

ADAPTING TO CLIMATE CHANGE: THE NEED FOR EU COHESION POLICY TO ADJUST FUNDING

Kathrin Prenger-Berninghoff¹

Abstract

Climate change is inevitable and is why the need for mitigation and adaptation has become obvious. Both approaches need to play an important role in future climate change policy. Until now mitigation has always played a bigger role in the fight against climate change than adaptation and policies implemented in the 1990s mainly focused on activities that foster mitigation. In the last decade more attention was paid to adaptation. But governments are still regarding the need for adaptation with different degrees of urgency. The problem of financing adaptation strategies is probably one of the most evident reasons for the current restraint. However, adaptation is of great relevance and should play a bigger role in the future.

One climate-change-associated area already trying to put in place measures and investments that help Member States and regions to mitigate and adapt to climate change is the EU Cohesion Policy. Climate change may cause certain impacts, which might negatively affect some regions, thus changing socio-economic patterns and exacerbating existing inequalities. It should therefore be of interest for Cohesion Policy to support regional adaptation strategies and to specifically invest in actions improving the adaptive capacity of a region, in order to avoid those effects that counteract its own policy objectives. Consequently the incorporation of adaptation into its funding efforts and the reduction of climate change risks are turning into a major task. However, a challenge will be the appropriate application of funds. Until now Cohesion Policy has concentrated on economic indicators only. The fact that the risks of climate change will be unequally distributed and that both developed and less developed regions can show low degrees of adaptive capacity is not taken into consideration. Hence, it is suggested that Cohesion Policy considers other indicators, such as the level of adaptive capacity or regional vulnerability, in the future, rather than just focusing on indicators such as the GDP per capita. Such an approach would benefit developed and less developed regions and thus comply with both objectives; efficiency and equity.

Due to the fact that adaptation has so far been rather neglected from the policy side, this paper highlights the need for an adjustment of the EU Cohesion Policy funds in regard to climate change adaptation. After first explaining why both mitigation and adaptation are equally important in handling the risks of climate change, this paper will demonstrate why action at EU level in the context of climate change adaptation is necessary and reasonable and explain the current funding approach. Cohesion Policy and the consideration of climate change-related vulnerability will then exemplarily be closer examined in the Italian Veneto region. The example will hint at the required changes and improvements that Cohesion Policy needs to make in

¹ Institute of Urban Development, Krakow, Poland – kathrin.prenger-berninghoff@tu-dortmund.de

order to further promote adaptation and resiliency. Finally, the current role of climate change in Cohesion Policy will be outlined and the reason for an adjustment of funding mechanisms clarified.

1. Introduction

1.1. Considering climate change impacts within the EU Cohesion Policy

Climate change is inevitable and is why the need for mitigation and adaptation has become obvious. Until now mitigation has always played a bigger role in the fight against climate change than adaptation – from a scientific point of view as well as from the policy perspective. Policies implemented in the 1990s mainly focused on activities that foster mitigation (Swart & Raes, 2007). In the last decade more attention was paid to adaptation. But governments are still regarding the need for adaptation with different degrees of urgency (Gagnon-Lebrun & Agrawala, 2006). The financing of adaptation strategies and measures combined with the uncertainty of the actual risks of climate change is probably one of the most evident reasons for the current restraint. However, adaptation is of great relevance and should play a bigger role in the future.

One climate-change-associated area already trying to put in place measures and investments that help Member States (MS) and regions to mitigate and adapt to climate change is the EU Cohesion Policy. Climate change may cause certain risks and impacts which might negatively affect some regions, thus changing socio-economic patterns and exacerbating existing inequalities (CEC, 2007a). It should therefore be of interest for the Cohesion Policy to support regional adaptation strategies in order to avoid those effects that counteract its own policy objectives. Consequently the incorporation of adaptation into its funding efforts and the reduction of climate change vulnerability are turning into a major task (European Commission DG Climate Action, 2010). However, a challenge will be the appropriate application of funds. Until now Cohesion Policy is concentrated on economic indicators only. The fact that the impacts of climate change will be unequally distributed and that both developed and less developed regions can show low degrees of adaptive capacity is not taken into consideration. Hence it is suggested that Cohesion Policy considers regional vulnerability in the future, rather than just focusing on indicators such as the GDP per capita.

