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* Eduardo Medeiros, Centro de Estudos Geográficos (CEG) – Institute of Geography and Spatial Planning (IGOT) – Edifício da Faculdade de Letras – Alameda da Universidade, 1600-214 Lisbon University, Portugal, emedeiros@campus.ul.pt

Cross-Border Cooperation and Territorial Impact Assessment in the EU

Eduardo Medeiros*

Abstract

Border regions in the European Union (EU) account for roughly 40% of the total population and 60% of the EU territory (border NUTS3). These regions have had a specific financial support from the EU Structural Funds, since 1989, firstly through the INTERREG-A Community Initiative (1989-2006), and more recently through the Territorial Cooperation Objective (2007-2013), in order to help them overcome the disadvantages created by national administrative boundaries in a context of the Single Market emergence. Despite representing less than 3% of the EU Structural Funds total allocation, from 1989 to 2013 more than 15 billion € were used in cross-border cooperation (CBC) projects, in all areas of territorial development. Therefore, the use of Territorial Impact Assessment (TIA) procedures is largely justified in assessing the effectiveness and efficiency of such programmes, namely in reducing the barrier effect produced by the presence of the borderline, and also in valorising the territorial capital of the border areas. In this light, this paper proposes and applies a cross-border cooperation TIA evaluation matrix, with appropriate dimensions and components, which could be adapted to the TARGET_TIA tool, with the ultimate goal of assessing the territorial impacts of cross-border programmes.

Keywords

Territorial impact assessment, cross-border cooperation, TARGET_TIA, territorial cooperation, border regions, INTERREG-A

1. Introduction and methodology

Territorial Impact Assessment (TIA) procedures can be regarded as the ‘new kid on the block’ of the Impact Assessment (IA) procedures. In fact, and unlike the EU proposed, IA procedure (see EC, 2009; ESPON, 2013), the SEA (Strategic Environmental Impact Assessment), and the EIA (Environmental Impact Assessment), TIA procedures are not EU mandatory (see Tscherning et al., 2007). Notwithstanding, these procedures have the potential to replace the mentioned impact procedures, as they necessarily include all the main dimensions of territorial development (economic competitiveness, social cohesion, environmental sustainability, territorial governance, spatial planning).

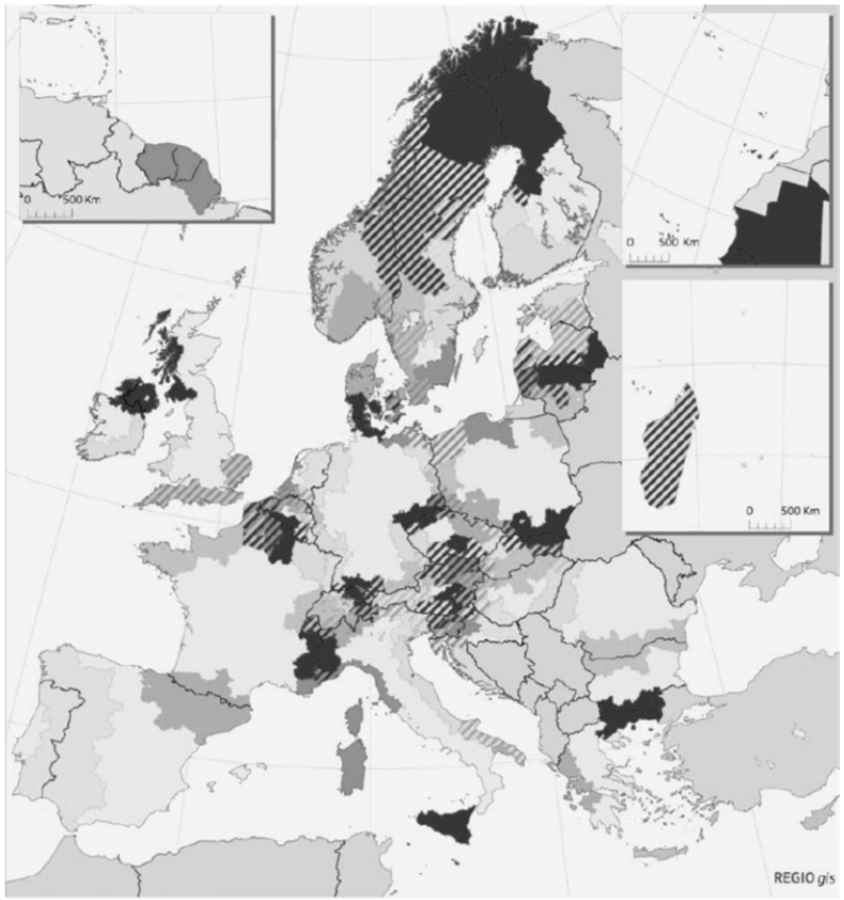
This recognition for the need of a more holistic and comprehensive IA procedures in evaluating the potential impacts of EU directives (ex-ante) and the EU Structural and Cohesion Funds (ex-post) led to development of several TIA tools within the ESPON Programme (e.g. TEQUILA, STeMa, EATIA, ARTS). Amongst all these initial attempts to capture the territorial impacts of the EU policies and programmes, we highlight the methodological robustness of the TEQUILA model (ESPON 3.2 2006). Yet, amongst other shortcomings, this tool does not contemplate the possibility of an ex-post evaluation, as the proposed TARGET_TIA tool does (Medeiros 2013a).

