Cluster Survey in the Danube Region

In February/March 2013 the Working Group “Clusters of Excellence” of Priority Area 8 “Competitiveness” of the EU Strategy for the Danube Region (EUSDR) conducted an online survey among cluster policy makers in the Danube Region in order to gather understanding of the situation of clusters and cluster policies in the countries covered by the EUSDR. Central topics in this survey were the financial situation of clusters, the most important economic sectors with cluster activity across the region, as well as the experience in international cluster cooperation, which is one of the main aims of the Working Group, and furthermore cluster policy makers’ expectations in the EUSDR as a vehicle to boost international cluster cooperation.

The results of the survey were discussed in the framework of the Working Group Clusters of Excellence on 12 September 2013. The results of this discussion have been integrated in the analysis.

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General Overview on Respondents

The survey was answered by 44 respondents out of 13 of the 14 Danube Region countries[1] (table 1). The number of respondents per country varied between 1 and 10. While the survey targeted cluster policy makers, those respondents who declared themselves to be cluster managers were not excluded, as in some countries in the Danube Region cluster managers are also included in the policy making process. The sample was expected to be small, as per country only one or at maximum a handful of persons are responsible for cluster policy making. Therefore, for having reached 44 respondents, the study was a success.

Country :	Answer Percent	Answer Total
Austria	6,82%	3
Bosnia and Herzegovina	0%	0
Bulgaria	2,27%	1
Croatia	2,27%	1
Czech Republic	2,27%	1
Germany	6,82%	3
Hungary	22,73%	10
Montenegro	4,55%	2
Moldova	2,27%	1
Romania	18,18%	8
Serbia	13,64%	6
Slovakia	9,09%	4
Slovenia	6,82%	3
Ukraine	2,27%	1
Total answers		44
Unique Respondents		44
Respondent Reach		100%
Mean		8,52

Table 1: Distribution of respondents per country

Respondents had to indicate whether they were responsible for cluster policy on a national or regional (ie sub-national) level. 25 respondents declared themselves responsible for the national level, 19 stated their responsibility for the regional level (table 2). This distinction was especially important for matters related to cluster budgets, which of course vary when seen from the national or regional level.

Area of responsibility :	Answer Percent	Answer Total
National level	56,82%	25
Regional (sub-national) level : (Please specify region)	43,18%	19
Total answers		44
Unique Respondents		44
Respondent Reach		100%
Mean		1,43

Table 2: Area of responsibility of respondents – national versus regional

[1] No response was given by Bosnia-Herzegovina.
[2] Additional information: the country-specific information lists how many respondents per country mentioned a specific area of specialization. For instance, out of the 10 respondents for Hungary, 6 mentioned that in Hungary automotive clusters exist.

Financial Situation of Clusters in the Danube Region

In order to understand the situation of clusters in the different countries their budgetary situation is key. The graph in table 3 primarily shows the answers of respondents on the national level, answers of respondents on the regional level are in brackets. It is important to present the answers of the regional and national level next to each other, as in some countries, like Austria and Germany, clusters are mostly regionally established and financed, whereas in other countries clusters rather appear to be a matter of national policy.

	< 0,5 million €	0,5-2 million €	2-5 million €	5-20 million €	20-50 million €	50-200 million €	> 200 million €	I do not know	Total
AT		1 (1)	(1)						1 (2)
BG			1						1
HR								1	1
CZ					1				1
DE	(1)		(2)						(3)
HU	(1)	(2)			2 (2)			2 (1)	4 (6)
ME		1						1	2
MD								1	1
RO	3			(1)		1		(3)	4 (4)
RS	1	(3)						2	3 (3)
SK	1	1						2	4
SI	(1)				1	1			2 (1)
UA								1	1
Total	5 (3)	3 (6)	1 (3)	(1)	4 (2)	2	0	10 (4)	25 (19)
Total nat/reg	8	9	4	1	6	2	0	14	44

Table 3: Total annual budget for clusters and cluster policies in 2012 per country

In general, respondents state that the funding of clusters and cluster policies is relatively low, with 22 out of 44 respondents estimating their relevant budgets as ranging between below €0,5 million to a maximum of €20 million. Only 8 respondents claim budgets of €20 to 200 million, no respondent chose the option of above €200 million.