1.2. Objectives

The objective of this paper is to highlight the need for an adjustment of the EU Cohesion Policy funds in regard to climate change adaptation. After first explaining why both mitigation and adaptation are equally important in handling the impacts of climate change, this paper will demonstrate why action at EU level in the context of climate change adaptation is necessary and reasonable and explain the current funding approach. Cohesion Policy and the consideration of climate change-related risks will then exemplarily be more closely examined in the Italian Veneto region.

The example will hint at the required changes and improvements that Cohesion Policy needs to make in order to further promote adaptation and resilience. Finally, the current role of climate change in Cohesion Policy will be outlined and the reason for an adjustment of funding mechanisms clarified.

2. Analysis

2.1. Mitigating and adapting to the impacts of climate change

As indicated by the IPCC, climate change is happening and is human-induced. Consequently, climate change scepticism and a cautious behaviour are no longer justifiable. In contrast, mitigation and adaptation strategies are more affordable and reasonable than inaction with its subsequent damages and costs (UNDP, 2007; CEC, 2009a).

Therefore, mitigation and adaptation should play an important role in future climate change policy. On the one hand, projected climate change impacts can only be limited or in the best case prevented, when the main driver of climate change – the current amount of greenhouse gas emissions – is being reduced. For that reason the EU has to implement measures that promote, for instance, a low-carbon economy. Ignoring the importance of carrying out mitigation measures might increase the risk of adverse climate change impacts. As a consequence, costs for adaptation measures could rise (CEC, 2007b). On the other hand, climate change is already underway. That is why, at the same time as mitigating, it is important to adapt to climate change. Adaptation is supposed to either reduce the risk of expected negative impacts or to deploy possible favourable effects. However, adaptation action should not be misinterpreted as an alternative to mitigation. According to the Green Paper ‘Adapting to climate change in Europe – options for EU action’, there are several reasons for this. First, certain climate change impacts simply cannot be reduced by adaptation. Second, with growing impacts adaptation becomes more cost-intensive. Finally, while mitigation measures have global affects, adaptation measures rather operate regionally and locally, so that lagging and less developed countries or regions are being disadvantaged (ibid.).

The regional impacts of climate change differ among Europe. Therefore climate change needs to be tackled at the regional level. However, the main problem is that not all the Member States, or regions respectively, have the same capacity to mitigate and adapt. Furthermore, not all governments regard the need for adaptation with the same seriousness. For instance, although all MS have included information on the current level of their adaptation plans in the Fifth NC’s to the UN Framework Convention on Climate Change, by 2010 only twelve European countries had adopted national adaptation strategies (EEA, 2012). This implies two consequences: first, as not only the impacts of climate change will vary throughout Europe, but also the capacity of European regions to adapt to these changes, support from EU Cohesion Policy will be essential in order to avoid the deepening of regional disparities, which might arise when unprivileged regions are left alone to cope with

adverse impacts. Second, adaptation measures have to be adjusted to the potential climate change impacts, and the diverse impacts need to be tackled and adaptation measures realised at regional level. This is why MS should promote the implementation of national, but also of regional adaptation strategies.

2.2. The need for action at EU level

As stated above, different response strategies are needed at national and regional level. Certainly, the implementation of concrete strategies and measures is in the responsibility of national governments. Nevertheless the EU has a certain saying and also the duty to co-ordinate and offer support to its MS, in order to promote the preparation of national and regional adaptation strategies and to foster mitigation and adaptation across the whole European territory. As the EU has already been involved in certain climate sensitive policies (agriculture, energy, water etc.), an additional involvement in associated sectors is considered as useful (Rayner & Jordan, 2010). In fact, an adaptation policy at EU level will have several favourable effects in general.

Climate change is quite a complex issue. Actual effects of climate change depend on several aspects such as the exposure of a region, the sensitivity of exposed elements as well as its adaptive capacity or the stage of socio-economic development etc. Due to this enormous variability, a multilevel governance approach is necessary, where all actors and stakeholders from local levels to the EU level are involved. Although adaptation measures are usually implemented at the local level, the regional level is also very important in adapting to climate change. Regions with a low adaptive capacity would particularly benefit from more information and a better co-operation. The uncertainties of climate change cause problems in securing concrete information and knowledge and in guiding regional authorities which prevents effective policy-making (CEC, 2009b). So the regional level alone cannot cope efficiently enough with the adaptation to climate change.

