

7. Cluster Development in Two Hungarian Regions – Success and Challenge

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The Hungarian government supports and finances for the creation of business clusters since 2000. The Pole Programme outlines four consecutive phases of cluster development and provides the framework for cluster subsidies in Hungary for the years 2007-2013. Regional calls for proposals supporting the clustering processes were open in 2008 and 2011. This paper addresses how the Hungarian clusters performed on these calls as well as how many clusters were able to submit project proposals and to begin the program's development process? It is interesting to observe also the willingness of local companies to submit cluster projects: is there any difference between regions in terms of submitted/approved projects? Statistics on the submitted and approved projects in North Hungary and North Great Plain indicate that company cooperation could only submit projects for the 1st or the so-called "start-up" cluster phase. While currently examining the applicants' activity, today it seems that the majority of the clusters cannot deepen their cooperation and meet the requirements of the 2nd phase – or at least not the way it was planned in the governmental programme. The preliminary results of interviews reveal the reasons why clusters did not apply for the 2nd phase of clustering.

Keywords: cluster, initiative, failure, development stages, financing, call for proposal, willingness, Pole Programme

1. Introduction

Governmental support for clusters has existed since the beginning of 2000s when the Széchenyi Plan and later the National Development Plan were launched and provided the first financial assistance to build clusters. The National Development Plan was the first National Strategic Reference Framework and was consistent with the EU financial periods. This was followed by the second, the New Hungary Development Plan between 2007-2013 providing much larger source of financing than the previous framework: theoretically providing 26.5 bn EUR during the 7 years of the programming period. In 2010 the programme was slightly changed and renamed to New Széchenyi Plan. The operative programmes of these development plans (co-financed by the EU) provide financial source of cluster supporting measures in Hungary. These measures are non-refundable grants provided through call for proposals¹. The Pole Programme – started in 2007 – was the first complex framework of

¹ By the time this article was edited (April 2013) no call for proposals was available for clusters, but new calls are expected to open in the new programming period from 2014.

cluster policy and strategy in Hungary, which defined a four-staged development programme for governmental cluster support. Until 2013, no mid-term or ex-post evaluations were done on the Pole Programme and there is little data indicating how the financed clusters operate and develop. Did the money serve the intended purpose? This paper examines the questions and problems appeared after the cluster call for proposals opened in 2007.

2. Cluster development in the Pole Programme

The Pole Programme included increased resources for development of clusters and cluster members than previous programmes. It introduced an accreditation process for selecting and qualifying clusters, and a special unit (Pole Programme Office) dedicated to the programme implementation was set up as well (MAG 2012).

Four phases of cluster-development were defined in the Programme: start-up clusters, developing clusters, accredited clusters and pole innovation clusters. The features of each step are shown in Figure 1.

Figure 1 The four stages of cluster development in the Pole Programme

	Start-up clusters	Developing clusters	Accredited clusters	Pole innovation clusters
Supported activities	Cluster management, joint services	Cluster management, joint services, investments	No financial support	Services, investments, joint centres
Subsidy for the approved clusters	EUR 0.06-0.2 M	EUR 0.2-0.8 M	No financial support	EUR 6-17 M
Approx. no. of approved clusters	150-200	50-100	25-50	5-15
Aim	Give opportunity to each initiatives	Support to the active cooperation	Accredited clusters get eligibility for other special calls	Complex infrastructure development
Selection criteria	No strict criteria	Export, high value added focus	Export, complex economic criteria	

Source: author's own construction based on Pole Programme Office

There were no strict criteria to apply for the start-up cluster, it was easy to meet the requirements (max amount of subsidy: 0.2 M EUR). But clusters applying for more subsidy (max 0.8 M EUR) in the developing type had to undertake a joint investment. Fulfilling the criteria of the 3rd step and acquiring the title “accredited innovation cluster” did not mean

financial support – the point of accreditation was to “recognize those clusters that are over the start-up and developing phase and operating successfully for years, and qualifying them eligible for special subsidy programmes” (MAG 2012). The pole innovation cluster phase, the 4th step, was not implemented.

