WORKING PAPER

Future of manufacturing

Development of Clusters – Internationalisation policy measure (Estonia)

Born globals and their value chains

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1. Context

1.1. Circumstances in which the measure was introduced, rationale, and relevance

According to the regulation on the policy measure of Development of Clusters (in Estonian) and its explanatory memorandum (in Estonian), Development of Clusters is a support action that was created under the measure 'Increasing a local socioeconomic impact of the R&D and innovation and smart specialisation to develop growth areas (information and communications technology (ICT), healthcare technology and services, more efficient use of resources)' within the framework of the Operational Programme for Cohesion Policy Funding 2014–2020 (henceforth 2014–20 OP). The two main objectives of the 2014–20 OP determine the expected impacts of the development of clusters: support from the European Structural and Investment Funds (henceforth ESIF) should contribute to the development of the knowledge-based economy and the ability of Estonian enterprises to offer innovative, high value-added products and services.

According to the explanatory memorandum to the regulation, the development of clusters is closely connected with Estonia's competitiveness strategy 'National Reform Programme Estonia 2020', whose objectives include the increase of productivity and the share of Estonian exports. Enterprises could achieve long-term improvement of their competitiveness by focusing on producing higher value-added products. However, Estonian enterprises face several obstacles in moving up the value chain: 89% of Estonian enterprises are small and medium-sized enterprises (SMEs) that are short of knowledge, skills, networks and financial capacity to be successful on the international market; cooperation with educational and research institutions and networking between enterprises in Estonia are not effective. Successful international actions, however, rely on joint actions and smooth cooperation between different partners. Therefore, effective networks between enterprises and cooperation with educational and R&D institutions are necessary to achieve economies of scale on export markets, create a competitive brand, concentrate resources, add knowledge for developing innovation, and perform development and marketing activities. Therefore, the focus of the measure is to support and develop cooperation between actors in order to increase international competitiveness through joint activities (MoEAC, 2008).

Before the new programming period of ESIF 2014–2020, the European Commission drew up a Smart Specialisation Initiative to identify growth areas that have the highest competitive advantage for each member state. In Estonia the following specialisation areas were identified: ICT horizontally via other sectors; health technology and services; and a more efficient use of resources. The measure 'Development of clusters' is intended to support the realisation of the potential of the aforementioned growth areas.

Implementing the regulation of the development of clusters should contribute to the result indicators for two out of four specific objectives corresponding to the investment priority of the 2014–20 OP under priority axis no. 4 'Growth-capable entrepreneurship and RD&I supporting it': (1) RD&I makes the structure of the economy more knowledge-intensive and addresses societal challenges, and (2) Estonian enterprises offer innovative products and services with high value added; and also to one of the output indicators ('Increased number of entrepreneurs contributing to growth areas of smart specialisation in the cluster') of the same priority axis (Rahandusministeerium, 2014).

1.2. The process of developing the measure

The measure was launched in 2008. The idea of the measure was based on the practices in Scandinavian countries, where the cooperation and networking culture has developed for a much longer period. The creation of this measure was facilitated by the financial support of ESIF. The Ministry of Economic Affairs and Communications (henceforth MoEAC) was the initiator; the programme was developed in collaboration with professional associations, and the process involved study trips to Scandinavian countries and Spain among others. The city of Tallinn participated as well

and it co-financed the Tallinn clusters. People responsible for the measure took care of informing future applicants about the essence of the clusters and their working principles.

A new regulation on the development of clusters was issued in 2015 within the framework of the 2014–20 OP. According to its explanatory memorandum, the new regulation was drafted by the MoEAC in close cooperation with the implementing agency for the measure – Enterprise Estonia (henceforth EE), but also with other actors, such as the Estonian Development Fund (the support institution for the smart specialisation initiative), representatives of enterprises, and partners and employees of various cluster organisations.

1.3. Any changes in policy context over time

Since 2008, when the measure was introduced, there were two funding periods of ESIF (2007–2013/2014–2020) that divided the design and implementation processes into two parts. This allowed the administrator to review the whole design of the measure to better incorporate experience and feedback of the clusters into the development of the regulation for the 2014–20 OP.

The economic recession in 2008–2010 at the beginning of the implementation of the measure implied the need for some changes to the regulation of the measure (for more information see sections 2.2 and 4.2).

1.4. Evidence of complementarity and/or overlap between the measure and other policy measures

There are a few measures that share similarities with the cluster development measure, such as the 'Centres of competence' and the 'Investment aid to shared service and research & development centres', both of which are provided by EE (MoEAC, 2008). According to the interviewees, all measures offer cooperation platforms but their scopes do not overlap; the focus of the clusters in general is the development of business and particularly its internationalisation, whereas the focus of the centres of competence is on the technological capacity of regional enterprises and cooperation with research institutions, while the technology research and development centres focus on innovation and the development of products.

A range of other policy measures administered by EE (for example, the business mentoring programme, e-Estonia Showroom, creative industries development centres, contact trips to target markets, etc.) are considered useful for the internationalisation process, as cluster partners could apply for any of these measures according to their needs and the terms and conditions of the support scheme. For example, five partners of the Estonian Smart City Cluster used the measure 'national joint stands at foreign trade fairs' to participate to the Smart City Expo World Congress in Barcelona to introduce their innovative products, broaden their contact base and explore product offers from other companies (EAS, 2016).