As a result, the EU needs to be involved in order to provide for the co-ordination of regional adaptation initiatives across the European territory. By adopting a coordinative function, by ensuring a comprehensive and coherent approach and by supporting adaptation measures, major gaps between EU countries and regions may be avoided (CEC, 2009a; CEC, 2009b). The EU could also assist in the design of efficient adaptation policies. Furthermore, municipalities and regions will most likely be in need of financial support as they will not be able to enable adaptation when left alone with the funding, so that the questions of burden sharing and solidarity and the development of a new financial support framework shall arise (CEC, 2009b). Thus, there is no doubt about the importance of certain co-ordination at EU level.

2.3. The need for new funding mechanisms

Solidarity among Member States is a necessary prerequisite. The notion of solidarity should be contained within the adaptation strategies in order to help those who need

(financial) support most (CEC, 2007b; CEC, 2009b). In this context the European Commission also highlights the role of Cohesion Policy, which “can further contribute to address the consequences of new disparities between those regions which suffer most from climate change and those that can more easily cope with its impacts” (CEC, 2009b, p. 21). The Fourth Cohesion Report already pointed out the important role of climate change in the EU Cohesion Policy and the necessity to analyse, how climate proofing can be integrated in those programmes and projects that will be financed by European Funds such as the Cohesion Fund, the Regional Development Fund and the Rural Development Fund (CEC, 2007b).

Public funding of adaptation measures is a major requirement. Adaptation measures will most likely only receive private funding when located in less affected regions and when provided for economically interesting projects. As a consequence the less developed regions, especially those most at risk, will likely have difficulties obtaining private funding for their investments or risk coverage. If they receive appropriate funding at all, it will most likely only be at comparably high costs, which might lead to the creation or deepening of disparities and inequalities between stronger and weaker regions. For the latter regions, public funds are the most important source of financial support, mainly in cases when natural hazards or extreme weather events hit the region (CEC, 2009b). In order to fill this gap, the Commission plans new funding instruments which will serve to finance long term adaptation. But there will be a great competition for those funds, as many regions will be in need for them. All the more, investments into projects have to take future climate change impacts into consideration, i.e. promote those that support mitigation and adaptation measures and prevent those that hinder them. Accordingly, the Commission acknowledged the need to determine how EU funding mechanisms within the next multi-annual financial framework can better support MS in becoming more resilient to climate change (ibid.). Financial help will be necessary in order to develop and realise adaptation strategies that help reduce vulnerabilities and thus also contribute to the reduction of disparities.

An important step towards a more successful and target-oriented adaptation policy was the adoption of the EU White Paper on Adaptation to Climate Change. In the EU White Paper the importance of financing adaptation is acknowledged by the explanation, that “climate change is one of the priorities for the current multi-annual financial framework (2007- 2013) and it is important to ensure that the available funds are used to reflect this priority” (CEC, 2009a, p. 13). This means that funds and other financial instruments shall be applied better and more efficiently, especially in view of the fact that the total EU budget may not be increased, but only redistributed. Therefore all climate change relevant sectors need to define specific adaptation strategies including an estimation of adaptation costs, which can then be considered by the prospective financing schemes. In addition the Commission foresees actions which comprise an increased incorporation of adaptation actions into the EU financing schemes of the current period as well as a review of existing funds, in order to improve their use and capability when addressing climate change vulnerability in the coming framework (CEC, 2009b). For example, the Cohesion

Policy instruments of the current period should be used and exploited in a way that climate change adaptation can be supported. At the same time each project or programme that is applying for or already receiving EU funding shall be tested for its mitigative and adaptive capacity and its vulnerability to climate change respectively. It is important that adaptation activities are being considered when preparing Community funding programmes. This means that investments into infrastructure or buildings should generally take account of the projected changes in climatic conditions (CEC, 2007b). Thus, certain adaptation measures should already be integrated when designing a programme. Therefore the Commission is aiming at mainstreaming mitigation and adaptation in the EU's Operational Programmes. Further options for integrating the funding of adaptation into the next multi-annual framework should also be evaluated (CEC, 2009b). The actions proposed in terms of financing clearly highlight the necessity to integrate adaptation issues, i.e. in particular adaptation funding, in current funding instruments and in the financial framework after 2013. The Impact Assessment accompanying the White Paper points out once more the future task of Cohesion Policy, to take mitigation and adaptation into account when adopting the Operational Programmes and when deciding on and managing the use of EU funds.