The government used the Pole Programme to support the formation of clusters with direct financial support and from that process choose the best of them with the accreditation process for a highly scaled, complex infrastructure development programme for the future. The grants on the first two levels (start-up and developing clusters) were financed from the Regional Operative Programmes, meaning that the government separated budget for each NUTS 2 level regions, from which the regions opened their own cluster call for proposals. The intermediate bodies are regional organisations but the budget and the managing authority is a national level entity – the latter decides on the approved projects as well. The start-up and the developing cluster calls were twice announced in the seven Hungarian regions: in 2008 and 2011.

As previously mentioned the accreditation process was organized on national level. If a cluster had been accredited, it acquired eligibility for special technology development call for proposals in the Economy Development Operative Programme dedicated to accredited clusters or to their members. In some special cases an accredited cluster member could get bonus points during the evaluation process, thus improving approval consideration. The title “accredited innovation cluster” expired automatically after 2 years, and the clusters had to apply for it again. The 4th stage, the “pole innovation cluster” step was elaborated, but not opened for the application process. Important to note is that in 2011 a new, a 0th stage of cluster development was announced: the company cooperation. Group of companies in this stage could get subsidy for joint investment and there were no need to justify the cluster-like operation.

The Pole Programme was started in 2008: the first call for proposals was announced and since that time the accreditation call has been continuously open. 3 years after the initial call (in 2011), as already mentioned, a second round of cluster calls was opened. Using a wide cluster definition, the start-up call was to give a chance for each cluster initiative in the region (that defines itself as cluster) to set up a management organisation, introduce services and build databases. Special rules applied: Those clusters that were approved as start-up in 2008 *were not eligible to apply as start-up in 2011 again*. If a cluster was approved as developing in 2008 it could apply for developing again in 2011, but not for lower level phase (start-up). The accreditation level (3rd) had no similar rules: it was opened for all types of clusters.

3. Questions and answers

My research focuses on the preconditions of creating clusters, and examines if these conditions exist in Hungary and if the subsidies of the Pole Programme were the appropriate tools to develop clusters.

My concerns regarding the Hungarian cluster development measures can be articulated through three hypotheses:

- 1) Hungary lacks important preconditions defined in international literature to develop successful clusters.
- 2) Therefore the start-up and developing cluster calls were not efficient, in most cases did not result in well-functioning, successful clusters.
- 3) The newly set up clusters could not proceed to the next development stages defined in the Pole Programme.

Interviews and questionnaires will be organized with policy makers and practitioners on national and regional level to verify the first hypothesis.

In order to verify the second hypothesis I have examined the result of cluster call for proposals in two regions: North Hungary (hereinafter NH) and North Great Plain (NGP), and presented as a short statistical analysis. The ongoing interviews and a regional questionnaire will provide answer to the question on which clusters are successful and functioning well from the above.

The results of the third hypothesis are the willingness of submitting proposals in the two regions – shown in Table 1 – and the cluster life paths summarized in Table 3. These figures show that only a few clusters could proceed to the next development stage defined by the Pole Programme.

4. Statistical analysis on the willingness of cluster creation in the two regions

After analysing the *submitted* projects for the two cluster calls for proposals in NH and NGP, we can select areas more willing and ready to cooperate than others. These concentrations may have the critical mass of companies, one factor often mentioned in the literature as one of the most important criteria for clustering processes (e.g. in Andersson

2004, OECD 2005, Ecotec 2003). The most important results indicated by the spatial distribution² are the following:

The spatial relation was studied based on two aspects: (1) place of implementation of the cluster project; (2) company seat of the cluster member organisations. (1) The weight of the two region centres Miskolc and Debrecen city: Statistics show that in 2008 53% (19 pcs) of submitted cluster projects in NH were from Miskolc and 38% (12 pcs) were submitted in 2011. The NGP region, Debrecen, has less weight: in 2008 40% (8 pcs) and in 2011 29% (4 pcs) of submitted projects had Debrecen as the origin of implementation (Table 1):

Table 1 Number of cluster member organisations and their geographic concentration according to the submitted cluster project (pcs, %)

North Hungary (NH)	2008		2011		North Great Plain (NGP)	2008		2011	
total number of cluster members	506	100.0%	504	100.0%	total number of cluster members	392	100.0%	279	100.0%
from what NH	415	82.0%	329	65.3%	from what NGP	350	89.3%	232	83.2%
other region	91	18.0%	175	34.7%	other region	42	10.7%	47	16.8%
Miskolc ³	164	32.4%	100	19.8%	Debrecen ⁴	113	28.8%	71	25.5%
Eger ³	29	5.7%	51	10.1%	Szolnok ⁴	19	4.8%	16	5.7%
Salgótarján ³	11	2.2%	12	2.4%	Nyíregyháza ⁴	55	14.0%	35	12.5%

Source: author's own construction. Data gathered by the kind permission of the North Hungarian Regional Development Agency and the North Great Plain Regional Development Agency.