The numbers show that most of the respondents only had estimates of the budget for clusters and cluster policies in their countries, as the answers often differ for countries with multiple respondents on the national level. In Romania cluster funding in the past has been low, but recently more funding has been made available, which is indicated in the disparity of Romanian answers, varying between €0,5 million and €50-200 million. On the regional level, differences are easily explained, as different regions within the same country may offer very different regional cluster and cluster policy budgets.

According to the respondents as shown in table 4, EU structural funds are the most important source of cluster financing, with an average of 43,1% of all the options given. The second most important source of cluster funding are national budgets (23,64%).

These figures vary when broken down to the national versus regional level of respondents. Unsurprisingly, respondents regionally responsible for cluster policies regard the regional budget as a more important source of funding (22,8%) than respondents responsible for

clusters on a national level (6,42%). Also the importance of donations and fees from firms considerably varies between the regional (3,67%) and national level (17,88%).

In table 4 the figures are further broken down to the country level, distinguishing between respondents nationally or regionally responsible for cluster policy. The numbers in brackets indicate the number of respondents per category. However, the figures broken down to the country level need to be taken with caution, especially when looking into respondents responsible for cluster policies on the national level, as they represent estimates of cluster policy makers and could vary considerably when more than one respondent per country gave his/her estimates. These figures therefore need further qualitative research. On the regional level, variations are less surprising, as different regions can use different funding opportunities for their clusters.

	National budget	Regional budget	EU structural funds	Other EU funds (FP7 etc)	Donors (firms, private)	Other
Average all	23,64	12,72	43,10	6,56	12,41	1,56
Average nat	24,04	6,42	45,75	4,21	17,88	1,71
Average reg	23,00	22,80	38,87	10,33	3,67	1,33
Nat per country						
AT(1)	5,00	50,00	30,00	-	15,00	-
BG (1)	10,00	-	90,00	-	-	-
CZ (1)	15,00	-	85,00	-	-	-
HR (1)	90,00	-	-	-	-	10,00
HU (4)	10,00	5,00	72,50	10,00	2,50	-
MD (1)	50,00	15,00	20,00	10,00	5,00	-
ME (1)	80,00	-	-	-	20,00	-
RO (4)	8,75	-	70,00	1,25	16,25	3,75
RS (3)	46,67	5,00	18,33	15,00	11,00	4,00
SI (2)	12,50	-	70,00	-	17,50	-
SK (4)	9,25	6,00	24,50	0,25	59,00	1,00
UA (1)	50,00	30,00	10,00	-	10,00	-
Reg per country						
AT (1)	-	40,00	40,00	10,00	-	10,00
DE (3)	-	37,33	62,67	-	-	-
HU (5)	27,00	18,00	37,00	8,00	10,00	-
RO (2)	20,00	-	60,00	20,00	-	-
RS (3)	56,67	23,33	16,67	1,67	1,67	-
SI (1)	-	30,00	-	60,00	-	10,00

Table 4: Important sources of the 2012 budget for clusters and cluster policies (percentage of total budget), on average and per country

Degree of Institutionalization of Clusters in the Danube Region

In a self-assessment, presented in table 5, on the distribution per country of strongly institutionalized clusters (ie agglomerations of firms which cooperate regularly, with the support of an established institutionalized basis) and weakly institutionalized clusters (ie agglomeration of firms which cooperate occasionally, but only have a weak or no institutional

basis for cooperation), Austria and Germany were the most confident with respectively 91,7% and 86,7% of strongly institutionalized clusters. Also Czech Republic and Slovakia still see the number of their strongly institutionalized clusters above the 50% mark. In Ukraine, Serbia, Moldova and Montenegro, 75% or more of the clusters are seen as weakly institutionalized. The numbers in brackets behind the country codes indicate the number of respondents per country (no distinction made between national and regional level).

	strongly inst. %	weakly inst. %
AT (3)	91,7	8,3
DE (3)	86,7	13,3
CZ (1)	75,0	25,0
SK (4)	53,3	46,7
BG (1)	50,0	50,0
HR (1)	50,0	50,0
HU (9)	43,3	56,7
SI (3)	41,7	58,3
RO (8)	34,4	65,6
UA (1)	25,0	75,0
RS (6)	24,0	76,0
MD (1)	15,0	85,0
ME (1)	0,0	100,0

Table 5: Distribution in strongly and weakly institutionalized clusters per country (percentage of all clusters)

During the meeting of the Working Group in Vukovar, representatives from Czech Republic and Bulgaria corrected the distribution among strongly and weakly institutionalized cluster for their countries. Czech Republic was more confident, stating that actually 90% of its clusters are strongly institutionalized, whereas Bulgaria downgraded the earlier estimates, claiming that only 30% of its clusters were strongly institutionalized.