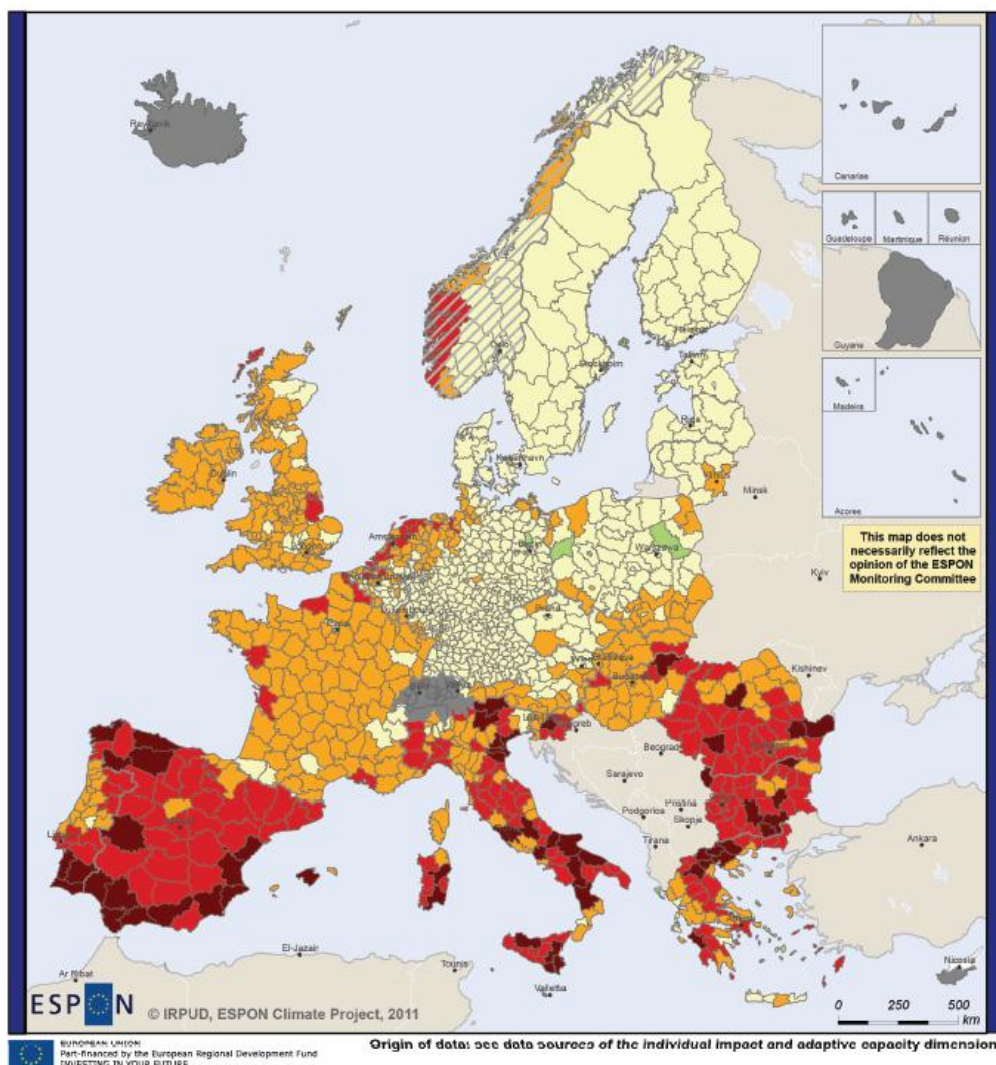
However, some initial ideas that had been considered important before were not elaborated within the White Paper. For instance, the Commission's original plans to integrate adaptation measures into the EU budget and allocate funds directly to them were cut out (Rayner & Jordan, 2010). Rayner & Jordan (2010) also criticized, after examining the "Impact Assessment", that several options had been dropped too early. This includes those options that imply considerable adjustments in EU financing schemes, which are difficult to foresee under the current framework (CEC, 2009b). They concluded that the discarding of these options is a sign for the incapability of the EU to change its investment patterns and to purposely add the adaptation dimension to future funding schemes.

