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# **The TARGET\_TIA. A complete, flexible and sound Territorial Impact Assessment tool.**

Eduardo Medeiros

## **Abstract:**

This chapter presents the TARGET\_TIA as relevant and flexible Territorial Impact Assessment (TIA) methodology. TARGET\_TIA was created in a context where existing ESPON TIA tools were mainly designed for assessing ex-ante territorial impacts of EU directives. Hence, in view of the need to properly assess the main ex-post territorial impacts of EU Cohesion Policy in several countries in a relevant and sound way, the author decided to design, test and apply its own TIA methodology, which he named TARGET\_TIA. When compared with other existing TIA methodologies, TARGET\_TIA adds the possibility to be used both at an ex-ante and ex-post policy evaluation phases. In addition, it brings to the table the possibility to use counterfactual evaluation elements to allow the production of credible and sound TIA evaluation scores. Following from the implementation of the TARGET\_TIA in assessing the main territorial impacts of EU policies and programmes, mostly at the ex-post evaluation phase, one can conclude that it is a credible, flexible, easy to operate, cost effective and robust TIA methodology which can be applied to projects, programmes and policies, at all territorial levels.

**Keywords:** Territorial Impact Assessment, TARGET\_TIA, EU Cohesion Policy, Iberian Peninsula, Territorial Cohesion, Territorial Development.

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Eduardo Medeiros

Dinâmia' CET-IUL

Instituto Universitário de Lisboa, Lisbon, Portugal

e-mail: [Eduardo.Medeiros@iscte-iul.pt](mailto:Eduardo.Medeiros@iscte-iul.pt)

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## 2.1. An historical background, main goals and application

The genesis of the TARGET\_TIA is easily explained. In early 2011 we embarked in a 6-year study to assess the main territorial impacts of EU Cohesion Policy in four countries (Portugal, Spain, Sweden and Norway). By then, we decided to test existing ESPON TIA tools, such as the TEQUILA (see chapter 3) and STeMA (see chapter 4). These were the first versions of already improved ESPON TIA methodologies. As such, they suffered from several shortcomings, which we immediately detected when testing them for the Portuguese EU Cohesion Policy case-study.

In particular, we found the TEQUILA ESPON TIA tool particularly well designed, with a comprehensive rationale and formula, and with appropriate evaluation elements such as ‘regional sensibility’ and ‘policy intensity’ (see ESPON 3.2, 2006). However, since it was mainly designed to assess ex-ante impacts of EU directives in a simple way, the TEQUILA tool proved to be inappropriate for our research goals of assessing ex-post impacts of policies in a sound way. In addition, just like in most existing ESPON TIA tools, the TEQUILA did not incorporate crucial policy counterfactual evaluation elements, such as substitution, deadweight, and displacement effects (see EC, 1999: 113). Under this background, we decided to elaborate a novel TIA tool with the following main goals:

1. Provide both a *simple to operate* and a *scientifically robust* TIA tool to assess territorial impacts of projects, programmes and policies;
2. Assess territorial impacts in both *ex-post* and *ex-ante* policy evaluation phases;
3. Incorporate *counterfactual evaluation* elements, in order to validate its scores;
4. Use a *simplified evaluation score scale*, which incorporates both potential negative and positive impacts, following from the TEQUILA rationale;
5. Use the TEQUILA useful policy evaluation tuning elements of ‘*regional sensibility*’ and ‘*policy intensity*’, but with a distinct and simplified rationale;
6. When used in the ex-post policy evaluation mode, allow for incorporating *both qualitative and quantitative data* in the formula;
7. Allow for the possibility to use a *simple, flexible and cost-effective spreadsheet* to perform the inclusion of all evaluation scores and automatically produce the impact scores for all selected dimensions and a general impact score. The use of a spreadsheet also permits the automatic cartography of these scores, either via the incorporated Excel mapping tool, or via Geographical Information System (GIS) Software add-on. Moreover, the use of a spreadsheet allows for a simple change/incorporation of the appropriate analytic dimensions required for any territorial impact analysis. Finally, a spreadsheet permits the automatic inclusion of

aggregated statistical indexes, generated in a different sheet, thus facilitating all the process of producing relevant and sound territorial impact assessment scores in a single platform.

In a nutshell, and unlike most ESPON TIA tools (see Medeiros, 2014a), the TARGET\_TIA was designed to assess territorial impacts not in a quick, dirty and simple manner, but in a relevant, sound and simple manner. This is why it took around two years to be designed, tested, and perfected, taking the Portuguese EU Cohesion Policy main ex-post territorial impacts as the first case-study, applied at the national scale (Medeiros, 2013). This was then adjusted to assess the main ex-post impacts of EU Cohesion Policy at the regional scale in the continental Portuguese regions (see the Algarve case in Medeiros, 2014b).

After being published, the TARGET\_TIA tool attracted attention from the Committee of the Regions (CoR), which was dealing with the ESPON QUICK CHECK TIA that, as the name indicates, is only designed to provide a ‘dirty’ and quick check of potential impacts of EU directives, and not proper, sound and credible impact scores. Amid several conversations, we allowed the CoR to test the TARGET\_TIA. By then, it used a territorial cohesion index to input quantitative scores in each analysed dimension. We soon realised that a more simplified option should be available for this process, as this requires specific knowledge in statistics analysis.

Hence, a TARGET\_TIA 2.0 was presented later on with a simplified option to input the quantitative impact scores, now based on the expertise of the person responsible to input those scores on the project/programme/policy which is being assessed. This might turn the scores somewhat more biased, as they are depending on a personal judgement, but they allow for anyone without technical skills on statistics to perform the TIA evaluation process. It goes without saying that the former option (less impartial) is still valid and possible if the evaluator decides to use it.