The city of Tallinn provides non-financial support that can be considered as complementary to the measure since it offers additional options for cooperation and exchange of experience in the form of a cluster club (once a month) and a clusters' webpage. This support from Tallinn is intended for all Estonian clusters regardless of whether they received EE cluster support. In 2012–2014, the city of Tallinn provided clusters operating in the area's key fields of activity an opportunity to reduce the self-financing required for cluster projects. These prioritised fields of activity listed in the Tallinn Enterprise and Innovation Strategy 2014–2018 included the service economy, ICT, and future technologies, such as health and environmental technologies. Only full application projects that had been approved for financing by EE were eligible (see section 2.2 for additional information on full applications), whereas at least 50% of the businesses in the cluster had to be located in Harju county, where Tallinn is located. With the new cluster development regulation from 2015, any financial support from municipalities, state organisations and other organisations or funds in the EU cannot be regarded as part of the co-financing, and such organisations could support clusters by becoming cluster partners themselves. Therefore, the city of Tallinn cancelled its own financial support scheme.

As one of the interviewees stated, Tallinn did not become a direct partner of any cluster because it was rather difficult to give preference to any particular cluster within the prioritised fields of activity in Tallinn (based on the Tallinn Enterprise and Innovation Strategy). Instead, the city decided to focus on providing the aforementioned non-financial support.

2. Content

2.1. Objectives of the measure

According to EAS (2017) and the regulation, the objective of supporting clusters is to increase the international competitiveness of cluster partners through joint marketing and business development activities in the growth areas of smart specialisation: a) ICT horizontally through other sectors, b) health technologies and services, and c) a more efficient use of resources.

The implementation of the measure is expected to lead to increased cooperation between the enterprises themselves and between enterprises and other actors (such as R&D and educational institutions, third sector organisations, municipalities, etc.), and to support change in the way actors think in regard to cooperation and joint actions (including pooling resources).

The expected results from the implementation of each cluster project, as it is set in the regulation, are:

- Increased return on sales from the new or significantly altered products and services of cluster partners.
- Increased added value of cluster partners per employee.
- Increased number of entrepreneurs contributing to growth areas of smart specialisation in the cluster.
- Increased number of partners active in innovation-related cooperation in the cluster.

2.2. General description of the measure

Clusters as cooperation networks are expected to conduct joint international marketing activities and develop cooperation in order to help primarily SMEs, which make up the majority in Estonia, gain a stronger position outside the country (EAS, 2017).

Although the support measure provides financial support to clusters, only specific activities are regarded as eligible within the measure according to EAS (2017) and the regulation of 2015:

- **Implementing the development activities of the cluster**, including conducting research and using expert assessment to acquire sector or target market based knowledge concerning market demands, technical requirements, materials, functional characteristics of products, design and other similar aspects; improving processes, products and services or carrying out activities that facilitate the development of new processes, products and services; training and educating the workforce and mapping workforce needs; mapping technologies and equipment and coordinating those for more efficient (joint) use, determining the need for innovation and division of production capacities;
- **Conducting and coordinating the joint marketing activities of the cluster**, including target market research or expert assessments, using information sources and databases and conducting or participating in marketing events aimed at introducing the products and services of cluster partners;
- **Increasing international visibility and value**, including organising seminars, workshops, conferences and other events that are necessary for improving cooperation and getting new partners involved.

All cluster activities should support the international competitiveness of cluster partners and the improvement of their economic indicators. Therefore, activities should contribute to the internationalisation process of cluster partners either directly (such as by participating at international

fairs and joint marketing activities in target markets) or at least indirectly (for example, cooperation with national actors to develop products and services and increasing the knowledge and competences of cluster partners in order to perform better on foreign markets).

The types of activities supported are not limited to the list above. Clusters could conduct additional activities if they help to achieve the objectives of the cluster, and this provides flexibility for the grantees. An enterprise could join any supported cluster on an ongoing basis. Though in general the measure is created to support SMEs, large (including international) companies are partners in some clusters and that should empower the effectiveness of those clusters.

Table 1. Content of the measure by policy measure category

Category	**Description**
(Tailored) advice	Conducting research and using expert assessments (for example, expert services to support the certification process in order to increase international competitiveness, consultation of cluster employees in compiling various funding applications, and successful participation in international public procurement procedures)
Information provision, databases	Information exchange between cluster organisations and their partners, between cluster partners, and with other actors
Partnerships, networks, alliances and clusters	The measure supports the creation of clusters to enable various types of cooperation and networking to increase international competitiveness; among others, a cluster could support the participation of a cluster's representative in Estonian business delegations to foreign countries
Provision of education and training for entrepreneurs, managers or staff	Training and educating workforce within participating companies to increase knowledge and competences, also by involving international experts and trainers
Trade fairs and missions	Attending various international events, such as fairs, seminars, workshops, professional competitions, etc.
Image campaigns addressed at potential customers	For example, marketing materials to be used during various international events to promote cluster activities and cluster partners, systematic media communication in target markets, adverts on related websites, articles in professional and inflight magazines, thematic video productions, etc.
R&D, innovation and sectoral programmes	Through cooperation between cluster members; between enterprises or between enterprises and research institutions; conducting research and using expert assessments (for example, to conduct target market research, to research and develop service design from the foreign clients' perspective, to map foreign market entry conditions, contemporary technology, technological potential to improve the quality of products, and workforce needs)
Business environment and inter-country cooperation support	Cooperation support through direct financial support of the creation of clusters; also by having cluster partners from foreign countries to support international cooperation; the measure does not impose any restriction on international partners
Other types of support	For example, participating in legislation-related seminars to generate input for changing legal acts with the aim of remaining competitive in target markets, such as other EU countries; outsourcing the translation into Estonian or English of target market legal acts related to the clusters' fields of activity; purchasing

