects. Encouraging experimentation and the development or emergence of new project sponsors in the system (or new forms of partnership) should be given more room, if not in the current programme, then in future programming. The European Commission is known to be considering re-launching the concept of innovative actions (funded under the ERDF during the 2000-2006 period in the EU15 regions) and whether this happens or not, the possibility of allocating competitively funding (including advance payments) for 'pilot projects' that would create a basis for new approaches and a 'project pipeline' should be considered.

2.4. Reinforcing and redesigning the monitoring system

The evaluation process has underlined the inappropriate nature of the indicators, target setting and monitoring system with respect to the assessment of the contribution of SF measures to broader strategic goals.

An indicator system should enable first and foremost the programme managers (IB) and management authority to monitor progress towards objectives (outcomes) rather than only count progress in implementing activities through expenditure and 'results' (new research lab floor space, people trained, etc.). An indicator system that provides 'strategic intelligence' depends on an improved intervention logic (see recommendation 0 above) being articulated so that indicators can be designed for each evaluation criteria and the link between outputs/results and outcomes more clearly articulated. It could be considered to compile the logical framework matrix for every priority axis/measure/programme.

The European Commission is known to be revising its guidance on indicators to refocus on outcome indicators in line with an enhanced strategic monitoring of programmes. For the current period, while the 'official' programme indicators may need to remain unchanged for 'administrative' reasons, there is nothing to stop the MoER developing, eventually through a process of consultation with project sponsors and/or by commissioning a study, a more adequate set of outcome indicators for its measures that would although a proper 'impact assessment' to be undertaken by say end 2013 or early 2014.