In the meantime, TARGET\_TIA was used to assess the main impacts of EU Cohesion Policy in Spain (Medeiros, 2017b) and in Sweden (Medeiros, 2016a). Furthermore, for the first time, TARGET\_TIA was fully adapted to assess a specific EU programme: the INTERREG-A (cross-border cooperation) (see Medeiros, 2015; 2018a). This required the inclusion of a complete new set of analytical dimensions and was a valid opportunity to test the TARGET\_TIA in a slightly new policy evaluation environment. In conclusion, it proved that the initial formula is perfectly adapted to assess all kinds of projects, programmes and policies, thus paving the way to replace dirty and simple TIA tools with relevant ones (Medeiros, 2016b; 2017b).

The operationalisation of the TARGET\_TIA in a specific INTERREG-A sub-programme (Inner Scandinavia – Sweden-Norway cross-border cooperation programme) showed that it is particularly adapted to assess the main impacts of this programme, unlike the ESPON QUICK CHECK

TIA tool (see Chapter 8). At the same time, a concrete analytic framework was proposed to apply the TARGET\_TIA in assessing the main territorial impacts of spatial planning instruments (see Medeiros, 2019). Insofar, however, this tool was not yet applied in the ex-ante policy evaluation phase, despite the fact that it is also designed to be used in that policy evaluation framework.

## **2.2. The methodology in a nutshell - elements and formula**

The use of a specific policy evaluation tool presents numerous advantages in terms of guaranteeing an evaluation content and comparability of results. Evidently, these tools must always be adapted to their context of use and to the functions they aim to fulfil. In this regard, the TARGET\_TIA can generically be used in the following evaluation contexts:

1. Assess territorial impacts of projects, programmes and policies: unlike environmental, social or economic impact assessment procedures, territorial impacts imply the assessment of all of these dimensions (EC, 2009; ESPON, 2012) as well as others such as governance and territorial articulation (Medeiros, 2014a). More concretely, TARGET\_TIA is ideal to assess the impacts of large-scale infrastructural projects, such as the construction of an airport or a high-way, as they will inevitably produce economic, environmental, social, and spatial planning related impacts. Likewise, TARGET\_TIA is the most appropriate evaluation tool to assess programmes and policies which have potential socioeconomic, environmental, governance and spatial planning related impacts. These include most growth, development and cohesion programmes policies as, for instance, urban, regional and national development policies, and EU Cohesion Policy and related programmes.
2. Assess both ex-ante and ex-post evaluation phases: unlike other TIA tools, TARGET\_TIA is designed to assess ex-ante, mid-term and ex-post policy phases. This presents a great advantage since it can present comparable impact scores at all policy evaluation phases;
3. Space - assess all territories: TARGET\_TIA can assess territorial impacts at all geographical scales, but is especially appropriate to assess impacts from urban/local to world scales, as any other TIA. This allows for the cartography of the obtained potential impact scores, either in a spreadsheet software, or via a GIS software, for instance;

4. Time: the impacts of projects, programmes and policies are not immediately measured after they are implemented (EC, 2008; 2013). Normally, it takes two to three years after they are finished to be possible to detect their potential territorial impacts. At the same time, these impacts have to be confronted with a base-line scenario (before the project, programme, and policy was implemented). For instance, to assess the 2000-2006 EU Cohesion Policy Phase, qualitative and quantitative data should be collected for around 2000 and 2009 approximately. TARGET\_TIA permits the selection of any given time that the evaluator thinks more appropriate for the evaluation process.

Taking a concrete example of the evaluation of the main ex-post territorial impacts of EU Cohesion Policy in Iberian Peninsula (Portugal and Spain) since 1989 until 2013, from an evaluator standpoint, these would be the main steps when using TARGET\_TIA:

1. Identify the main evaluation dimensions and respective components: following from the rationale in which EU Cohesion Policy aims at ultimately achieving territorial cohesion processes, the first step to implement TARGET\_TIA would be to identify the main dimensions and respective components of the territorial cohesion concept (see Medeiros, 2016c) in order to produce appropriate impact scores for each component;
2. Select an impact score: the impacts of EU Cohesion Policy in each selected component can be either positive, neutral or negative. To guide the evaluator, a predefined evaluation score scale can be provided in the TARGET\_TIA spreadsheet software. Following from the initial testing phase, it was decided that the most appropriate scale would range from a -4 (very significant negative impacts) to a +4 (very significant positive impacts), where 0 represents a neutral impact (see Figure 2.1);

<b>4</b>	Very Significant Positive Impacts
<b>3</b>	Significant Positive Impacts
<b>2</b>	Moderate Positive Impacts
<b>1</b>	Low Positive Impacts
<b>0</b>	Null Impacts
<b>-1</b>	Low Negative Impacts
<b>-2</b>	Moderate Negative Impacts
<b>-3</b>	Significant Negative Impacts
<b>-4</b>	Very Significant Negative Impacts