For this and other reasons, we decided to use the TARGET_TIA tool to assess the territorial impacts of the CBC projects. This TIA methodology will be scrutinized in the second topic of this article, right after a summarized overview of the importance of the CBC process in the EU and the Czech Republic. The last topics will shed some light on the TARGET_TIA methodology, and its operationalization with a proposed evaluation matrix to assess territorial impacts of cross-border programmes.

2. Cross-border cooperation in the EU and Czech Republic

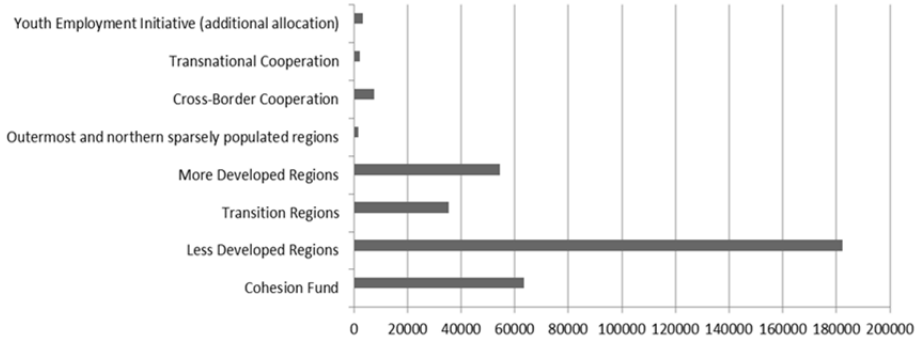
The European Territorial Cooperation is one of the two main goals for the present programming cycle of EU Cohesion Policy (2014-2020). Within this objective, CBC programmes (Figure 1) receive more than ¾ of the total financial allocation to this fund, with the remaining part being put on the transnational cooperation objective. And, despite being a relative small budget objective, when compared with many others (Figure 2), CBC programmes are expected to receive around 7.548 million euros, in this programming period.

Figure 1: Cross-Border Cooperation Programmes in the EU – 2014-2020



Source: (EC, 2014)

Figure 2: Total EU Allocations of the Cohesion Policy 2014-2020 (million €) per policy category



Source: Data - DGRegio - author elaboration

Here, for instance, the Czech Republic is one noteworthy example of the importance of the CBC programmes in the EU space[1]. Indeed, with the exception of the country's capital NUTE3, the remaining territory is eligible for such type of programmes. Moreover, for the 2014-2020 programming period, the five Czech CBC programmes will cover most priorities related to the reduction of the barrier effect along the border area (Table 1), and are expected to receive a financial aid (EU + national funds) of around 870 million €.

Table 1: Czech CBC Programmes main priorities relation with the barrier-effect dimensions

CB Programme	Institutional /Urban	Economy /Technology	Social /Cultural	Environment /Heritage	Accessibilities
CR-Bavaria	X	X	X	X	
CR-Poland	X			X	X
CR-Austria		X	X	X	X
CR-Saxony		X	X	X	
CR-Slovakia		X	X	X	X

CB – Cross-Border; CR – Czech Republic

All things considered, these programmes will also touch all the four dimensions of territorial capital valorisation (see topic 3), especially if they improve project selectivity, and the "coherence with programmes under

[1] https://www.strukturalni-fondy.cz/en/Fondy-EU/Programy-2007-2013 and http://ec.europa.eu/regional_policy/country/prordn/search.cfm?gv_pay=CZ&gv_reg=ALL&gv_obj=11&gv_the=ALL&LAN=EN&gv_per=2

the 'investment for growth and jobs' goal and other EU or national programmes in order to exploit synergies for interventions in different thematic areas" (EC 2012: 16). Also, the new EU Cohesion Policy legal framework envisages an increased focus on results and impacts, which justifies the use of a TIA procedure to assess the programme's operationalization success.