Category	Description
	intangible assets like software for designing marketing materials and software for coordinating joint purchases by cluster partners in order to enable them to procure production inputs at better prices; creating cluster websites and creating working groups in order to adapt the content of websites according to target markets' needs; organising international professional competitions in Estonia; and organising seminars in universities to support the supply of engineers)

Source: authors, compiled from a variety of sources cited in the present study; in addition Eesti Puitmajaliit MTÜ (2015); Estonian Defence Industry Association (no date); Spordimeditsiini Sihtasutus (2015)

Clusters are financed for a specific period (three years for first round grantees and two years for second round grantees in the period 2015–2020). Two rounds were planned initially for 2015–2020. However, due to the low amount of planned eligible expenditures among successful applications in the first round, an additional round was launched in 2016. All present clusters could participate in the third and final round in 2019 alongside new applicants.

The 2008–2013 period [1]

According to the regulation of 2008 (in Estonian), in 2008–2013 the application procedure was set up in two rounds. In the first round (known as pre-application), applications sought support for future cluster partners to map joint interests and cooperation types, find potential partners, and design joint strategies, objectives and action plans. Only after having a strategy and a plan for joint actions in place could the second round of applications (known as full application) be submitted to implement planned joint activities.

According to the regulations of 2008 and 2014 (in Estonian), the maximum amount of financial support was €26,000 in the pre-application and €130,000 in the full application. Up until 2013, there was no upper limit for financing full applications. This was only set in the final round of applications to allow for more projects to be financed under the limited resources. Financial support could cover up to 75% of the eligible costs in pre-applications and up to 70% in full applications. The share of financial support was increased from 60% to 70% in 2009, as a result of the decreased availability of capital for enterprises after the economic crisis. At least 40% and from 2009 at least 30% of the costs should have been covered by the participating companies themselves. At least 50% of this self-financing should have been covered by the partner enterprises themselves; up to 50% might have been covered by other cluster partners, such as municipalities or research institutions. Such a set-up was intended to motivate cluster partners to link cluster projects to regional development plans and R&D activities (MoEAC, 2008; MoEAC, 2009; MoEAC, 2013).

Starting from 2015

As the application rounds in the 2015–2020 period are a sequel to the first financial period (although the option for financing was open also to new clusters), the policy makers did not see any need for the pre-application option, according to the interviews conducted for this case study.

The support per project cannot exceed €600,000. This is calculated based on the analysis of previously supported projects and on the fact that, starting from 2015, self-financing is higher compared to the 2008–2012 period (at least 50% rather than 30%, thanks to a greater readiness to co-finance projects due to the better economic results of enterprises). As one of the interviewees stated, 'the funding rate

[1] Though the programme was in force from 2008, officially the period of the programme is 2007–2013, which is linked to the funding period of ESIF.

was lowered because many of the existing clusters or potential applicants said that their (intra-cluster/business association) cooperation would continue without state funding but with the exception that they would then be able to do less and hence have less positive outcomes'. The share of the support cannot form more than 50% of the eligible costs of the project. Self-financing should cover eligible costs that are not covered by the support measure.

There are other differences between the regulations of 2008, 2014 and 2015. A difference between the regulations connected to the two different EU financing periods is a significant increase in the amount of support (from €130,000 to €600,000), so to enable the creation of larger and more powerful clusters that would be able to run their activities also after the finalisation of the state support. In addition, during the 2008–2013 period the application process was continuous, as each of the created clusters started its activities at a different time. In the subsequent period, when the clusters were more established, this approach was replaced by fixed application rounds and deadlines. Having application rounds makes it possible to rank competitive projects, and therefore to increase the objectivity of funding decisions. The range of possible development activities in a cluster was broadened to increase the flexibility of the measure for the clusters. The inclusion of a reference to the state aid group exemption regulation in the regulation of the development of clusters in the case of the third type of activities (that is, increasing international visibility and the value of clusters) aimed to decrease the number of cases where enterprises left clusters because they had exceeded the *de minimis* ceiling.

As stated by the interviewees, it is not yet known whether the state will go ahead with this measure once the projects of the third round in 2019 are finalised. Originally, it was planned that the supported clusters should be able to work on the basis of their own resources by that time without any state support.

2.3. Available budget

The initial sum of the 2008–2013 funding was 100 million Estonian kroons (about €6.4 million) in total (financed from the European Regional Development Fund; see section 2.2 on obligatory co-founding of applicants). The sum was reviewed each year. For example, according to the interviewees, from 2011 it was increased based on the expected number of applications and expected amount of eligible costs.

According to the explanatory memorandum to the regulation of 2015, the sum of the 2015–2020 funding is €10 million in total (financed from the European Regional Development Fund; see section 2.2 on obligatory co-founding of applicants).

2.4. Target groups of the measure

According to the MoEAC website, the target groups of the measure consist of a combination of the following types of actors:

- Non-profit associations and foundations that bring together cluster partners and support cluster activities.
- Entrepreneurs who are ready to and capable of implementing the activities of the cluster through mutual cooperation.
- Research institutes and institutions of higher education whose participation requires cooperation between entrepreneurs and research institutes.