This means the Commission's intentions are honourable, but they lack an actual realization.

2.4. Cohesion Policy and climate change adaptation in the Veneto region

A closer look shall now be taken at Cohesion Policy in the Veneto region. Although it is usually the less developed regions that are in need of financial aid for adaptation measures most, the Veneto is insofar an interesting example region, as it represents a rather rich European region, but at the same time also one of the most climate change vulnerable ones (Figure 1). It is therefore essential to implement mitigation and in particular adaptation measures and to increase the adaptive capacity of the region in order to decrease its vulnerability. The region is covered by the competitiveness and employment objective and is thus supposed to generally invest less funding in mitigation and adaptation activities or has less funding available for these kinds of activities. However, the region is expected to actually have a great interest in improving its adaptive capacity in order to stabilise and preserve or even improve its

competitiveness and to protect its citizens, especially against river floods or flash floods, and its important cultural heritage.



Potential vulnerability to climate change

- highest negative impact (0.5 - 1.0)
- medium negative impact (0.3 - <0.5)
- low negative impact (0.1 - <0.3)
- no/marginal impact (>-0.1 - <0.1)
- low positive impact (-0.1 - -0.25)
- no data*
- reduced data*

Vulnerability calculated as the combination of regional potential impacts of climate change and regional capacity to adapt to climate change.

The potential impacts were calculated as a combination of regional exposure to climate change (difference between 1961-1990 and 2071-2100 climate projections of eight climatic variables of the CCLM model for the IPCC SRES A1B scenario as well as resulting inundation depth changes for a 100 year return flood event based on river flooding projections of the LISFLOOD model and coastal storm surge height projections of the DIVA model adjusted with a 1 m sea level rise) and most recent data on the weighted dimensions of physical, economic, social, environmental and cultural sensitivity to climate change. Adaptive capacity was calculated as a weighted combination of most recent data on economic, infrastructural, technological and institutional capacity as well as knowledge and awareness of climate change.

* For details on reduced or no data availability see Annex 9.

Figure 1. Potential vulnerability of European regions to climate change (Source: ESPON & IRPUD, 2011, p. 24)

In the current programming period, Italy receives around 28.8 billion Euros. Most of its funding (around 21.6 billion Euros) will be invested in the convergence objective, i.e. for the lagging regions in Southern Italy. The regional competitiveness and employment objective has a budget of 6.3 billion Euros. The national level adds

another 31.3 billion Euros funding for its regions within these two objectives. A major part of funding in Italy is directed towards the goals of the Lisbon Strategy: growth, jobs and competitiveness (CEC, 2007c; CEC, 2009c). It strikes that climate change activities or measures to fight or adapt to climate change are not taken into account in the national direction of Italian Cohesion Policy. Investments into climate-proofing as well as mitigation and adaptation measures are not mentioned, nor is risk prevention. The fact that investments in the field of climate change could also lead to economic growth, the emergence of new businesses and thus new employment opportunities and potential innovation is not being considered.

The Veneto region has a total funding amount of 452 million Euros available for its Operational Programme. In line with the above said, investments will mainly be made in fields that support the Lisbon objectives. However, one of the priorities of the Operational Programme is “Environment and risk prevention”, which implies actions that try to minimize health risks as well as measures which are supposed to contribute to an intact environment by protecting the natural heritage and historic buildings (Zuliani, 2007). Even if the protection of the environment as well as risk prevention play a certain role within the Operational Programme of the Veneto region, at no point is the problem of future climate change impacts specified. “Risk prevention” is expected to be a rather general term and not necessarily directed towards risks posed on people, settlements and the environment by climate change. A concrete attacking of climate change-related risks and effects can therefore not be assumed. On the contrary, the priorities indicate a clear focus on the Lisbon Strategy objectives, by rather investing in economic growth and job creation.