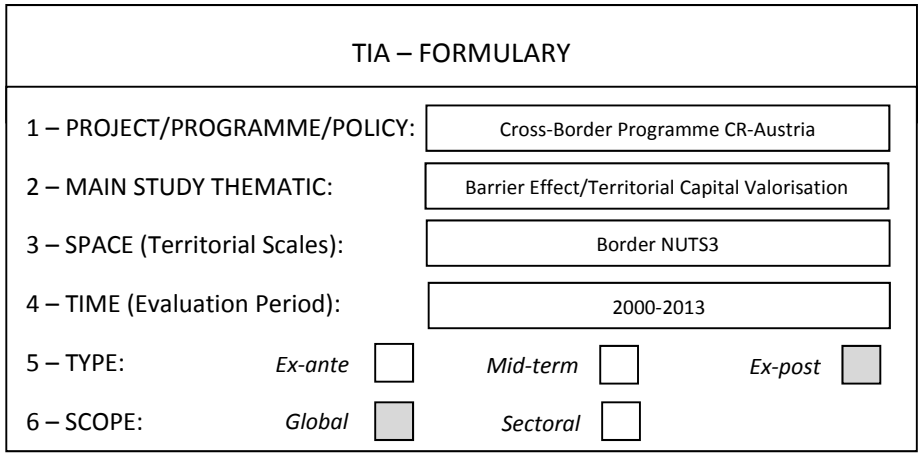
3. The TARGET_TIA in a nutshell

In synthesis, the TARGET_TIA is a multidimensional, multivector, and flexible (to several policies) TIA methodology, which allows for an ex-ante and/or an ex-post evaluation procedure. In the end, a final potential impact is produced, varying from an extremely positive potential territorial impact (+4) to an extremely negative one (-4). In sum, the operationalization of the TARGET_TIA requires the following steps:

1. Decide if it makes financial sense to produce a TIA report;
2. Decide what is going to be evaluated (theme);
3. Identify the main (goals) of the evaluated policies/programmes/ projects;
4. Select the appropriate territorial scale of the evaluation (space);
5. Select the period of time of the evaluation (time);
6. Select the (type) of evaluation: ex-ante or ex-post;
7. Select the (scope) of the evaluation: global/integrated or a sectoral perspective.

In this light, and taking a concrete example of the application of a TIA in the Czech Republic-Austrian cross-border programme, an initial TIA formulary would look like the one in Figure 3. As stated previously, the relevance of the use of a TIA in a cross-border programme is usually high, as it encompasses a variety of territorial development interventions, and also because of its financial relevance for local and regional development. In this particular example, the 'theme' of the evaluation is the programme itself, while the main goal is focused in assessing the programme's relevance in reducing the barrier effect and in valorising the border region territorial capital.