According to the 2014-2020 Structural Assistance Act and the relevant regulation, the applicants should be non-profit associations and foundations, but the application should involve at least 10 enterprises. The applicants should comply with the obligations and requirements under the legislation regulating the provision of state aid and *de minimis* aid. There are other eligibility criteria in terms of minimal capacity to run a project; for example, the applicant or partner cannot be bankrupt or under liquidation or compulsory liquidation.

The cluster in general (not necessarily all partners) should be related to smart growth areas (see section 2.1).

The target country is Estonia. However, clusters could involve international partners from any country. As the interviewees asserted, there is no variation between regions/areas in Estonia in terms of any criteria/aspect of the measure.

3. Relevance of the measure to SMEs/born globals and internationalisation

3.1. Relevance in relation to different types and stages of internationalisation

The measure is an important support instrument for the process of internationalisation (see section 2.1) and is relevant for all kinds of enterprises. In particular, the measure is valuable for young and small enterprises in Estonia for which it is much harder to reach international markets and stay internationally competitive. SMEs and born globals are a natural part of such clusters if they want to receive and provide help/input through the process of cooperation within the cluster. Clusters, as understood within this measure, work well if there is a combination of various partners at different stages of internationalisation to realise all activities needed for increasing international competitiveness.

3.2. Support for cooperation between SMEs/born globals and wider international collaboration (if any)

According to the interviews, the measure under observation directly contributes to creating and maintaining cooperation between enterprises not only nationally (to carry out joint activities to produce innovative high added-value products and services to be internationally competitive), but also internationally. It creates opportunities to find national or international partners in any field (enterprise, education, training, etc.). For example, the Estonian Wooden Houses Cluster has two international partners: the Latvian Wood Construction Cluster and the Norwegian School of Log Building.

3.3. Contribution of the measure to tackle SMEs'/ born globals' internationalisation support needs

Estonian enterprises are generally small. The measure for the development of clusters supports the activities of participating enterprises to access and succeed in international markets through different kinds of cooperation. To be internationally competitive, enterprises should adopt the joint activities (as described in section 2.2) including: the development activities of a cluster, joint marketing activities, and activities towards increasing international visibility and value. Cluster activities help cluster partners to develop various types of internationalisation activities, including international subcontracting, international technical and commercial cooperation, and cross-border partnerships. Similarly, they enable enterprises to share knowledge and skills and to implement them in cooperation between themselves and with other organisations to gain sector-based and target market-based input for product development and to produce high value-added products and services to be internationally competitive. For example, the combination of different enterprises (even at different lifecycle stages and sizes) enables born globals to become more competitive by obtaining references from larger companies with renowned brands with whom they cooperate or have cooperated.

4. The operation of the measure

4.1. Promotion of the measure to internationalising businesses

According to the explanatory memorandum, during the process of developing a new regulation for the measure under the 2014–20 OP, the draft regulation was presented at three joint seminars for previous

and potential applicants. In addition, there was an information seminar for research and development organisations, professional unions and other representative organisations. The fundamental principles of clusters were introduced to the steering committee of the smart specialisation initiative.

The information about the measure is available on the website of the implementing agency of the measure and a separate website prepared by the city of Tallinn. As the interviewees pointed out, information about open calls is disseminated via EE newsletters and press releases. The EE information and support centre provides information with regard to any support measure administered by EE and answers questions from enterprises. EE organises information days to deliver information about various support measures. There is also concise information on the website of the MoEAC. The information about the present clusters is available on the webpages of the clusters (this is an obligatory requirement for grantees), which among others makes it possible to promote the benefits of the measure to other non-member companies. Clusters present themselves at international events such as fairs, again broadening the general awareness of the cluster's activities outside the cluster.

As the interviewees pointed out, the awareness of the measure is seen to be sufficient and the number of applicants as adequate.

4.2. The process of application and assessment of applications

As there is no pre-application round in the 2014–2020 period, according to the regulation there is a preliminary consultation for applicants before each application deadline. During the consultation, the administrator gives feedback on the project, which is however not binding.

According to the regulation, the application should be sent via the application e-system and be digitally signed. The assessment of the applications lasts 45 working days after the submission; the assessment period could be prolonged for not more than 20 working days. If shortcomings exist in the application, the applicant gets no more than 10 working days to correct the application. Applications are assessed by an assessment committee comprising representatives of public organisations (EE, MoEAC and KredEx). Experts from outside the public service could also be involved (the members of the assessment committee are made public).

The initial period foreseen for the assessment of the full applications in 2008 was 42 working days. As explained by the interviewees, in 2009 it was decided to decrease the assessment period to 35 working days. Reasons for this were the economic recession and the resulting extra need to assess applications quicker to allow activities start as soon as possible, but also the fact that the full applications were fewer than the pre-applications, implying a need for less time to be spent on assessment activities. In 2015, 45 working days were found to be optimal for assessing all applications submitted to the open call.

The assessment of each application follows a number of assessment criteria, each of which has its own relative weight, namely:

- The impact of the project in achieving the objectives of the measure: 30%;
- The project's contribution to achieving the main goals of smart specialisation growth areas: 10%;
- The merits of the project: 25%;
- The project's cost efficiency: 15%; and
- The capacity of the applicant, the cluster partners and other partners to implement the project: 20%.

The implementing agency specifies and makes public the assessment methodology (including a minimum level that needs to be achieved) before each application call.

Partial satisfaction of the application is possible only in specific cases that are set in the regulation of the development of the clusters (for example, the objectives of the project could be achieved with less support).