Figure 2.1 – TARGET\_TIA impact scores. Source: own elaboration

3. The construction of a counterfactual situation: it is expected that the impacts of EU Cohesion Policy account for only its share of the imputable change it produced in the analysed components, as a way to describe what would have happened without the implementation of this Policy, vis-à-vis with what actually happened. In this context, it is recommended that a few counterfactual evaluation elements are used when assessing territorial impacts (see Figure 2.2). For that, TARGET\_TIA includes the possibility to add to the normal positive-negative evaluation vector, in assessing the overall impacts, three other counterfactual evaluation vectors which should be evaluated in distinct spreadsheet columns. Firstly, the endogenous - exogenous vector addresses the impacts of each analysed component in the analysed territory, vis-à-vis exterior territories. Secondly, the sustainable - short-term vector assesses in what measure the changes produced are sustainable in time or are just short-term impacts. Thirdly, the multiplier - substitution vector takes into account in what measure the estimated impacts produce multiplier effects in other territorial development dimensions and components or, conversely, if they are just replacing positive impacts that used to exist. In the end, the arithmetic average of the four vectors will determine the appropriate impact score for each analysed component. Of course, the evaluator can decide just to stick with the positive-negative evaluation vector for simplification reasons. This sometimes can be the logical choice if it is difficult to collect elements related to the mentioned counterfactual evaluation vectors.
  
4. The policy intensity evaluation element: as seen in Figure 2.2, the TARGET\_TIA formula for obtaining the final potential impact score for each analysed component is not only based on a quantitative/qualitative data analysis which supports the selection of the impact score for the analysed period of time. Instead, it adds two crucial evaluation elements. The first is the policy intensity. In simple terms, in a scale of 0 (no intensity) to 1 (maximum intensity) the evaluator selects a score for each analysed component that represents how much investment was allocated to that component in the global context of the project, programme, policy implementation. The underlying rationale here is that one expects that components which received large volumes of financing are supposed to be greatly affected by the evaluated project, programme or policy. The opposite goes for components poorly financed;

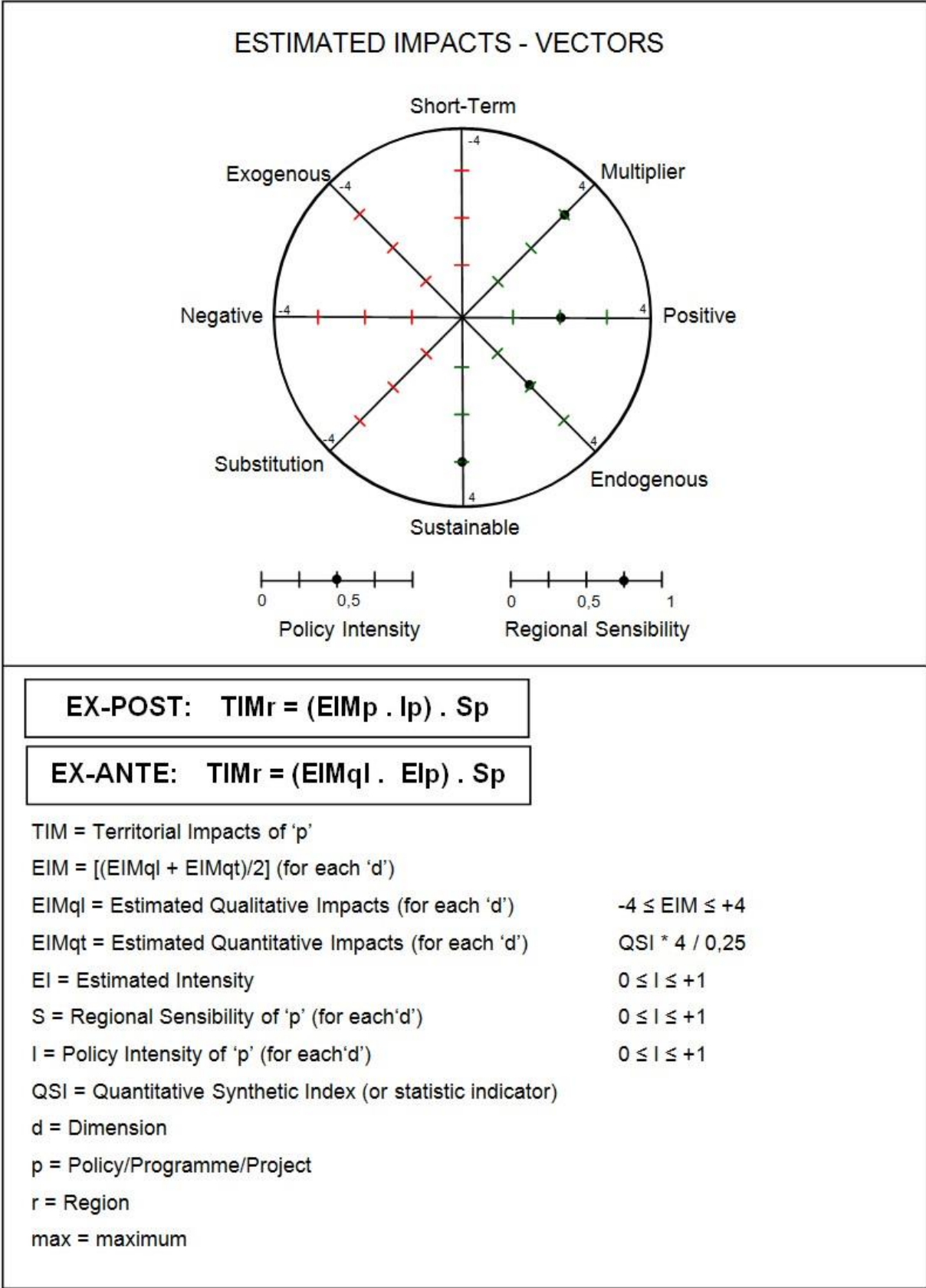


Figure 2.2 - TARGET\_TIA ex-ante and ex-post formulas. Source: (Medeiros, 2017c)