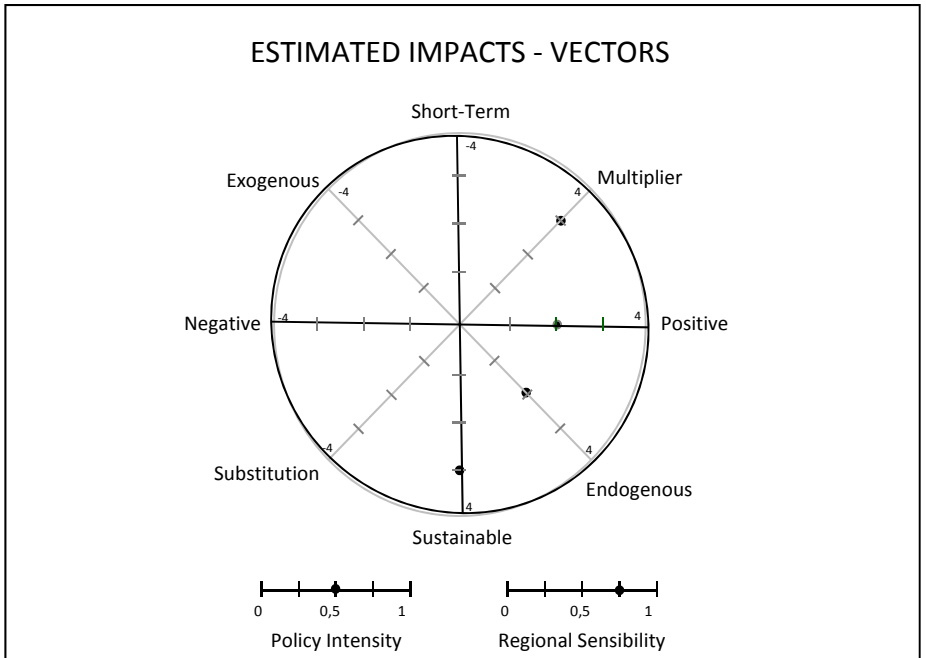
Figure 3: A TIA Formulary for a Cross-Border Programme



Furthermore, the evaluation area is the programme's NUTS3 limit, and the evaluation period could cover, for instance, the last two programming periods (2000–2013). Consequently, an ex-post type of evaluation has to be selected. Also, a 'sectoral scope' should be selected, since the programme covers many territorial development dimensions.

As seen in the next figure (4), the ex-post formula to obtain the potential impact of the evaluated policy/programme is more complex than the ex-ante one, for obvious reasons: in an ex-ante procedure only qualitative info is necessary, while the ex-post requires an additional thorough quantitative analysis. Indeed, it goes without saying that more important than the selection of a TIA methodology, a robust evaluation is mostly dependent on the quality of the obtained data, both quantitative and qualitative. This implies, for an ex-post evaluation: (i) conducting a series of interviews with key-stakeholders; (ii) a deeply analysis of the project's database; (iii) bibliography reading – mainly evaluation reports; and (iv) statistical gathering and analysis.

Figure 4: TARGET_TIA ex-ante and ex-post formulas



EX-POST: TIMr = (EIMp . Ip) . Sp

EX-ANTE: TIMr = (EIMql . EIp) . Sp

TIM = Territorial Impacts of 'p'	
EIM = [(EIMql + EIMqt)/2] (for each 'd')	
EIMql = Estimated Qualitative Impacts (for each 'd')	-4 ≤ EIM ≤ +4
EIMqt = Estimated Quantitative Impacts (for each 'd')	QSI * 4 / 0,25
EI = Estimated Intensity	0 ≤ I ≤ +1
S = Regional Sensibility of 'p' (for each 'd')	0 ≤ I ≤ +1
I = Policy Intensity of 'p' (for each 'd')	0 ≤ I ≤ +1
QSI = Quantitative Synthetic Index (or statistic indicator)	
d = Dimension	
p = Policy/Programme/Project	
r = Region	
max = Maximum	

Source (Medeiros, 2013a) – adapted

In the case of the TARGET_TIA, if a deep knowledge is gathered on the potential impacts of the programme, then the use of this TIA model ends up being quite easy and swift, as it basically requires the insertion of an evaluation value (-4 to +4) for each evaluated component, in the four selected vectors, and the respective values (0 to 1) associated with the two additional evaluation 'corrector elements' (policy intensity and regional sensibility). To better guide the potential impact classification, we suggest the use of the following criteria:

Degree of impact:

- 4 = Very significant positive impacts
- 3 = Significant positive impacts
- 2 = Moderate positive impacts
- 1 = Low positive impacts
- 0 = Null impacts
- 1 = Low negative impacts
- 2 = Moderate negative impacts
- 3 = Significant negative impacts
- 4 = Very significant negative impacts

4. TIA and cross-border cooperation

As explained previously, when a TIA procedure is applied in a cross-border programme it should consider the territorial specificities of the border area and this policy intervention, which has, in our opinion, two main general goals: (i) the reduction of the barrier-effect posed by the presence of the borderline; and (ii) the valorisation of the border region's territorial capital. For each general goal (or dimension), there are several associated components, and respective sub-components, which need to be assessed. For instance, the mitigation of barrier-effect is expected to take place in, at least, five different components: Institution-al/Urban, Cultural/Social, Economy/Technology, Environmental/Heritage, and Accessibilities (see Table 2).