4.3. Delivery mechanism of the measure

The support for enterprises is provided by the clusters that are financed by EE. Clusters design their own package of eligible activities (see section 2.2) and describe them in the application according to the particular needs of the partners and economic sectors. The administrator of the measure is a member of the TCI Network (according to the website of the organisation it is the leading global network of the main organisations and practitioners with deep expertise in clusters and competitiveness).

As described in the EE operational report for 2016 (in Estonian), in addition to the financial support of clusters, EE offers cluster managers a course on 'Coaching presentation skills to enter international markets' delivered by an international trainer, in order to support them in finding international partners and establishing contacts with them. The first part of the course was held in October 2016. According to one of the interviewees, in autumn 2017 EE will design a package of services (for example, training, consultations) to be provided to clusters with the aim of supporting their development.

4.4. Administration of the measure

The MoEAC, as an initiator, is responsible for the general development and establishment of the terms and conditions for the support and monitoring of the performance of the support. Moreover, the MoEAC should advise the implementing agency, which is EE, on the implementation and interpretation of the legislation related to the measure. The measure was designed and adjusted in close cooperation with the implementing agency in order to take the lessons learned into account.

The administrator and implementing agency is EE. EE is a government agency that promotes business and regional policy in Estonia and one of the largest institutions within the national support system for entrepreneurship by providing financial assistance, counselling, cooperation opportunities and training for entrepreneurs, research institutions, the public and non-profit sectors. Export promotion and support for internationalising businesses is part of the delivery organisation's mission. The long-term measurable objective of EE is 'Estonia will be among the top 20 countries in the world competitiveness scoreboard by 2020'. Support for SMEs is a significant means to achieve this mission.

The present structure of the administration of the measure is determined by the general working process of ESIF in Estonia (according to the 2014–2020 Structural Assistance Act, 1st level intermediate bodies responsible for implementing measures are ministries and 2nd level intermediate bodies are authorities of executive power or a legal person governed by public or private law designated by the national government). According to the interviewees, this has been proven to be efficient and there is no need to change it.

5. Monitoring and evaluation

5.1. Monitoring of the implementation and take-up of the measure: method and contents

The monitoring data regarding the expected results (see section 2.1) is gathered by EE (1) from annual economic and financial reports of cluster partners and (2) by sending a request to fill in a form to clusters after annual reports of cluster partners are submitted. These data are not public (as they contain economic data from enterprises) and are used to assess whether the set targets are achieved. As some clusters started their activities in summer 2015 and some in January 2016, it was decided to treat all clusters equally and not to conduct an analysis in 2016; therefore, the first analysis is expected to be carried out in autumn 2017 based on data from 2016.

5.2. Evaluation of the measure: methods and contents

The evaluation of measures within the 2014–20 OP is undertaken according to the evaluation plan for the 2014–2020 period (in Estonian). Though there were two evaluations of enterprise support measures

from ESIF in 2012 (in Estonian) and 2014 (in Estonian), they were oriented towards support for individual enterprises, and therefore the measure of the development of clusters was not included in the evaluation. Thus, there has been no systematic approach towards evaluating the measure involving the development of clusters. Separate evaluations of this measure were carried out in 2013 and 2015, as well as an audit (2014) (see below).

Interim evaluation of the cluster programme, 2013 (in Estonian)

An interim evaluation of the cluster programme by the MoEAC and EE was published in 2013, and its objective was to estimate the impact of the programme on the organisations operating in the clusters and to gather feedback from the entrepreneurs on the activities of the cluster. The report provided thematically organised recommendations for policymakers (Mihkelson et al, 2013).

The interim evaluation included a quantitative and a qualitative component.

First, the dynamics of the economic indicators of the participating enterprises were analysed in the quantitative part. For this purpose, a comparative analysis was carried out looking at the number of employees, export sales revenue, operating profit, and the dynamics on added value during the evaluation period. In the case of each enterprise, the team observed the duration of operations in the cluster, and that provided the base year and the measuring year. The second part of the quantitative analysis contained a counterfactual analysis, where the matching method was used for compiling a comparison group and analysing the economic indicators of enterprises in the cluster.

In the first part of the qualitative analysis, all cluster partners were sent a survey with questions about cooperation in the cluster, the cluster's economic effect on enterprises, the management of the clusters and recommendations for policymakers about the measure. In addition, two interviews were conducted with the manager and the development manager of each cluster. In the end, the results of the interim evaluation were used to provide recommendations to policymakers for improving the cluster programme (Mihkelson et al, 2013).

In the cluster programme evaluation, EE included an external expert who helped to formulate the cluster programme evaluation methodology, conduct interviews and draw conclusions from the evaluation results (Mihkelson et al, 2013).

Audit of the National Audit Office in 2014 'Impact of innovation support measures on the competitiveness of companies' (in Estonian)

In 2014, the National Audit Office of Estonia audited whether the support in the amount of about €166 million, which was paid out during the 2007–13 period to promote the capacity of companies for innovation and growth, had had any economic impact and thereby improved the competitiveness of companies. The audit assessed whether the measures have increased the companies' sales revenue, export sales revenue, added value and added value per employee, and whether it has improved the cooperation of companies with other companies and/or research and development organisations (Riigikontroll, 2014).

In the case of the measure for the development of clusters, the National Audit Office of Estonia concluded that there had not been any impact on sales revenue, export sales and added value. Though statistical analysis showed a positive impact, only 5.2% of the surveyed enterprises positively assessed the impact of the measure on their added value. The audit showed a positive impact on added value per employee (no additional detail on this fact is available) (Riigikontroll, 2014).