5. The regional sensibility evaluation element: just like the ‘policy intensity’ evaluation element, the ‘regional sensibility’ uses a scale from 0 (no sensibility) to 1 (maximum sensibility) to better tune the final impact score for each analysed component. In synthesis, this evaluation element implies that certain investments have the potential to produce distinct territorial impacts, depending on the regional development situation of a given region. For instance, the installation of a large car factory in an under-developed region, with higher unemployment rates, would most likely bring higher impacts for the regional development process there, than in a region that is already highly developed and with lower unemployment rates. In short, the evaluator will always ask the following question when inputting the score in this evaluation parameter: what are the needs of this region in relation to this specific component. If these needs are very high, then a score of 1 is attributed. Conversely, if these needs are very low, then a score of 0 should be given. To simplify the process, just like in the ‘policy intensity’ evaluation element, three other predefined scores are available in the spreadsheet: 0.25, 0.5 and 0.75. The evaluator has, of course, the possibility to input other scores he thinks more appropriate.
  
6. Quantitative synthetic index for ex-post evaluation phases: in order to make the final impact score more robust, the TARGET\_TIA allows the use of a final evaluation element for the ex-post evaluation phase. Logically, for the ex-ante phase, this is not required since no effective change was produced yet. The basic idea is to paint a picture of quantitative changes in indicators related with each analysed component, which can be imputed to the evaluated project, programme or policy. For that, one can analyse the evolution of statistical indicators prior and after their implementation. Again here, a 0 value would signify a null impact, whereas a 1 value would represent a maximum impact. This value can be inserted directly by the evaluator in each analysed component after a deep statistical analysis, as a simplified procedure that does not require deep knowledge on statistical methods. Alternatively, an evaluator with that knowledge could instead decide to produce an aggregated statistical index to input the end value in the final formula.

#### Qualitative and quantitative data sources:

As previously explained, the insertion of all the evaluation scores, for all the selected components, is done in a spreadsheet software (normally Microsoft Excel) with predefined selection values to facilitate the introduction of scores. Moreover, all the necessary formulas are already included in the appropriate cells. This means that the final impact scores for each analysed dimension and the general impact score is obtained automatically after all the individual evaluation scores are introduced for each analysed component. Hence, what requires more time when using TARGET\_TIA is the process of

collecting sound (qualitative and quantitative) evidence to leads to the selection of an appropriate impact score.

From our past experiences, we suggest that the qualitative elements are obtained via individual semi-open interviews to a few selected experts, already organised to collect evidence on the main impacts of the project, programme or policy, in the selected dimensions and respective components. Generally, we recommend to interview a few experienced policy officials which deal with the evaluated subject on a daily basis, whilst adding a couple of academic experts to the mix. Moreover, qualitative elements should include existing evaluation reports and other relevant literatures on the evaluation subject and respective territory. Also crucial is a deep project database analysis. Indeed, in certain occasions where projects or programmes do not have financial muscle to impact certain quantitative indicators such as GDP, only a deep project analysis can provide proper and sound evaluation indications on their impacts, as is the case of the evaluation of EU INTERREG-A programmes.

In the same measure, the selection of appropriate quantitative data depends on the evaluated project, programme or policy. As a TIA tool, TARGET\_TIA provides a holistic analytic policy scope. As such, the selection of related quantitative indicators for some components can be complex. This is true in particular for indicators associated with territorial governance related components and also with environmental indicators. The problem here is particularly severe when one tries to find comparable indicators for two periods of time, one of them being prior to 2000. By then, few governance and environmental related statistical indicators were available in official statistics. This might force additional work to encounter those indicators in national and regional entities. Again here, the contact with experts on each analysed dimension can help to mitigate this problem.

In the end, the TARGET\_TIA formula will produce a general territorial impact score situated between -4 and +4. Normally, in such a broad policy such as EU Cohesion Policy, which might have high positive impacts in a few components of territorial cohesion dimensions, and low or negative impacts in some others, one would expect a general impact score situated between -2 and +2 (low to moderate negative or positive impacts). On a positive note, TARGET\_TIA permits the automatic retrieval of impact scores for all the selected dimensions. In the case of the evaluation of EU Cohesion Policy in Iberian Peninsula, that allows for obtaining potential territorial impact scores for its impacts on socioeconomic cohesion, environmental sustainability, territorial governance/cooperation and morphological polycentrism. This is particular important as one would expect distinct impacts from projects, programmes and policies in such diverse dimensions.

### **2.3. Concrete example of its application on a project/programme/policy**

Following from the previous section, the ex-post territorial impacts of EU Cohesion Policy in Iberian Peninsula (1989-2013) was selected to exemplify how the step by step implementation of the TARGET\_TIA works. This choice was based on our previous work in assessing the main territorial impacts of EU Cohesion Policy in Portugal (Medeiros, 2013) and Spain (Medeiros, 2017a). Building upon this previous work allowed to have all the necessary qualitative (interviews, literatures, project analysis) and quantitative (statistics) information to input the impact scores using the pre-formatted TARGET\_TIA spreadsheet matrix (Table 2.1).

As can be seen, the four dimensions of the territorial cohesion concept were selected as an analytic framework. Several key components were then selected for each one of these dimensions. In this case, the ‘Socioeconomic Cohesion’ dimension had the double (8) number of components of the remaining three dimensions, since it incorporates two crucial domains of territorial development (economy and society). The main concern here is to select a balanced number of analytic components per dimension so that the final impact scores for each dimension is sound and balanced. Another important decision is to select components that have a real possibility to be impacted by the selected project, programme or policy. The reason for this is simple: one irrelevant component in this mix would get a value that would negatively affect the overall impact score of the analysed subject.