The following conclusions can be drawn:

- In NH many more clusters but with a smaller size (less cluster members) had submitted projects than in NGP: 36 and 32 submitted cluster project in NH, with 15 number of members in average in both years. NGP had 20 and 14 projects, with the average size of 19-20 member organisations.
- Cluster members stayed inside the region: In NH the proportion of extra-regional cluster members were only 18% in 2008, but increased to 35% in 2011. In NGP this ratio was 11% and 17%. The increase means that the clusters of the second call have a larger regional distribution of member organisations in both regions.

² Limits of the methodology: cluster members were allowed to participate in more than one cluster, but I did not differentiate between them. For example: If a company had membership in 3 clusters (not common) it was counted three. Because of this methodology the figures reflect the number of *memberships* rather than the number of real business or public entities. Nevertheless, there were very few organizations (especially research centres or universities) that had member status in more than one cluster.

³ Cities in North Hungary region

⁴ Cities in North Great Plain region

- No foreign members: the four call (2 years, 2 regions) resulted 1681 cluster members altogether in the submitted projects, but there was only one entity from abroad: an organisation from Hurbanovo (Slovakia) in 2008.
- Cluster members were less concentrated in the region centres in 2011 than in 2008: In 2008 Miskolc had 32.4% and 19.8% in 2011, while Debrecen had 28.8% and 3 years later 25.5% of cluster members of their own region.

5. Examining the established clusters

The start-up, developing and accredited stages were defined as consecutive steps of cluster development in the Pole Programme: the developing calls targeted to support the best start-up clusters, the accreditation were to select the best performing developing clusters. However, in practice this did not work.

- 1) Only a few cluster have submitted project ideas for the developing level (Table 2). In NH 13 start-up clusters were approved and received subsidy in 2008, but only 3 of them have applied for the developing stage in 2011. Moreover one of them was rejected. These numbers are more considerable in NGP: none of the 10 start-up clusters were able to submit project in 2011.
- 2) Thus, the second round of cluster calls (2011) did not support the already established clusters in 2008. Instead, financial resources were once again invested in the brand-new cluster initiatives. In NH there were 20 financially supported cluster initiatives and only 3 of them have submitted project and 2 were approved (10%) in 2011. In the second call 29 new cluster initiatives applied for subsidy, 21 of these applicants were approved. NGP had 14 approved projects in 2008, no one applied again in 2011, but 11 new cluster initiatives were approved out of the 14 submitted. It is important to note that the amount of subsidy for which the submitted projects applied was only the half of the available regional cluster budget.
- 3) Four clusters had managed to be accredited in NGP. Only one of them was previously start-up cluster in 2008, other two clusters have never applied for the start-up nor for the developing stage. It happened that a cluster could fulfil the accreditation criteria even though its start-up project proposal was rejected.

Table 2 The number of submitted and approved cluster projects in North Hungary and in North Great Plain

region	cluster development stage	2008 approved (submitted)	2011 approved (submitted)	No. of accredited clusters*
North Hungary	company cooperation:	-	2 (2)	2
	start-up:	13 (32)	17(25)	
	developing:	4 (4)	4 (5) from which former start-up: 2 (3)	
	other clusters that have never applied	0**		
North Great Plain	vállalati együttm.:	-	0 (0)	4***
	start-up:	10 (16)	9 (12)	
	developing:	4 (4)	2 (2) from which former start-up: 0	
	other clusters that have never applied	3**		

Source: author's own construction. Data gathered by the kind permission of the North Hungarian Regional Development Agency and the North Great Plain Regional Development Agency.

Note: *clusters that have at least one successful accreditation, **preliminary assessment, ***two of them never applied for the start-up or developing stage, the third has applied for start-up but was not approved.