The results of the audit were seriously and critically reviewed by various state institutions (including ministries). As the audit was made at a time when some activities for the 2014–2020 period had already started, it was impossible to incorporate the suggestions. Moreover, in addition to various methodological inaccuracies that might have affected the results (for example, low representativeness; low quality of the data analysis), critical reviews stated that if other statistical tools had been implemented, a more positive impact would have been identified. Therefore, as the interviewees

pointed out, because of the lateness of the evaluation by the National Audit Office in 2014 and its methodological inaccuracies, and the positive interim evaluation in 2013 and positive ongoing feedback from clusters and cluster partners, it was decided to implement the measure within the new OP for 2014–2020 (Riigikontroll, 2014).

Interim evaluation of the cluster programme, 2015 (in Estonian)

As a sequel to the interim evaluation of the cluster programme in 2013, this in-house research was conducted by an analyst of the MoEAC and an external expert. A questionnaire (for cluster partners) and interviews (with the managers of eight clusters) were the chosen methods to estimate the impact of the programme on the organisations operating in the clusters, to gather feedback from the entrepreneurs on the activities of the clusters and to provide recommendations for policymakers. The evaluation involved clusters that had been operating for at least two years. Contrary to the evaluation in 2013, the authors of the 2015 evaluation did not use quantitative methods (Ojamäe and Visnapuu, 2015).

In addition, and as raised during the interviews, in 2016 the MoEAC and EE started organising annual meetings with the clusters (interim evaluation panel), to which the MoEAC invites an external expert who makes analytical conclusions. The objective of these meetings is to analyse the yearly activities that were carried out, share experiences and discuss how the objectives of the clusters are going to be achieved. The minutes of the meetings are not public (because they contain enterprise economic data). The two most important results from the 2016 analysis are: (1) clusters should have more ambition and EE should ask for more ambition from the clusters (to run more ambitious and large-scale projects and to support activities that in turn help foster exports more actively), and (2) clusters should develop as organisations in order to provide value added for enterprises after the funding period ends. The first interim evaluation meeting (in-house and non-public) was conducted in August 2016, the following being planned for autumn 2017. In that occasion, an economic data analysis pertaining to the expected results (see section 2.1) will also be conducted.

As of the beginning of 2017, there are €4.5 million left in the budget (from the 2014–2020 period), and the MoEAC and the EE jointly performed interviews with cluster partners in the form of roundtables in March 2017. The main aims of these meetings were to obtain an overview of the performance of clusters and of how these are perceived by the participating entrepreneurs, and to gather input for a further revision of the measure in order to provide more value for cluster partners (that is, current readiness of enterprises to contribute to joint activities; performance of clusters as supportive and advisory organisations; and how clusters support the development of the value chains of enterprises).

5.3. Any changes to the content or delivery of the measure following monitoring and evaluation

While preparing the new regulation for the development of clusters issued in 2015, the general principles of the measure were left the same but some significant changes were made to strengthen it, on the basis of the results of the interim evaluations of the cluster programme of 2013 and, particularly, of 2015. These changes include increasing the level of self-financing, increasing the amount of support, broadening of the range of possible development activities in clusters, and the inclusion of a reference to the group exemption regulation as part of the regulation for the development of clusters (for more information see section 2.2). In addition, according to one of the interviewees, all clusters were and are required to provide an exit strategy as a part of their overall strategy. The ‘exit strategy’ is to provide the funding body with (1) an overview of the cluster’s activities and decisions, which will enable the cluster to continue operating also without state funding (after the funding period), and also (2) confidence about the cluster’s mission and vision.

As a result of the roundtables in March 2017, the focus of the measure might change slightly: with the aim of supporting a significant increase in sales, there might be a need to provide access to training to

the present and future managers of the clusters as well as to the managers of the participating enterprises before they apply for funding. As one of the interviewees stated, training is also relevant to improve the cluster management's knowledge of best practices and tools for (intra-cluster) cooperation and strategy development and the related implementation. If (as of April 2017) the present expected results from the implementation of each cluster project are connected to cluster members (see section 2.1), additional expected results will be connected to the increased capacity of clusters as organisations.

6. Evidence of outcomes and impact

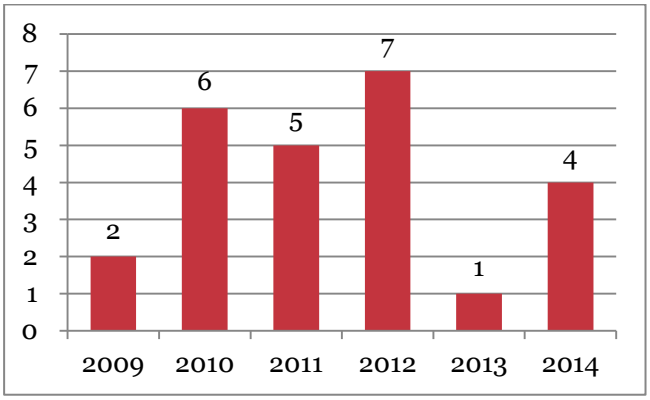
6.1. Evolution of the measure's spending

According to the interviewees, in the 2015–2020 period, €5 million was allocated to the first call and €5 million to the second one. As the planned amount of eligible costs of the projects of the first call in 2015 was €4.6 million, an additional second call was launched with a budget of €1.7 million in 2016 (EAS, 2016; EAS, 2017).