After defining the proper analytic dimensions and respective components, the evaluator needs to collect as much relevant qualitative and quantitative information as possible to input the most appropriate impact score in each column of the TARGET\_TIA matrix (light blue values in Table 2.1). In the case of a very detailed and complete procedure, all the values available in the ‘type of impacts’ columns should be inserted, in order to provide the counterfactual evaluation scenario. In certain cases, however, it might be difficult to obtain the appropriate counterfactual vector score for certain components. In these cases, the same value of the positive-negative evaluation vector should be inserted in the three counterfactual evaluation vectors, not to affect the overall average in this evaluation parameter.

The following step is to fill-up the next two columns with two adjusting evaluation elements. For the ‘policy intensity’ there is a need to know the detailed allocation of funds of the analysed subject for each one of the analysed components. The higher the financial value allocated, the higher the value in this parameter. Similarly, the selection of the most appropriate value to be inserted in the ‘regional sensibility’ column requires a deep knowledge of the territory in which the project, programme or policy is being implemented. In brief, the higher the need of this territory (in general) to improve in a specific analysed component, the higher the score should be included in this parameter.

Table 2.1 – TARGET\_TIA matrix – Territorial Impact scores - EU Cohesion Policy Iberian Peninsula – 1989/2013. Source: own elaboration

		Type of Impacts (-4 to 4)					0 to 1		TCI 0 to 1	
Dimension	Component	Pos/Neg	End/Exo	Sust/Shor	Mul/Sub	Average	Pol/Int	Sen/Reg	1989	2016
Socioeconomic Cohesion (SOC)	Education	3	2	3	3	2,75	0,75	1	0,25	0,5
Socioeconomic Cohesion (SOC)	Health	1	2	2	2	1,75	0,25	1	0,25	0,5
Socioeconomic Cohesion (SOC)	Culture / Sport	1	2	1	2	1,5	0,25	0,75	0,25	0,5
Socioeconomic Cohesion (SOC)	Social Exclusion	1	2	1	1	1,25	0,25	0,75	0,25	0,5
Socioeconomic Cohesion (SOC)	Income	2	2	1	3	2	1	1	0,25	0,5
Socioeconomic Cohesion (SOC)	Employment	2	2	1	2	1,75	0,75	0,75	0,5	0,5
Socioeconomic Cohesion (SOC)	Productivity	2	2	2	2	2	0,75	1	0,25	0,5
Socioeconomic Cohesion (SOC)	Innovation	1	1	2	1	1,25	0,75	1	0,25	0,5
<b>Average</b>		<b>1,63</b>	<b>1,88</b>	<b>1,38</b>	<b>2,00</b>	<b>1,78</b>	<b>0,59</b>	<b>0,91</b>	<b>0,28</b>	<b>0,50</b>
Environmental Sustainability	Energy	1	1	2	1	1,25	0,25	1	0,25	0,75
Environmental Sustainability	Environmental Protection	2	3	3	3	2,75	0,25	0,75	0,5	0,75
Environmental Sustainability	Recycling/Infrastructures	2	3	3	3	2,75	0,75	1	0,25	0,5
Environmental Sustainability	Biodiversity	1	1	0	1	0,75	0	0,75	0,5	0,5
<b>Average</b>		<b>1,50</b>	<b>2,00</b>	<b>2,00</b>	<b>2,00</b>	<b>1,88</b>	<b>0,31</b>	<b>0,88</b>	<b>0,38</b>	<b>0,63</b>
Governance / Cooperation	Horizontal Cooperation	1	3	3	3	2,5	0,5	1	0,25	0,75
Governance / Cooperation	Vertical Cooperation	1	1	1	1	1	0,25	1	0,25	0,5
Governance / Cooperation	Participation	1	2	2	1	1,5	0,25	1	0,25	0,5
Governance / Cooperation	Involvement	1	2	2	1	1,5	0,25	1	0,25	0,5
<b>Average</b>		<b>1,00</b>	<b>2,00</b>	<b>2,00</b>	<b>1,50</b>	<b>1,63</b>	<b>0,31</b>	<b>1,00</b>	<b>0,25</b>	<b>0,56</b>
Polycentricity	Hierarchy / Ranking	-2	2	2	-1	0,25	0,75	1	0,25	0,25
Polycentricity	Density	2	3	1	3	2,25	0,75	0,75	0,25	0,5
Polycentricity	Connectivity	2	1	1	3	1,75	0,75	0,75	0,25	0,75
Polycentricity	Distribution / Form	-1	1	1	1	0,5	0,25	0,75	0,25	0,25
<b>Average</b>		<b>0,25</b>	<b>1,75</b>	<b>1,25</b>	<b>1,50</b>	<b>1,19</b>	<b>0,63</b>	<b>0,81</b>	<b>0,25</b>	<b>0,44</b>
<b>General Average</b>		<b>1,09</b>	<b>1,91</b>	<b>1,72</b>	<b>1,75</b>	<b>1,62</b>	<b>0,46</b>	<b>0,90</b>	<b>0,29</b>	<b>0,53</b>

Legend: Pos/Neg (Positive/Negative) ; End/Exo (Endogenous/Exogenous) ; Sust/Shor (Sustainable/Short Term) ; Mul/Sub Multiplier/Substitution)

Legend: Pol/Int (Policy Intensity); Sen/Reg (Regional Sensibility)