European coastal regions generate a high share of the total GDP of the EU, thus they are not only economically important, but also economically sensitive. The Veneto is one of those productive coastal regions and generates a high economic activity, representing one of the most competitive regions in Italy. Since the costs of inaction in coastal areas, i.e. costs related to coastal flooding and erosion, would rise up to 6 billion Euros per year at EU level by the year 2020, adapting to climate change is quite essential for any coastal region. Accordingly, policy makers should be aware of the respective vulnerability of a region at local level in order to take adequate adaptation measures (CEC, 2009d). Severe risks in coastal areas could impact the local and regional economies and might harm a country in terms of GDP. Hence, not taking any adaptation measures might have severe consequences for a region's or a country's competitiveness.

The EU may support risk reduction and adaptation measures, for instance by providing for financial aid within the specific priorities under the funds of the EU Cohesion Policy (Structural and Cohesion Funds), which regions can apply for. Generally speaking, funds for coastal protection works can mainly be looked for at national and EU level. About 4% of the total investments into coastal protection and risk reduction measures are defrayed by the EU (Figure 2) (CEC, 2009d; CEC, 2009e). In the light of the economic importance of coastal region, this constitutes a comparably low share. The bigger part of investments (63% over the period 1998-

2015) still needs to be procured by the national governments of the MS. Both, national and regional authorities together, make up for 95% of all expenditures, which is a high share compared to the 4% the EU contributes. In view of the fact that decision makers usually do not consider the option of inaction, precisely because of the enormous socioeconomic effects of future risks, MS are financially challenged (ibid.). This might turn into a problem especially for less developed countries that have to procure a high amount of national funds which might also be needed for economy-related investments such as the promotion of entrepreneurship, the creation of jobs or infrastructure development.

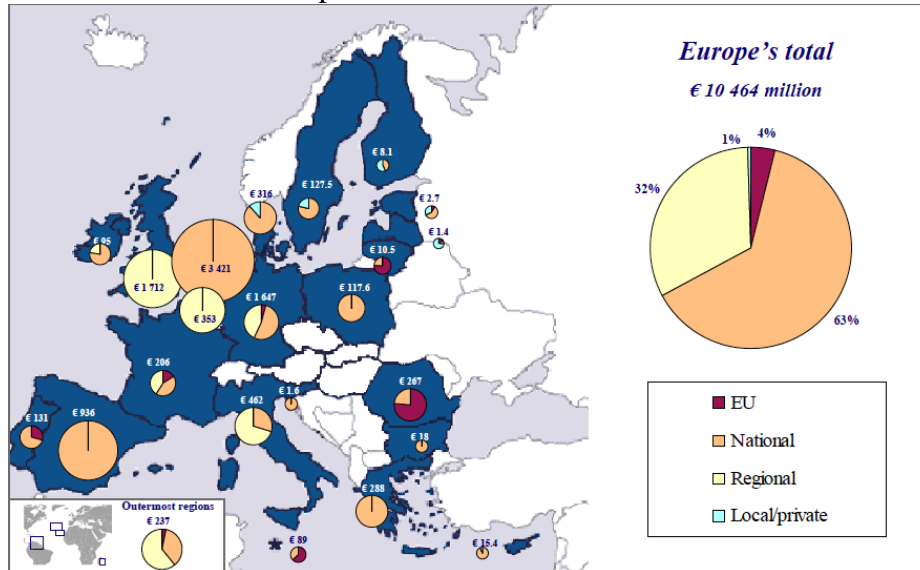


Figure 2. Normal coastal protection expenditure at European, national and sub-national level (regional, local and private) across Europe in € billion (1998-2015) (Source: CEC, 2009d, p. 11)

The Adriatic basin in northern Italy is supposed to be at high risk from sea level rise, coastal and river flooding, especially the Po Delta and the Venice Lagoon. The city of Venice, for instance, counts as a highly vulnerable part concerning flood hazards and extreme weather events. Reasons for the vulnerability of the Veneto region are its exposure to climatic changes as well as its sensitivity in form of existing socio-economic characteristics, such as a dense population and the presence of numerous economic activities, e.g. tourism, agriculture and industry (Carraro & Sgobbi, 2008; CEC, 2009e). Especially against the background, that the overall impact of climate change is relatively high in the Mediterranean, and especially in the Veneto region, the adaptive capacity needs to be equally high in order to cope with the projected future impacts.