Ranking of Economic Sectors with Cluster Activity in the Danube Region

Automotive, ICT and wood processing are the most prominent sectors with cluster activity in the Danube Region (table 6). They exist in 11 or respectively 10 of the 14 countries covered by the EUSDR. Food processing and textile technology clusters are present in 9 countries. Agricultural technology, engineering, mechatronics and renewable energy clusters exist in 8 countries. These figures indicate ample opportunity for innovative cluster projects along these strong fields of cluster activity, as well as for cross-fertilization projects, in which technologies and knowledge of two or more economic sectors are combined to create innovative solutions to today's problems.

	Total Countries	AT	BG	HR	CZ	DE	HU	ME	MD	RO	RS	SK	SI	UA	Total Counts
Automotive	11	1	1	1	1	3	6			5	6	4	2	1	31
ICT	10	2	1	1	1	2	7			5	6	4	2		31
Wood Processing	10	2	1	1	1	2	3	2		4	4		2		22
Food Processing	9	2	1	1		2	2	2		5	4			1	20
Textile Technology	9	1	1	1	1	2	3		1	6	2				18
Agricultural Technology	8	1		1		1	3		1	5	5			1	18
Engineering	8	1			1	2	4			3	2	4	2		19
Mechatronics	8	3	1	1	1	3	3			4		1			17
Renewable Energy	8	1		1	1	3	5			5	1		2		19
Biotech	7	2			1	3	7			1	1		2		17
Electronics	7		1			1	3			3	1	1	2		12
Energy Technology	7	2		1		3	6			1		2	2		17
Environmental Technology	7	1			1	3	5			1	3		1		15
Health Care	7	1		1	1	2	4				2		1		12
Logistics	7	1				2	3			1	1		1	1	10
Plastics	7	1		1	1	2	2				3	4			14
Tourism	7	2		1			5			6	5	4		1	24
Business Services	5					1	2			1	3			1	8
Construction	5	2					3				3		2	1	11
Medical Technology	5	1				3	3			1			2		10
Metallurgy	5		1	1		1					2			1	6
Other	5	1	1			2	1						2		7
Aerospace Technology	4					3	2			2	2				9
Chemical	4					2	2						1	1	6
Creative	4					2	3			1	3				9
Nanotechnology	4	1			1	3	2								7
Packaging	4				1	1	3			1					6
Recycling	4				1		1				3		1		6
Apparel	3		1							1	3				5
Handicraft	3					1	1				4				6
Heavy Machinery	3						1						1	1	3
Maritime Technology	3		1							4	1				6
Microtechnology	3		1			3				1					5
Control Systems	2					1							1		2
Education	2						2				1				3
Optics	1					2									2
Photonics	1					2									2
Human Resources	0														0
Respondents per country		3	1	1	1	3	10	2	1	8	6	4	3	1	44

Table 6: Most important areas of cluster specialization, total and per country[2]

During the meeting of the Working Group, Romania added that it has also clusters with a specialization in the sector of construction.

Cluster Policies in the Danube Region

Table 7 shows that 28 of the 44 respondents declared that in their country exists an explicit and dedicated national or regional cluster policy, current or planned. Out of the 16 respondents who answered this question negatively, 13 stated that cluster development is however included in other national or regional policies (table 8). In conclusion, only three respondents found that in their geographical area of responsibility no cluster policy whatsoever exists. This demonstrates that governments throughout the Danube Region take the concept of clusters seriously and support it politically.

[2] Additional information: the country-specific information lists how many respondents per country mentioned a specific area of specialization. For instance, out of the 10 respondents for Hungary, 6 mentioned that in Hungary automotive clusters exist.