I am organizing 10-15 personal interviews with national and regional policy makers, researchers and practitioners. The first three interviews have already taken place and confirm my hypothesis: in several cases the results of the above mentioned non-refundable financial subsidies are not bottom-up cluster initiatives but as groups of organisations where the composition of the group has been tailored exactly to the requirements of the call while missing real cooperation and connection between its members. As an example, this is supported by the results of the interview with Mr Péter Keller⁵, who underlined: the reason why we cannot find more clusters with developing phase project is that only 10-15% of the approved clusters in 2008 wanted to develop a cluster, others used the cluster only as a tool to get the financial subsidy.

⁵ Manager of the Cluster Development Office, MAG Zrt.

Table 3 Cluster life paths in North Hungary region in terms of the Pole Programme cluster development phases

		2008	2009	2010	2011	2012	2013
clusters in North Hungary	Bioenergetikai Innovációs Klaszter						
	Dél-Borsodi Egészségügyi-Szociális Klaszter						
	Egerfood Élelmiszerbiztonsági és Technológiafejlesztési Klaszter						
	ENIN Környezetipari Klaszter		A	A	A	A	
	Északi Várak Útján Idegenforgalmi Klaszter						
	Észak-magyarországi Energiabiztonsági Klaszter						
	Észak-magyarországi Informatikai Klaszter			A	A	A	A
	Észak-magyarországi KKV Innovációs Szolgáltató Klaszter						
	Észak-magyarországi Logisztikai szolgáltató Klaszter						
	Észak-magyarországi Műanyagipari Klaszter						
	Geotermikus Klaszter						
	Gépgyártói, Beszállítói és Technológiai Fejlesztési Klaszter						
	HUNSPACE Magyar Űripari Klaszter						
	Magyar Anyagtudományi és Nanotechnológiai Klaszter						
	NOHAC Észak-magyarországi Autóipari Klaszter						
	Ökoland Környezetipari és Hulladékgyártó Klaszter						
	Zöld Utak Turisztikai és Vendéglátási Klaszter						
	Hevesi napelemes erőmű telepítés						
	Amaránt Innovációs Klaszter						
	COREPLAST Műanyag Újrafeldolgozó Klaszter						
	Egri Borászati Klaszter						
	ENALTER Észak-Magyarországi Alternatív Energetikai Klaszter						
	Energetikai-, Gép- és Acélszerkezetgyártó- és Mechatronikai Beszállító K.						
	Északkelet-magyarországi Klaszter a húsipar biztonságáért						
	ÉMAFA Észak-Magyarországi Faipari Klaszter						
	Észak-magyarországi megújuló energiaparkok klaszter						
	Észak-magyarországi Turisztikai Innovációs Klaszter						
	Gömör-Tornai Hagyományos Termék- és Szolgáltatásfejlesztési K.						
	Hangya 2010 Észak-magyarországi gazdaságfejlesztő Klaszter						
	Infostrada Klaszter						
	Miskolc Belvárosi Gazdaságfejlesztő Klaszter						
	NAUTILUS Klaszter						
	Optimalizált Iroda Klaszter						
Országos Megújuló Energia Klaszter							
Tudomány és Innováció a fenntartható jövőért klaszter							
Zempléni Helyi Termék és Szolgáltatás Klaszter							
company cooperation:							
start-up							
developing							
accredited		A					

Source: author's own construction

Table 4 Cluster life paths in North Great Plain region in terms of the Pole Programme cluster development phases