In contrast, it has been proven within the ESPON Climate project “Climate change and territorial effects on regions and local economies”, that the vulnerability of the region stems, among others, from a low adaptive capacity (ESPON & IRPUD, 2011). As noted above this would actually be essential to fight the impacts though. The more surprising it is that no EU funds are allocated in the Veneto region. In fact, no EU funds are allocated in Italy for coastal protection at all, but it is solely borne by national and regional authorities (CEC, 2009d).

Considering the fact that adaptation measures do not play a very big role within the Italian Cohesion Policy anyway, it can be concluded that the current EU Cohesion Policy is not paying much attention to the respective vulnerability to climate change of a region and that adaptation measures are handled rather carelessly. In Italy Cohesion Policy focuses on the Lisbon Strategy and tries to achieve economic growth and more jobs. However, it does rather neglect the fact, that climate change impacts could have an adverse impact on these efforts, by affecting local and regional economies, thus counteracting economic development by harming physical infrastructure and/or human workforce. This is against the spirit of EU Cohesion Policy, which actually intends to promote regional competitiveness and employment in the more developed regions to maintain the strong overall competitiveness of Europe as a whole. Consequently, EU Cohesion Policy should make sure that its own efforts are not undermined. A potentially greater contribution of Cohesion Policy in regard to climate change adaptation should therefore not be left disregarded.

2.5. Cohesion Policy weaknesses and the current role of climate change

Cohesion Policy is a very adequate tool to reach economic growth and prosperity as well as solidarity throughout the European Union. The DG Regional policy has an enormous funding capacity after all. Though, to ensure all the different benefits the policy holds, its funding must be appropriately applied, so that its value can be used to the full extent (CEC, 2010a). For instance, Cohesion Policy funds can guide investment decisions by preferring the funding of adaptation measures or by demanding that the funded projects take account of future impacts (European Commission DG Climate Action, 2010). As an allocation of EU funds for the improvement of adaptive capacity is quite an essential requirement, the involvement of the DG Regional Policy is of great importance.

The Europe 2020 Strategy, the follow-up strategy of the Lisbon Strategy, and Cohesion Policy shall be very closely aligned. As the benefits and targets of Cohesion Policy can only be ensured when funding is purposefully applied, a specific focus on the Europe 2020 objectives is not far to seek. The Europe 2020 Strategy offers not only specific priorities to focus on, but also a framework that helps identify funding priorities. The reason for aligning Cohesion Policy with the Europe 2020 Strategy is that this linkage can help promote both, a further development of poorer regions within the EU and further growth of the EU as a whole (CEC, 2010a). However, this points at a further strong concentration on rather unprivileged and less developed regions within the EU.

Cohesion Policy intends to advance a balanced development of European regions and Europe as a whole. Therefore it aims at reducing existing economic, social and territorial disparities. To promote a harmonious development, Cohesion Policy supports investments that tend to achieve improvements in the fields of competitiveness, employment, social inclusion and environment (CEC, 2010b). However, despite some successes achieved in regard to competitiveness and

cohesion, a report for the DG Regional Policy, compiled by Fabrizio Barca in 2009, revealed the limits on judging policy performance in quantitative terms. In an analysis of the policies' strengths and weaknesses, two conclusions could be drawn: First, a place-based approach or strategy should be implemented and the policy should concentrate on just a few priorities which play a big role for the union and its citizens (Barca, 2009). Second, there needs to be a general reform of Cohesion Policy in order to be able to meet all the different challenges the EU will face in the coming decades. The report outlines that the policy has to distinguish between two goals: 1) increasing income and growth, known as the efficiency objective, and 2) reducing inequalities, known as the social inclusion or equity objective. Choosing and determining the above mentioned priorities requires a comprehensive political debate. Six potential priorities were recognised, one of which is "climate change" as part of the efficiency objective (ibid.).