Is there any explicit and dedicated national/regional cluster policy (current or planned) in your country/region?	Answer Percent	Answer Total
No	36,36%	16
Yes: (Please specify the name of the policy)	63,64%	28
Total answers		44
Unique Respondents		44
Respondent Reach		100%
Mean		1,64

Table 7: Explicit and dedicated cluster policy

If there is no explicit cluster policy in your country/region, is cluster development included in other national/regional policies ?	Answer Percent	Answer Total
No	18,75%	3
Yes: (Please specify the name of the policy)	81,25%	13
Total answers		16
Unique Respondents		16
Respondent Reach		36,36%
Mean		1,81

Table 8: Cluster policy included in other policies

All 44 respondents declared that clusters are beneficial for a country or region's economy. Ranked as most important benefit, as shown in table 9, was the clusters' role to boost innovation, followed by the answer that the combined economic strength found within clusters facilitates entering new markets. These two answers display well two most prominent uses of clusters in the Danube Region, namely innovation-orientation and export-orientation. However, the benefit of increased sales, which is related to the issue of new markets, only ranked behind an increase in employment and reduced costs due to cooperation (research, machinery etc.). Cluster policy makers still do not attribute much importance to the possible role of clusters to tackle grand societal challenges such as climate change, the scarcity of resources, or an ageing society, while the European Commission has recently highlighted this potential use of clusters.

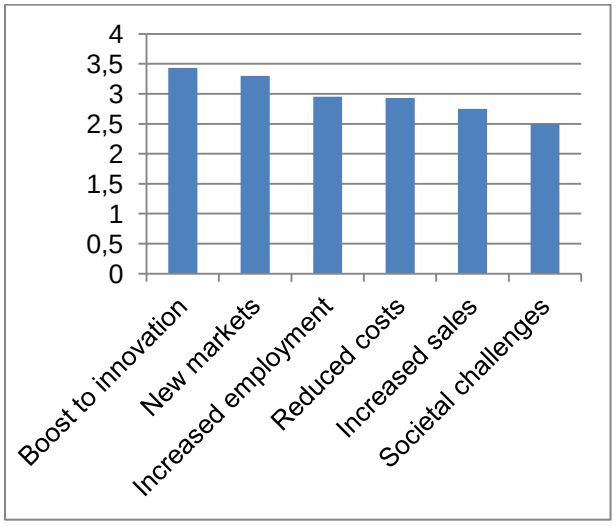

Table 9: Rating of expected benefits of clusters for a country/region's economy

Experience with International Cluster Cooperation in the Danube Region

All of the 44 respondents declared that international cluster cooperation is beneficial to a country or region's economy. Among these benefits (table 10), the innovation aspect was again ranked highest with the benefit of access to new technologies, products, processes or services. Ranked second is again the export-driven aspect of access to new markets, followed by the related aspect increased international competitiveness of sectors with international cluster activity. The building of long-term strategic partnerships is the fourth most important benefit of international cluster cooperation. The inward-looking aspect of the benefit of visibility of a country or region as an attractive business is ranked fifth. Relatively far behind is again international cluster cooperation as an improved method to tackle grand societal challenges that do not respect borders. Ranked lowest is however the benefit of outsourcing in the regional neighborhood, the so-called near-shoring.

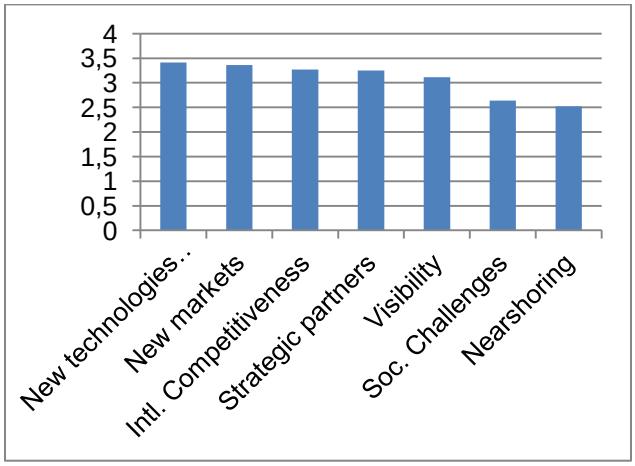

Table 10: Rating of expected benefits of international cluster cooperation

Since cluster policy makers in the Danube Region perceive international cluster cooperation as economically beneficial, many of them also instituted policies to this aim. 19 out of 44 respondents detect an explicit policy on international cluster cooperation in their country or region (table 11), 11 more respondents state that international cluster cooperation is included in other policies (table 12). This leaves only 14 respondents, a clear minority, stating that there is no policy on international cluster cooperation whatsoever in their country or region.