		2008	2009	2010	2011	2012	2013
clusters in North Great Plain	Első Magyar Számviteli és Adószakértői Klaszter						
	Észak-alföldi Informatikai Klaszter						
	Észak-Alföldi Regionális Élelmiszer-Innovációs Klaszter						
	Észak-Alföldi Regionális Élelmiszerlánc-Innovációs Klaszter						
	Észak-alföldi Termál Klaszter						
	Innostrada Észak-alföldi Regionális Innovációs Kompetencia K.						
	Innovatív Turizmus Klaszter						
	Kabai Zöldipari Klaszter						
	Létesítményenergetikai Klaszter						
	Plan-Net.hu Építőipari Mérnöki Hálózati Klaszter						
	PRIZMATECH Debreceni Műszergyártó és Fejlesztő Klaszter						
	Róna Juh Klaszter						
	Szilícium Mező Regionális Informatikai Klaszter			A	A	A	A
	Záhony Térségi Logisztikai Klaszter						
	Alföldi Elektronikai klaszter						
	Első Magyar Digitális Tartalomszolgáltató és Online Marketing Innovációs K.						
	László Károly Gépipari Klaszter						
	MSE Magyar Sport- és Életmódfejlesztő Klaszter						
	Szabolcsi Alma Klaszter						
	Szatmár-Beregi Helyi Termék Klaszter						
	TEnEHI - Termálenergia Hasznosító és Innovációs Klaszter						
	Zöld Áramlat Megújuló Energetikai és Innovációs Klaszter						
	Zöld Technológia Klaszter						
	Pharmapolis Innovatív Élelmiszeripari Klaszter			A	A	A	A
	Termál Egészségipari Klaszter		A	A	A		
	PHARMAPOLISZ Debrecen Innovatív Gyógyszeripari Klaszter		A	A	A	A	A
company cooperation:							
start-up							
developing							
accredited		A					

Source: author's own construction

The three interviews indicated that the original and appropriate aim of the Pole Programme was to give a chance to as many organisations as it is possible to initiate and to develop a cluster, but the intervention and the requirements of the calls resulted in non-sustainable clusters. The logic the programme used to award subsidies and to operate would have been more helpful if well established cluster initiatives had already been operating in Hungary with years of cooperation between the members.

According to Mr Attila Nyiry⁶ the whole cluster subvention framework was designed to foster only a certain type of cluster, and this was not favourable because other types of clusters (without significant export capability, SME members or research orientation) were excluded from the programme while the new cluster initiatives were indirectly forced to set up their team in conformity with the requirements. Szanyi (2008) predicted similar problems. Moreover, the four stages of the cluster development conception were not readily adaptable to the cluster life cycles in Hungary, as there was no practice for cluster-like cooperation, nor need for subsidies to finance joint investments in start-up clusters.

Another important question during the interviews and the work on the statistics of cluster projects was the following: Why were there so few clusters applying for development stage call in 2011? Why were the start-up clusters of the 2008 call not able to submit a project proposal for the development stage call in 2011? The cluster life paths and development are shown in Table 3 and Table 4.

Two interviewees gave me the same answer that I predicted:

- If a cluster submitted a project to the development call, the mandatory joint investment would put too many administrative burdens onto the companies concerned, and the term *joint investment* and *cluster* is not well defined and elaborated in the Hungarian legal regulation.
- The cluster members (companies and others) could not find a good solution as to handle the preceding problem because of the low level of trust between each other.

Table 4. denotes that there were only 4 clusters in the two examined regions that had approved projects in both of the calls. It is the development path of the North Hungarian IT Cluster and the HUNSPACE Hungarian Space Cluster (both highlighted in bold and italic) which reflect the best the Pole Programme conception: these initiatives started as start-up cluster in 2008, continued as developing cluster in 2011, and the IT cluster was accredited in 2010.

6. Conclusion

Based on the statistics on submitted and approved cluster applications in the two regions I found that the Pole Programme financed several new cluster initiatives. In terms of the

⁶ Executive officer of NORRIA North Hungarian Regional Innovation Agency Nonprofit Ltd.

spatial distribution, the most of the applicants came from the relevant regions; there was only a small fraction of was extra-regional organisations (NH: 18%, NGP: 11%). In 2011 this concentration was weakened. The share of regional centre cities is high, but this decreased in both regions on the call opened in 2011. The applicant clusters (except one) had no members from foreign countries.

Generally 87% (27 out of the 31) of the newly formed clusters approved in 2008 from North Hungary and North Great Plain did not proceed on the predefined development path of the programme. According to the 3 interviews, the main reason was the a) mandatory joint investment required on the second stage of cluster development (there were no local need for such a support), b) the strong requirements for applicants to have innovation and research profile and c) the missing strong links and trust between the cluster members.

My future study is to continue the interviews to support or refute the statements above, to collect direct information from companies, and to investigate what happened to the remaining clusters that applied only in 2008 or 2011. By completing the previously mentioned interviews and a questionnaire with cluster managers I am seeking to answer whether circumstances are suitable for cluster-based economy development in Hungary, which clusters are functioning well and prospering despite the problems outlined in this study, and what kind of intervention do the Hungarian cluster initiatives need to be successful.

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