Table 2: Cross-border cooperation TIA matrix

Dimensions	Components	Sub-components/ Indicators (general)
Barrier Effect Reduction	Cultural/Social	- Shared social equipment - Culture events - Language - Legislation (education)
	Institutional/Urban	- Cross-border structures - Urban networks - Multilevel governance - Labour market
	Economy/Technology	- Employment - Innovation - Infrastructures - Entrepreneurship
	Environmental/Heritage	- National parks Collaboration - Tourism - Heritage protection
	Accessibility	- Public transports - Road connections - Rail connections
Territorial Capital Valorisation	Institutional Building	- Implementation of CB Committees - Empowerment and entrepreneur culture - Increasing participation of CB actors - Attenuate legislation differences
	Socioeconomic Cohesion	- Social infra-structures - Increasing human well-being and income - Economic growth and modernization - Vocational training/qualifications
	Territorial Articulation	- Explore functional complementarities - Support polycentric structures - Promote balanced development - Normalise different transport systems
	Environmental Sustainability	- Backup the use of clean energy - Support energy efficiency - Reduce the ecological footprint - Protect CB natural protected areas

Let us go back to a concrete example of applying the TARGET_TIA to a cross-border programme. In this case, we selected the Portuguese-Spanish INTERREG-A/Territorial Cooperation programme, as we spent several years evaluating its main territorial impacts (see Medeiros 2010a, 2010b, 2013b). More concretely, we decided to evaluate this programme

since it started (1989) till the end of the fourth EU Cohesion Policy programming cycle (2013). Hence, after getting all the necessary qualitative and quantitative information to perform a robust and sound evaluation, we will follow the methodological steps proposed by the TARGET_TIA ex-post formula.

In this case, we have to estimate the territorial impacts for each one of the analysed components, and the respective 'policy intensity', and 'regional sensitivity' value. For instance, in the case of the 'road connection' sub-component (see Table 3), the investments from the Portuguese-Spanish programme reached the 700 million € during the analysed period (1989–2013), which represented around 40% of the programme's total budget. Hence, it is needless to say that these investments had a tremendous positive impact in improving the accessibilities along many border crossings, and namely in the Minho-Galicia and the Algarve-Andalucía border areas. In the latter, a flagship INTERREG-A project supported the construction of the International Bridge of Guadiana, which is still the only road passage between Algarve and Andalucía. Indeed, the construction of this bridge had a remarkable impact in boosting the cross-border collaboration, in most territorial development dimensions, in this part of the Iberian border.

In this context, we have no doubt in giving a 3 (Significant positive impact value) to the positive-negative evaluation vector of the TARGET_TIA. In the same vein, the endogenous potential impact was quite significant since the investments in road infrastructures in this European border area helped to improve the regional attractiveness, by reducing the cost of transport between regions, by improving the access to markets, and by reducing the costs of firm production in the region. However, and according to the gathered information, some of these cross-border road infrastructures were neither completed, or are not being explored at their full potential (low number of vehicles). Hence, in the sustainable-short-term evaluation vector, we decided to give a more moderate positive impact value (2).

Finally, in the multiplier-substitution vector, we attributed a very significant positive impact value (4), simply because of the substantial investment put in road infrastructures, in this particular European border area, which was pivotal to boost the cross-border collaboration in all the re-

maining areas of territorial development. As one stakeholder eloquently put it: the first step to establish a perennial and genuine cross-border collaboration programme, is to establish face-to-face contacts. And this requires sound physical connections along the border area, in the first place.

Table 3: Portuguese-Spanish CBC programme – Territorial Impacts Matrix – 1989–2013