Is there any explicit and dedicated national/regional policy (current or planed) on international cluster cooperation in your country/region?	Answer Percent	Answer Total
No	56,82%	25
Yes: (Please specify the name of the policy)	43,18%	19
Total answers		44
Unique Respondents		44
Respondent Reach		100%
Mean		1,43

Table 11: Explicit and dedicated national or regional policy on international cluster cooperation

If there is no explicit policy on international cluster cooperation in your country/region, is international cluster cooperation included in other national/regional policies ?	Answer Percent	Answer Total
No	56%	14
Yes: (Please specify the name of the policy)	44%	11
Total answers		25
Unique Respondents		25
Respondent Reach		56,82%
Mean		1,44

Table 12: Policy on international cluster cooperation included in other policies

32 respondents claim that clusters in their country or region have experience in cooperating internationally (table 13). Only 3 respondents answer this question negatively. The relatively high rate of respondents who do not know whether clusters in their geographic area of responsibility have international cooperation experience can be explained by the fact that policy makers might not have enough insight in the day-to-day business of clusters in order to answer this question with certainty.

Do clusters in your country/region have experience in cooperating internationally (successfully or unsuccessfully) with other clusters, businesses, research institutions or other institutions?	Answer Percent	Answer Total
Yes : (How many clusters have experience in international cooperation?)	72,73%	32
No	6,82%	3
I do not know	20,45%	9
Total answers		44
Unique Respondents		44
Respondent Reach		100%
Mean		1,48

Table 13: Experience in international cluster cooperation

According to the 32 respondents who claimed that their clusters had experience in international cluster experience, the survey reveals that the most important partner countries for such international cluster cooperation come from within the EU (table 14). Out of the top 15 partner countries, 10 even lie in the Danube Region. The aim of the EUSDR to strengthen cluster cooperation among Danube Region clusters therefore already has a strong basis in the form of contacts and previous cooperation experience. The first non-EU partner country is Turkey on rank 17, closely followed by the US (rank 18), and China ranks 20th. It needs to be cautioned that the answers from countries with multiple respondents will figure more prominently in this table, as their responses relating to the same incident of cooperation could be recorded several times.

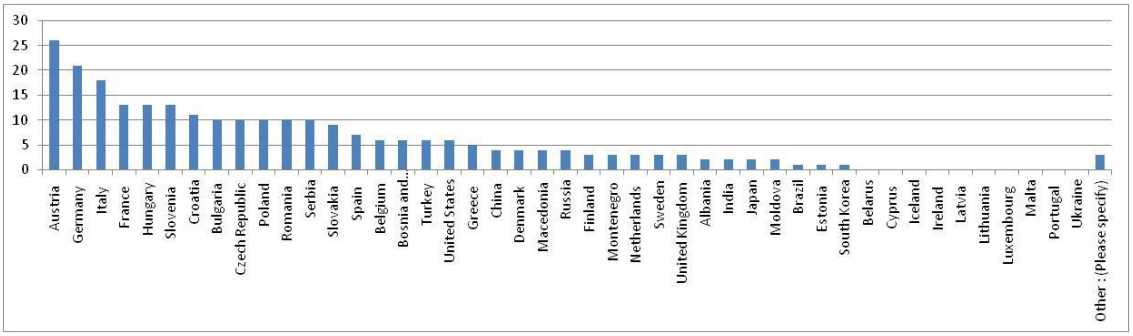

Table 14: Most important partner countries for international cluster cooperation (multiple responses)

8 out of the 32 respondents who stated that clusters in their geographic area of responsibility claim that attempts for international cluster cooperation have sometimes failed in the past (table 15).

Have attempts for international cluster cooperation ever failed in your country/region?	Answer Percent	Answer Total
Yes	25%	8
No	15,63%	5
I do not know	59,38%	19
Total answers		32
Unique Respondents		32
Respondent Reach		72,73%
Mean		2,34

Table 15: Failed attempts of international cluster cooperation

The reasons for failure of international cluster cooperation were predominantly a lack of funds for the cooperation project, followed by the lack of commitment from either party and a lack of skills of cluster managers from either party (table 16). Funding and cluster excellence are therefore crucial aspects in order to successfully implement international cluster cooperation projects. Less important were issues such as language barriers or cultural differences.

What are reasons for failure of international cluster cooperation, according to the experience in your country/region? (Multiple responses possible)	Answer Percent	Answer Total
Regulatory barriers to international cooperation	11,76%	2
Lack of policy incentives	5,88%	1
Lack of commitment from either party	17,65%	3
Lack of funds	23,53%	4
Unclear contract requirements / division of labour	5,88%	1
Cultural differences	5,88%	1
Language barriers	11,76%	2
Lack of skills of cluster managers from either party	17,65%	3
I do not know	0%	0
Total answers		17
Unique Respondents		8
Respondent Reach		18,18%
Mean		4,59

Table 16: Reasons for failure of international cluster cooperation (multiple responses possible)

Expected Benefits from the EUSDR for International Cluster Cooperation

42 of the 44 respondents stated that they expect that the EU Strategy for the Danube Region will facilitate international cluster cooperation. The benefits they expect from the EUSDR can be grouped in four thematic areas as seen in table 17, namely access to markets together with access to new innovative capacities (red), cluster excellence support (blue), funding (green), and organizational support of international cluster cooperation (black).