6.2. The quantitative and qualitative outcomes of the measure

As a result of the first EU financing period, the state supported the development of 25 clusters (the number of full applications: two in 2009, six in 2010, five in 2011, seven in 2012, one in 2013 and four in 2014) using €9.9 million (see Figure 2). In total, the measure reached 350 enterprises (the number of universities as cluster partners has not been monitored). Six clusters were supported twice. 24 clusters out of 25 achieved the planned targets and expected outcomes (which does not mean that the targets and expected outcomes of the measure itself were also achieved) (EAS, 2016).

Figure 2: Number of clusters supported by the measure, 2009–2014



Source: EAS, 2016; old website of EE (available in March 2017)

According to the information on the website about the measure, 12 clusters received support from the state during 2014–2020 and, according to the interviewees, some clusters will receive it within the third call in 2019. 10 clusters were supported within the first round and two as an outcome of the second round. During 2014–2020, clusters were supported in the following sectors: ICT, construction, wood industry, defence and security, electronics, real estate and energy sectors, wind turbine manufacturing, and health and medical services.

According to the website of Estonian Clusters, the Estonian ICT Cluster, which was supported by the measure twice during the first funding period (in 2009 and 2012) and in 2015 during the second funding period, has been awarded a Silver Label Certificate by the European Cluster Excellence Initiative. It is the first cluster in Estonia to receive such a certificate.

6.3. Impact of the measure on its beneficiaries and other actors

According to the interim evaluation of the cluster programme in 2013, the cluster's effect on its enterprises was more indirect in nature, and the same conclusion could be made based on the results of the interim evaluation in 2015, as on average no direct impact was perceived by the surveyed enterprises. The following comparison of the two interim evaluations in 2013 and 2015 is original in the present report, because there is no comparison of the two evaluations in the interim evaluation report of 2015.

According to the reports, the main impacts of being a cluster partner were broader cooperation (42% of respondents in 2013 and 38% in 2015), more contacts (26% of respondents in 2013 and 15.2% in 2015) and increased international competitiveness (11% of respondents in 2013 and 17.7% in 2015). Cooperation was developed not only between cluster partners themselves but also between cluster partners and non-partners (for example, professional associations, non-profit organisations, various government established research and development bodies, local governments, ministries at national level and various enterprises and organisations at international level). 88% of respondents in 2013 and 89% in 2015 answered that their contact base increased as a result of participation in the cluster activities. About half of the cluster enterprises in 2013 and more than a half in 2015 found that cooperation with universities through the clusters had contributed to the development of their business, and that cooperation was expected to increase further in the future (Mihkelson et al, 2013; Ojamäe and Visnapuu, 2015).

According to the interviews conducted for this case study, most clusters that were financed in 2008–2013 showed an interest in using this measure at the beginning of the 2015–2020 period. Based on the ongoing feedback of participating enterprises, it might be stated that, as cluster partners, they are taken more seriously on the international market. In addition, participation in the cluster provides the opportunity to think about the future through discussions of future business plans with competitors.

6.4. Evidence of economic and employment impact

The quantitative analysis of the 'Interim evaluation of the cluster programme, 2013' revealed that enterprises showed very good economic results.[2] All seven economic indicators increased during the period starting from becoming a cluster partner till 2012 (inclusively): the number of employees increased by 14%, sales revenue by 82.6%, export sales revenue by 255.9%, operating profit by 85.6%, employment costs by 27.8%, value added by 41.7%, and value added per employee by 44.5%.[3] When the data was compared with enterprises that were not operating in clusters, it was found that enterprises which were operating in clusters showed better economic results in six out of seven of the economic indicators, namely: number of employees by 13.6%, sales revenue by 54%, export sales revenue by 155.3%, employment costs by 21%, value added by 21.9%, and value added per employee by 4.3%; operating profit was worse by 16% (Mihkelson et al, 2013; Ojamäe and Visnapuu, 2015).

However, improvements in the economic results of the enterprises may not be directly linked to the operations of the cluster, as other factors like wider macroeconomic context may have affected them. 40% of respondents in 2013 and 56% in 2015 perceived a positive impact on the return on sales from new or significantly altered products and services (26% of respondents in 2013 and 18% in 2015 regarded it also as one of the major impacts among others) and 46% of respondents in 2013 (no data from 2015) on export revenue and value added per employee. 33% and 49% of respondents in 2013 (no data from 2015) perceived a positive impact on the number of employees and employment costs, respectively. On average 12.7% of the change in the value added per employee in 2013 and 12.1% in 2015 was explained as a result of being a cluster partner. However, as stated in the report from 2015,

[2] These results should not be misunderstood in the context of the negative results of the evaluation made by the National Audit Office in 2014 that is not reliable because of methodological inaccuracies (see section 5.2).

[3] The positive impact of the development of clusters on the value added per employee was also observed in the audit by the National Audit Office in 2014 (see p. 5.2).

participation in cluster activities had very little impact on the number of employees, labour costs and operating profits. Only 22% of the cluster partners in 2013 accessed new markets as a result of cluster activities. The reasons were the brief history of clusters' implementation, Estonia's limited known position in Europe and in the world, the clusters' low capacity for locating new contacts for enterprises in foreign markets, and weak international presence of clusters in terms of international partners. In 2015, the same number significantly increased, to about 51% of the surveyed enterprises[4] (Mihkelson et al, 2013; Ojamäe and Visnapuu, 2015).

There is no publicly available evaluation of the measure with regard to the 2014–20 period. An analysis and some evidence of the economic and employment impact are expected by the end of 2018, when the current projects are finalised.