Components	Sub-components	Posi/ Nega	Endo/ Exog	Sust/ Shor	Mult/ Subs	Aver-age	Poli/ Inte	Regi/ Sens
Cultural/Social	Shared social equipment	2	3	3	3	2,75	0,25	0,5
Cultural/Social	Culture events	2	2	1	2	1,75	0,25	0,5
Cultural/Social	Language	2	3	3	3	2,75	0,25	0,75
Cultural/Social	Legislation (education)	0	0	0	0	0	0	0,25
	Average	1,5	2	1,75	2	1,81	0,19	0,5
Institutional/Urban	Cross-border structures	3	3	3	3	3	0,75	0,75
Institutional/Urban	Urban networks	2	2	3	2	2,25	0,25	0,5
Institutional/Urban	Multilevel governance	3	2	2	3	2,5	0,25	0,75
Institutional/Urban	Labour market	1	1	1	1	1	0,25	0,5
	Average	2,25	2	2,25	2,25	2,19	0,38	0,63
Economy/Technology	Employment	1	2	2	2	1,75	0,25	1
Economy/Technology	Innovation	1	1	2	2	1,5	0,25	1
Economy/Technology	Infrastructures	2	3	2	3	2,5	0,75	1
Economy/Technology	Entrepreneurship	1	1	1	1	1	0,25	1
	Average	1,25	1,75	1,75	2	1,69	0,38	1
Environmental/ Heritage	National parks collabo-ration	2	1	2	2	1,75	0,25	0,5
Environmental/ Heritage	Tourism	2	3	2	3	2,5	0,5	0,75
Environmental/ Heritage	Heritage protection	2	2	2	3	2,25	0,5	0,75
	Average	2	2	2	2,67	2,17	0,42	0,67
Accessibility	Public transports	0	0	0	0	0	0	1
Accessibility	Road connections	3	3	2	4	3	1	1
Accessibility	Rail connections	1	2	1	2	1,5	0,25	1
	Average	1,33	1,67	1	2	1,5	0,42	1
	General Average	1,67	1,88	1,75	2,18	1,87	0,35	0,76

Note: **Posi/Nega** – Positive vs Negative; **Endo/Exog** – Endogenous vs Exogenous; **Sust/Shor** – Sustainability vs Short-term; **Mult/Subs** – Multiplier/Substitution; **Poli/Inte** – Policy Intensity; **Regi/Sens** – Regional Sensibility.

The easiest way to operationalize the TARGET_TIA tool is through the use of a spreadsheet, as seen in Table 3. Here, the arithmetic average of each evaluated component and sub-components is obtained, together with 'his policy intensity' and 'regional sensibility' value. In the following, an arithmetic average of all the impact values given to the sub-components included in each analysed component is obtained. These average values will give a general impression of the programme impact in each one of these components. The arithmetic average of all of them will give the overall Estimated Impact of the programme.

Going back to our former example, in evaluating the impacts of the road connections' sub-component, the maximum value (1) given in both the 'policy intensity' and the 'regional sensibility' evaluation elements has the following explanation. Firstly, this particular sub-component was, by far, the most financed one since the Portuguese-Spanish cross-border programme had its start. Hence, the policy intensity was extremely high in improving road accessibilities. Secondly, by the time this programme was launched (1989), the cross-border road connections needed to be greatly improved, both in quality (modernization) and in quantity (new crosses – bridges). In other words, the regional sensibility to such type of investments was huge.

Having obtained the General and each Vector Estimated Qualitative Impacts, the next step is to construct two aggregated statistical indexes, using the methodology (formula) used by the United Nations in building the annual Human Development Index (see UN, 2010), with key indicators preferably associated with statistical indicators related with the barrier effect components for two periods of time: (i) at the initial stage of the evaluated programme; and (ii) by the end of the evaluated programme. The basic idea is to detect changes in all of the analysed indicators. The value added to the ex-post formula is the difference between the value from the 'final Statistical Aggregated Index' (2013) and the 'initial one' (1990).

In the end, the Estimated Quantitative Impacts will result from multiplying the resulted 'Barrier Effect Aggregated Index' value by 4, and then to divide this obtained value by 0.25. Next, one obtains the final Estimated Impact value by getting the arithmetic average of the Qualitative and the Quantitative Estimated impacts. Finally, this value is multiplied

by the Policy Intensity average and the regional sensibility average values (see table 4). All of these steps might seem a bit too complicated. Yet, as long as they are performed in a spreadsheet, the results are obtained almost immediately. Also, if there is a need to change any sub-component evaluation, the final programme's potential impact is then modified automatically.