If the evaluation was aimed at assessing the main ex-ante impacts of EU Cohesion Policy in Iberian Peninsula, the evaluation process would halt here, since the use of further quantitative elements aimed at showing the territorial trends in the analysed components would be useless. In the selected example, however, they are much needed, as they add a more impartial and objective analysis to the territorial impact evaluation process. The first column of this ‘quantitative territorial trend analysis’ represents the base-line scenario of the impact evaluation process. In other words, the score values to be inserted in this column portrait the ‘territorial development status’ of the analysed territory (as a whole) in the analysed component in a wider context. In the presented case (Iberian Peninsula) this wider context is the European Union (EU) average. Concretely, the lower the score, the less positive territorial context in the analysed component. Evidently, the second column represents a period of time after the project, programme, or policy was implemented. This period varies from case to case. For a policy like EU Cohesion Policy we recommend to wait around three years for its impacts to take full effect.

After all these scores are incorporated into the TARGET\_TIA matrix, the impact scores for each selected analytic dimension are automatically produced, as well as a ‘general impact score’ of the evaluated subject. In this case, the general impact score was low to moderate positive (1,137) (see Table 2.2). This ‘general score’ results from the arithmetical average of the four impact scores obtained in the selected four dimensions. These, instead, show that higher positive impacts of the implementation of EU Cohesion Policy in Iberian Peninsula were obtained in promoting ‘socioeconomic cohesion’ and ‘morphologic polycentrism’, whereas the ‘environmental sustainability’ process was the less positively affected (Medeiros, 2018b).

Table 2.2 –Territorial Impact scores per main dimension – EU Cohesion Policy in Iberian Peninsula – 1989/2013

	General	Soc/Eco	Sus/Env	Gov/Coo	Polycen
EIMql = Estimated Qualitative Impacts	1,617	1,781	1,875	1,625	1,188
Territorial Cohesion Index	0,242	0,219	0,250	0,313	0,188
EIMqt = Estimated Quantitative Impacts	3,875	3,500	4,000	5,000	3,000
EIM = (EIMql * EIMqt)	2,738	2,609	2,938	3,313	2,094
I = Regional Intensity of ‘p’	0,461	0,594	0,313	0,313	0,625
S = Regional Sensibility to ‘p’	0,898	0,906	0,875	1,000	0,813
	<b>1,137</b>	<b>1,421</b>	<b>0,803</b>	<b>1,035</b>	<b>1,063</b>

Note: Soc/Eco: Socioeconomic cohesion / Sus/Env: Environmental Sustainability / Gov/Coo: Territorial Governance and Cooperation; Polycen: Morphological polycentrism. Source: own elaboration

As previously stated, EU Cohesion Policy produces impacts in basically all territorial development dimensions and respective components (see EC, 2017; Medeiros, 2016d). As such, the obtained general impact value when assessing the main territorial impacts of this Policy, has to be interpreted with care. Firstly, in certain policy domains, these impacts can be quite reduced or even negative. This might contrast with other policy domains, where this Policy was able to produce very high positive impacts. Secondly, the potential territorial impacts of EU Cohesion Policy vary from region to region, as the less developed regions, in a given EU member state, are supposed to receive higher volumes of funding. In this context, it is recommended that a similar territorial impact assessment evaluation should be done for each region, thus allowing more detailed and comparable cartography of the obtained impact scores (Figure 2.3).