7. Strengths and weaknesses of the measure

7.1. Strengths of the measure

Based on the interviews conducted for this case study and information on the website of the MoEAC, the following strengths were identified:

- Concentrating knowledge, skills, capital and human resources, and bringing enterprises of various sizes together are important for achieving economies of scale at the international level, building a unified brand and finding strong cooperation partners.
- Running activities jointly contribute to overcome the small size of enterprises as an obstacle to successful internationalisation and international activities and to enable cluster partners to enter target markets and be internationally more visible.
- Obtaining international contacts and making joint promotions in order to access international markets and develop business.
- Creating opportunities for cooperation between different parties (not only enterprises) both at national and international levels.
- Accessing valuable input for the development of products and services from joint activities within clusters (such as training and sharing new technological knowledge).
- Designing products and services and developing joint marketing activities according to foreign market needs.
- The cluster as a cooperation platform makes promoting innovation-related cooperation and interpenetration of various economic sectors possible.
- Cluster policy is considered a good support instrument for achieving stronger and faster growth in clusters (but it is not *per se* the reason for the clusters to exist).
- The measure tries to change how participating enterprises think and act (see section 2.1). Therefore, the measure has a long-term effect and impact. These aspects are:
    a. Considering what kinds of activities should/could become the basis for collaboration.
    b. Improving the skills needed to evaluate alternatives and their impact (whether to get financial support or to go to a trade fair or conference with other cluster partners).
- Reinforcing communication between the representatives of the public, third and private sector is made possible, and therefore builds trust and creates opportunities for joint activities that are knowledge-intensive and targeted at high added value.
- As most of the clusters are linked to professional associations, this measure empowers these associations. More powerful associations are good partners for the public sector as they represent the interests of the whole economic sector (like ICT cluster) and this makes it more effective to cooperate with enterprises through the associations.

[4] It might be assumed that such an increase was made possible partially because the clusters had been operating for a longer period.

No variations in the strengths of the measure between different types of enterprises could be observed.

7.2. Weaknesses of the measure

- Additional administrative processes for grantees connected to the requirements of ESIF (such as proving the eligibility of costs, complexity of expenditure certification, bureaucratic reporting formats and requirements to follow public procurement procedures). However, clusters often approach the administrator before initiating large projects to be sure about the correct interpretation of the requirements.
- The development of the clusters is a purely financial measure. In order to support the development of the clusters more efficiently and effectively, there is a need to expand eligibility to additional soft activities (for example, training and coaching for cluster managers, not only cluster partner staff – see section 4.3 for information on how the training and coaching of cluster managers was started in 2016 separately from eligible activities of the measure).
- Following the above point, uncertainty exists regarding the sustainability of cluster activities after the financial period of the 2014–20 OP. The cluster development measure, like some other policy measures, was initiated for specific periods and linked to the OPs for 2008–13 and then 2014–20. It is not yet known whether the state will continue supporting cluster activities. However, the measure was designed to support clusters so they could continue operating without state aid.

No variations in the weaknesses of the measure between different types of enterprises could be observed.

7.3. Evidence of policy learning over time

1. Supporting clusters in a way that enables enterprises to participate in the activities they need (for example, joint marketing/promotion materials; to visit target markets to obtain contacts) has proved successful.
2. It is not effective to initiate change only by distributing financial resources; rather there is a need to invest in gaining new knowledge, changing the ways people think, including improving the way strategic decisions are made through consultations, training and so on before enterprises ask for funding.
3. The success of the application and effectiveness of cluster activities greatly depends on the skills and competences of the cluster manager.
4. The success of the cluster greatly depends on the cooperation skills of cluster partners.
5. The creation of clusters themselves is not a target in itself; on the contrary, the primary objective is to increase international competitiveness through cooperation. It might happen that the activities of some clusters will be managed by the relevant professional associations when the funding period ends.

Cluster development has proved to be an effective measure to increase international activities for SMEs from small countries. The measure is valued for its design (foreseeing joint strategies and objectives before launching joint activities focusing on increasing international competitiveness) and content (supporting the implementation of soft activities such as research, training, seminars, workshops etc., in order to access international partners and develop international activities). Therefore, such model of internationalisation-oriented cluster support measures could also be considered in and transferred to other countries.

8. Recommendations

8.1. Overall recommendations regarding the measure

1. To identify a relevant methodology to monitor and evaluate the indirect impacts of the measure.
2. Considering the activities in which clusters engage, it is advisable to access large international companies who invest in the Estonian economy as international cluster partners.

8.2. Recommendations on the national support system for SME/born global internationalisation

1. There should be a one-stop shop so to allow enterprises to access all the information they need for their activities from a single organisation, rather than from different organisations. This would be especially valuable for born globals, who typically develop their business rapidly and need efficient access to different types of state support. The Estonian government has assigned the task of creating a one-stop shop approach to the MoEAC.
2. A systematic approach to the evaluation of all policy measures should be implemented.
3. As several SMEs' support measures are available in Estonia, there should be an analysis of how efficiently and effectively various support measures are designed and implemented to work together towards supporting SMEs/born globals.

8.3. Any gaps in the provision of policy support and suggestions

There are no significant gaps in the provision of policy support (however, related ideas might be found in sections 8.1 and 8.2).

The public administration in Estonia is small. According to the interviews conducted for this case study, to make effective evaluations of policy measures requires the immediate addition of more human resources than currently available (the number of human resources is declining); this should be remedied as a matter of priority within the set limits of state reform. This labour shortage results in a shortage of work hours that can be dedicated to analysis and evaluation activities.

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