Table 4: Portuguese-Spanish CBC Programme - Territorial Impact Indexes – 1989–2013

	General	CUL/SOC	INS/URB	ECO/TEC	ENV/HER	ACESSI
EIMql = Estimated Qualitative Impacts	1,871	1,813	2,188	1,688	2,167	1,500
Barrier Effect Index	0,355	0,276	0,270	0,120	0,034	0,745
EIMqt = Estimated Quantitative Impacts	5,680	4,416	4,32	1,920	0,544	11,920
EIM	3,775	3,114	3,254	1,804	1,355	6,710
I = Policy Intensity of 'p'	0,354	0,188	0,375	0,375	0,417	0,417
S = Regional Sensibility of 'p'	0,758	0,500	0,625	1,000	0,667	1,000
Territorial Impacts	1,014	0,292	0,763	0,676	0,376	2,796

CUL/SOC – Cultural-Social; INS/URB – Institutional-Urban; ECO-TEC: Economy-Technology; ENV/HER – Environmental-Heritage; ACESSI – Accessibilities.

For simplicity sake, in this particular example of applying a TIA procedure to a cross-border programme, we only used data related to the barrier-effect dimension of cross-border cooperation. Even so, the final territorial potential impact value obtained with the proposed TIA methodology (TARGET_TIA) should be taken into consideration. In this case, it was only a bit over 1 (1,014). This means, that overall, the Portuguese-Spanish cross-border programme produced positive territorial impacts. Yet, they were lower than probably expected by many. Also, another possible conclusion made possible by the use of this methodology is that the impacts on accessibilities were, by far, the most significant ones, in contrast with the impacts on the cultural-social component of the barrier effect.

Conclusions

In this article, we highlighted the need to perform a TIA procedure to assess the main impacts of cross-border programmes. Firstly, because

these programmes, cover many domains of territorial development (e.g. economic competitiveness, social cohesion, territorial governance, environmental sustainability, territorial articulation) and, on many occasions, vast territories. Yet this procedure should be adapted to the specific goals of such programmes which, in our view, are centred in the need to reduce the barrier effect in all its dimensions (institutional-urban; economy-technology, social-culture, environment-heritage, accessibilities), and in valorising the border region territorial capital.

To better understand the operationalization of a TIA procedure on a cross-border programme, we adjusted the TARGET_TIA tool to assess the Portuguese-Spanish INTERREG-A programmes (1989–2013), in a step-by-step explanation. The main reasons for the selection of this TIA tool was its possibility to: (i) evaluate programmes and policies at an ex-post procedure; (ii) include counterfactual evaluation elements such as the multiplier/substitution, the endogenous/exogenous, and the sustainable/short term evaluation vectors, to complement commonly used positive/negative vector; (iii) to be adjusted to different policies and programmes.

At first glance, the operationalization of the TARGET_TIA might look complicated. However, if sound and solid data on the policy/programme's main impacts is available, the completion of the spreadsheet with the model formulas ends up being a quite easy and swift task. In the case of the adjustment to a cross-border programme, we replaced the main dimensions and components of the territorial cohesion (used to assess the impacts of the EU Cohesion Policy) with the dimensions and components of the barrier-effect concept, for simplicity sake. Further, instead of constructing a Territorial Cohesion Aggregated index as the quantitative element of the evaluation, we used indicators related with the components of the barrier effect and built a Barrier Effect Aggregated index for two periods of time (1990 and 2010).

In the end, a general potential impact value, between -4 (very significant negative territorial impacts) and +4 very significant positive territorial impacts) was obtained. Also, the impact values for each one of the analysed barrier-effect dimensions allowed for a more precise programme evaluation. In the proposed example, we did not use the dimensions and components of the second main goal of cross-border cooperation: territorial capital valorisation. Notwithstanding, if the evaluator aims

to include it alongside the dimensions and components of the barrier effect reduction goal, then he has two options. In the one hand he can include all the dimensions and components in the TARGET_TIA procedure, and obtain a general potential territorial impact value of the programme. On the other hand, he can perform two distinct TIA procedures, for each one of these main cross-border cooperation goals, with the advantage of making it possible to see which one had a higher impact value.

At present, the academic community is still taking the first steps in the process of constructing and presenting TIA tools to the national and EU institutions, as a means to include the analysis of the economic dimension of territorial development. Indeed, insofar, the macro-econometric tools and practices in assessing the EU funds, programmes and policies, have been prevailing. This context provides a fertile ground to perfect the existing TIA tools and to the emergence of new ones in nearby future. In this article, we intend to give an additional stimulus to this TIA tools discussion, namely in adjusting such a tool to assess the territorial impacts of a cross-border programme, in the light of the success of the EU territorial cooperation objective in gradually mitigating the barrier effect in the EU borders.

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