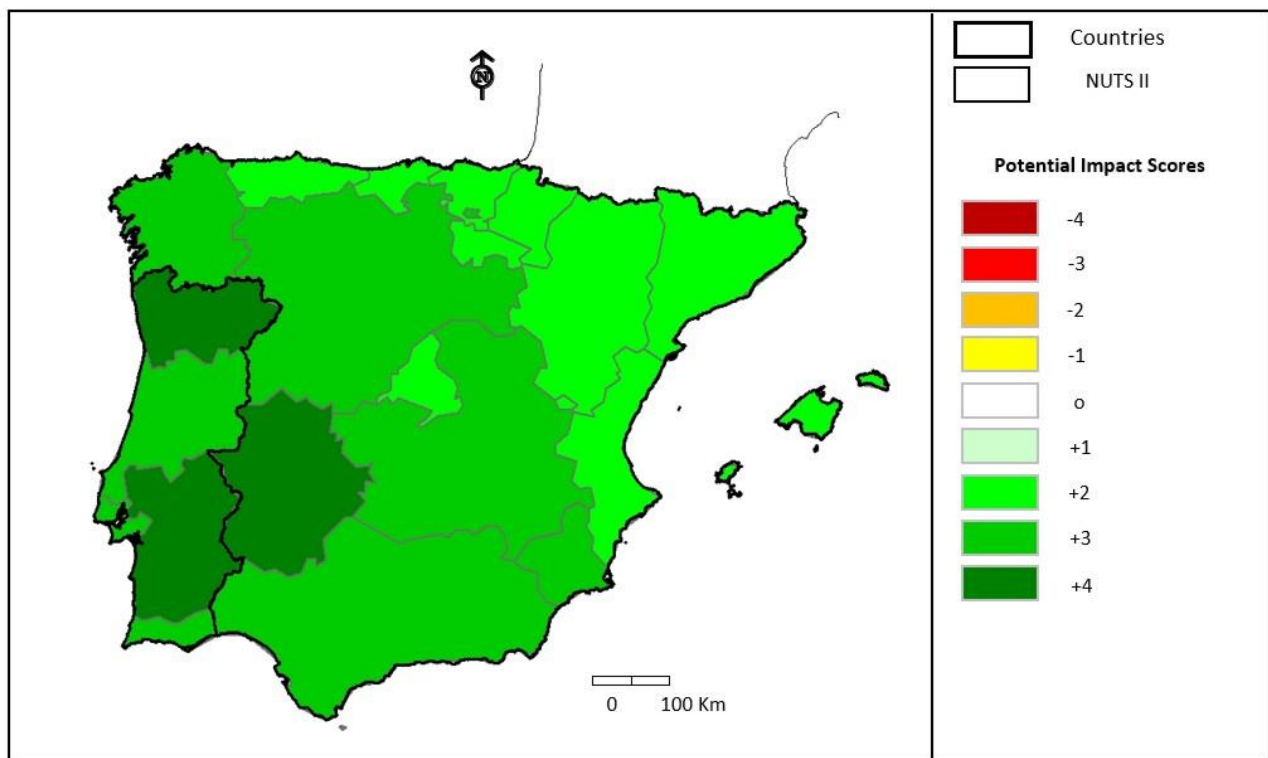


Figure 2.3 – Potential territorial impact scores for the implementation of EU Cohesion Policy in Iberian Peninsula (NUTS II) – 1989-2013. Source: Own elaboration

We now take the analytic component of ‘education’ as one concrete example on how to decide on the most appropriate potential impact score to fill up the TARGET\_TIA evaluation matrix (see Table 2.1). After collecting all the necessary qualitative and quantitative information, it became evident that, in overall terms, Iberia Peninsula was positively impacted in a high degree with the investments from EU Cohesion Policy in this policy sector. This justifies the score 3 in the positive-negative evaluation vector. The same score was given to the multiplier - substitution effect, as

education is widely recognised to have profound and widespread multiplier effects in many development dimensions and components, such as health, income, political decisions and others (OECD, 2018; UNESCO, 2012). This is true for all territories and is particularly true for the two Iberian countries which are relatively young democracies within the European context. Likewise, the investments in education were, in large part, sustainable over time, as they focused on infrastructural renovation, on supporting research and innovation in universities, and in establishing professional training courses, amongst other education related instruments (IGFSE, 2009a; 2009b; 2011; Fuentes and Mariscal, 2005; Requena, 2006). In this context, a 3 was attributed to this counterfactual evaluation vector. Conversely, a lower impact score (2) was given to the endogenous - exogenous evaluation vector, since the brain drain effect (Schiller and Diez, 2011) in Iberian Peninsula was considerable, in particular during the 2008 financial crisis period (Hasanefendic, 2017; Lorca-Susino, 2011).

For the 'policy intensity' score, the project analysis showed that, in Portugal, education and training were the third most financed policy sector by EU Cohesion Policy, and the sixth in Spain. Therefore, the attributed 0,75 score in a maximum of 1. From a 'regional sensibility' perspective, however, in a base line scenario (around 1989) the need for improving the education panorama was very high in both Iberian countries, within the EU context. This scenario justified the maximum score (1) attributed in this parameter. Finally, the statistical data demonstrated the lagging situation confronted by both Iberian countries in the education attainment related indicators by around 1989 (EC, 1996). As such, for the first territorial development trend score a low score (0.25) was attributed. Since by 2016 all these indicators were substantial improved, a higher score was inserted (0.75) for the second column, which represents a more recent scenario. Here, the maximum score (1) was not yet achieved since the most recent education related data for both Iberian countries did not yet attain, in general, the levels of the most EU developed countries (EUROSTAT, 2018).

A similar evaluation rationale is applied to the remaining selected components in the TARGET\_TIA matrix. Understandably, the higher the knowledge on each one of these components, the higher the quality and reliability of the final general potential impact score of the evaluated project, programme or policy. The following section will summarise the main strengths and weaknesses of the TARGET\_TIA based on almost ten years of constant use and adaptation to different evaluation contexts.

## **2.4. Main results, strengths and weaknesses, and future prospects**

TIA tools are relatively recent and are not, in most cases, integrated into the national policy evaluation frameworks (Medeiros, 2016b). By and large, they are still very much included within the group of an EU Impact Assessment (IA) tools, such as the mandatory Strategic Environmental Impact Assessment (SEA) and Environmental Impact Assessment (EIA) procedures (see Anjaneyulu and Manickam, 2007; Glasson et al., 1999; Lawrence, 2003). Ultimately, these EU IA tools intend to improve the quality and coherence of the policy development process, whilst contributing to a more effective and efficient regulatory environment towards the implementation of the European strategy for Sustainable Development (White, 2010).

By the same token, TARGET\_TIA was, by now, mainly used to assess the ex-post territorial impacts EU funded programmes and policies, with a clear territorial dimension (see Medeiros, 2017d). More particularly, it was initially used to assess the main impacts of EU Cohesion Policy in three EU countries: Portugal, Spain and Sweden. The end result was quite positive, as it allowed to produce sound and comparable impact scores of this Policy in all analysed dimensions: (i) socioeconomic cohesion; (ii) environmental sustainability; (iii) territorial governance/cooperation; and (iv) morphologic polycentrism. Unlike existing ESPON TIAs which were designed to assess EU directives (TEQUILA – see Chapter 3, and ESPON QUICK CHECK TIA), TARGET\_TIA was designed to provide a sound and relevant potential impact score of analysed projects, programmes and policies.