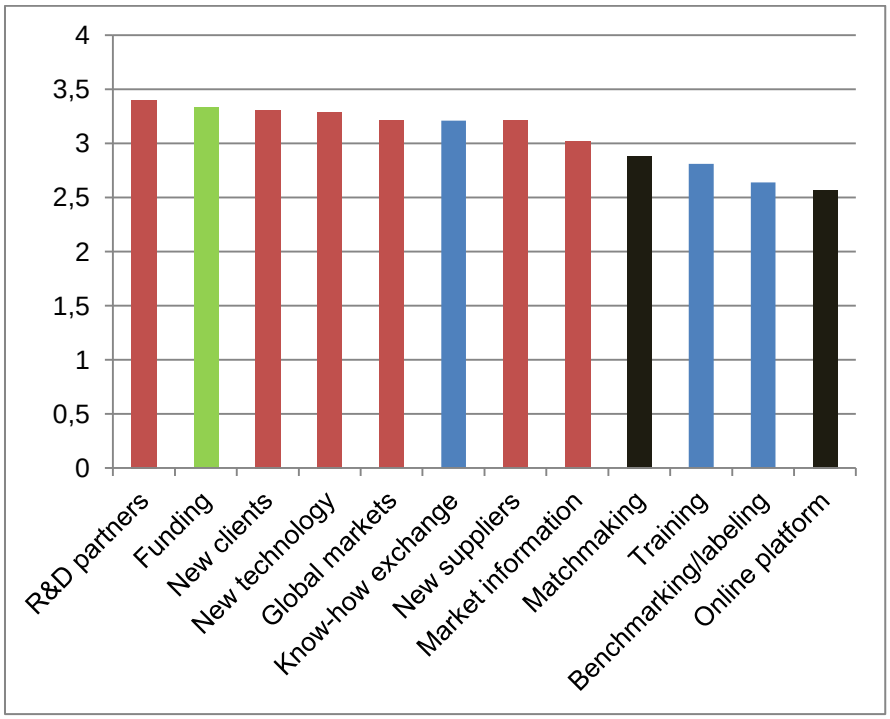

Table 17: Rating of expected benefits of the EUSDR regarding international cluster cooperation

In the survey, access to markets and innovative capacities as well as access to funding opportunities were given the clear priority in terms of expected benefits for international cluster cooperation through the EUSDR. In particular, the issue of finding R&D partners in the Danube Region ranks first, even before funding opportunities, followed immediately by the benefits of access to new clients in the Danube Region, access to new suppliers in the Danube Region, and the linking up of clusters for joint access to global markets. Only then the first item related to cluster excellence, namely know-how exchange on how to use clusters for economic benefit, comes into play. Access to new suppliers in the Danube Region and, to a lesser extent, information about markets in the Danube Region round up the picture of cluster policy makers' favored benefits from the EUSDR.

Ranked among the low priorities are organizational support in the form of EUSDR support for matchmaking events among clusters in the Danube Region and web-based solutions for matchmaking of clusters in the Danube Region, for instance through an online platform. Also EUSDR support for training opportunities for cluster managers and others, as well as for cluster benchmarking and labeling were ranked among the lowest.

It needs to be stressed that the survey primarily targeted cluster policy makers, who may or may not have thorough knowledge of a cluster manager's needs in order to run a successful cluster. It is conceivable that a survey purely conducted among cluster managers might have resulted in higher ranks for items related to cluster excellence and organizational support, as they would not so much focus on the overall strategic objectives of cluster policies, but rather on the day-to-day business of managing these structures.

Conclusions

The survey has shown that cluster policies are deemed important and are therefore instituted in almost all countries of the Danube Region, albeit with very different financial attributes. Many clusters already have experience in international cooperation, in which the innovation and sales aspects have highest priority. In order to further facilitate such international cluster cooperation, the EUSDR should strive to financially support future cluster projects and help to improve cluster management skills in the Danube Region.