In the end the intended results were achieved in full, in a quite acceptable schedule, taking into consideration the number of persons involved in the evaluation (one) and the amount of collected and treated information. Taking the last studied case (EU Cohesion Policy in Sweden), the whole evaluation process (collecting and treating qualitative and quantitative data + production of cartography + production of the report and article) took around 4 months to complete. This means that a larger research unit of, for instance, 5 persons, with an already deep knowledge on the studied territory and



policy, can deliver the final evaluation report in around 2 months. This is often times less than the ESPON TIAs evaluation reports take to be produced.

Furthermore, the TARGET\_TIA was used to assess territorial impacts at different territorial scales: national, regional and cross-border. Indeed, following the EU Cohesion Policy TIA experience, which was particularly demanding, since this Policy expands its tentacles to all branches of territorial development, TARGET\_TIA was tested in the EU INTERREG-A programmes (cross-border cooperation). More specifically, it was used to assess the main territorial impacts of the Inner Scandinavia sub-programme of the Swedish-Norwegian INTERREG-A programme (1994-2013). For this particular case, all new analytic dimensions were selected, with respective components. This was the ultimate opportunity to test the flexibility and adaptability of the TARGET\_TIA matrix and formula. The end result was, once again, extremely positive as no further methodological changes were required to the existing evaluation matrix in the spreadsheet. In this light, and based on concrete and already published results from implementing the TARGET\_TIA, one can conclude that its main strengths as a sound and relevant TIA tool are the following:

- Credibility: TARGET\_TIA is designed to produce sound and relevant potential impact scores. This is the only TIA tool which makes use of counterfactual evaluation vectors, which are fundamental elements for implementing sound impact assessment tools. In addition, it adds two crucial TIA evaluation tuning elements ('policy intensity' and 'regional sensibility') to improve the robustness of the TIA analysis. Furthermore, by not following an erroneous notion in which it is possible to obtain these scores in a quick way, TARGET\_TIA is particularly designed to be used by all entities which intend to realistically and effectively understand what were the main territorial impacts of projects, programmes and policies;
- Flexibility: the TARGET\_TIA is designed to be used in all evaluation phases: ex-ante, mid-term and ex-post. At the same time, it can be used to assess the territorial

impacts of all sorts of policies, programmes and projects. By being implemented via a spreadsheet, it permits an easy inclusion and/or elimination of evaluation dimensions and respective components. This tailor-made possibility to adjust the TARGET\_TIA evaluation matrix to completely different evaluation subjects can be particularly useful for entities which operate in distinct policy evaluation environments. More importantly, however, unlike most ESPON TIA tools, TARGET\_TIA is independent from online platforms, with little flexibility to tailor-made TIA procedures to a concrete project, programme and policy;

- Easy to operate: As previously explained, the TARGET\_TIA is operated in a spreadsheet matrix with all the necessary formulas already incorporated. As such, after the evaluator collects all the necessary information concerning the main territorial impacts of the evaluated project, programme or policy, the inclusion of the most appropriate impact scores for each selected component becomes a quite straightforward, fast and easy process. In overall terms, the whole spreadsheet completion procedure takes around 15 minutes. Moreover, there is no need for specific technical knowledge to operate TARGET\_TIA (read spreadsheet matrix) as the only thing that is required is the insertion of appropriate impact scores in the appropriate columns;
- Cost-effective: A spreadsheet like Microsoft Excel is commonly present in every computer of policy evaluation entities. Moreover, there are cost-free alternative spreadsheets (Open Office) available, compatible with the Microsoft Excel, for anyone who does not have this software already installed. In this light, no extra costs are involved when using TARGET\_TIA to assess territorial impacts. Furthermore, the latest versions of Microsoft Excel have incorporated a Mapping Tool, which permits automatic cartography of impact scores across different territories. Better still, an Arc GIS add-on can be incorporated in the Microsoft Excel as way to produce automatic professional cartography.

As regards the potential weaknesses of the TARGET\_TIA, one can point out one which is transversal to all TIA tools: no one with limited knowledge on the analysed subject and territory should use this tool. The fact that TARGET\_TIA is a very simple and flexible to operate TIA tool does not signify that anyone can use it for assessing territorial impacts. Conversely, only someone with deep knowledge of what is being assessed should use TARGET\_TIA or any other policy evaluation tool. This means that officials from local, regional, national and EU entities can use it on a regular basis, as well as any other policy evaluation professionals. Other than that, the TARGET\_TIA does not present any other significant shortcoming.

For the next few years, one expects that TARGET\_TIA can be also applied to assess ex-ante impacts of regional, national and EU programmes and policies, and especially the ones associated with EU Cohesion Policy, which will soon enter into a new programming phase (2021-2027). Additionally, one expects it could be applied to assess the main territorial impacts of spatial planning instruments (Medeiros, 2019), large scale projects such as airports, and urban development policies, for instance. From a methodological perspective, no particular changes are anticipated, since the present formula has been intensively tested in distinct policy environments with success. However, a relatively recent verbal agreement was made with the EU Joint Research Centre to test the possible link of TARGET\_TIA with the LUISA Territorial Modelling Platform (see chapter 10). The basic idea was to take the best out of both worlds: (i) provide the TARGET\_TIA with online automatic cartography of impact scores; (i) provide LUISA with a sound and relevant TIA methodology.

More importantly, however, would be to see the use of the TARGET\_TIA by several local, regional and national entities responsible for promoting and assessing territorial development processes. As a flexible, sound, easy to operate, and low-cost TIA tool, the TARGET\_TIA can be regarded and an optimal choice for all those that want to implement this holistic and more complete policy evaluation methodology, with the ultimate goal of improving the effectiveness and efficiency of public policies.

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