Often Cohesion Policy is equated with financial redistribution within the Union. However, neither the efficiency nor the social inclusion objective could be achieved by a mere redistribution of (financial) resources among MS. Instead, the main purpose of Cohesion Policy is institutional improvement. By providing the needed goods and services, the work of public authorities should become more efficient (ibid.). In addition, Barca (2009) points out, that Cohesion Policy should consider all regions and not only the poorer ones, as social exclusion and weak institutional capacity can arise everywhere. However, current and future Cohesion Policy still seems to stick to "business as usual". The DG Regional Policy bases its policies primarily on a model of economic competitiveness, where environmental factors are hardly represented (Rayner & Jordan, 2010). Dhéret (2011) refers to this approach as an outdated system and claims that cohesion funding should not be limited to GDP indicators only. And even for the next period the allocation of funds "would be differentiated between regions based on their level of economic development (measured by GDP per capita), drawing a clear distinction between 'less' and 'more' developed regions" (CEC, 2010b, p. 10). In consequence, the managing of financial support is not going to be altered for the next period.

The EU Budget Review introduced some proposals on how to better apply cohesion funding and maximise the benefits in the future. It is stated, for instance, that a greater concentration of resources on EU priorities will be essential. This corresponds to the arguments outlined in the report by Barca (2009). It could be done through an identification of specific, important priorities. Such a concentration on certain priorities would allow a better allocation of funds and the addressing of different needs (CEC, 2010a).

Furthermore the Budget Review mentions the necessity to improve the quality of funding expenditure. It recognises that the institutional capacity at all levels is a key element for successfully producing and implementing policies that are essential for reaching the Europe 2020 objectives (ibid.). In order to obtain high quality expenditure, the allocation of funds should consider the respective capacity of each MS and its regions to apply these financial sources in the most efficient way.

Consequently, it should be the task of Cohesion Policy to finance the capacity strengthening of the public sector, which includes also the improvement of adaptive capacity.

In his report on future Cohesion Policy, Barca also underlines the need to consider climate change, by admitting that “cohesion policy, as any policy aimed at delivering public goods and services, must take account of the impact on climate change when designing measures” (Barca, 2009, p. 136). The current EU funding period already tries to take account of the problems climate change induces. By allocating 1.3% (4.8 billion Euros) of financial resources to promoting renewable energy, 1.2% (4.4 billion Euros) for energy efficiency and 9.2% (31.7 billion Euros) to the support of green transport, a step in the right direction has been made (ibid.). However, these investments only regard mitigation, not adaptation. This means that there are still several weaknesses in the current allocation of EU funding.

It has to be acknowledged, that in the Fifth Cohesion Report climate change finally plays a bigger role than in previous Cohesion Reports. A whole section is dedicated to “Enhancing environmental sustainability”, which concentrates on the future challenges of climate change and environmental degradation. In fact, the Commission even approves the territorial dimension of climate change and the role of Cohesion Policy to provide for a certain coordination at EU level by stating that “the growing threat of climate change and the political goal to radically increase the share of renewable energy in the EU underlines the fact that policies at different levels will need to be coordinated to respond to these various threats and opportunities in an efficient and effective way and to avoid them counteracting each other” (CEC, 2010c, p. 124). This shows the Commission’s awareness of the future task of Cohesion policy in regard to fighting climate change impacts, although a focus on mitigation is obvious, so that certain limits and weak points still remain.

3. Why adjust funding?

Summarising, it can be stated that there are several weaknesses of Cohesion Policy that should be addressed in the near future in order to achieve the efficiency and social inclusion objectives. First, there is no real place-based approach and territorial perspective yet. Second, there is no focus on priorities and the efficiency and equity objectives are not being addressed specifically enough. Third, attention is mostly paid to financial aspects and Cohesion Policy lacks an intervention in all European regions. At a first glance it is reasonable that under current conditions and in view of a rather difficult financial situation Cohesion Policy (or EU policies in general) rather focuses on economic aspects such as cost-effectiveness and an output-driven performance (Dhéret, 2011). But when aiming at considering both objectives, efficiency and equity, it is necessary to go beyond this economic rationale.

Climate change does in fact need special consideration. Due to its different regional pattern it needs a place-specific approach. It was shown by the ESPON Climate project that countries which are highly affected by climate change also seem to have

the lowest level of adaptive capacity and are mainly less developed, poorer regions with a low competitiveness index. This hampers cohesion as it might actually widen existing disparities between Europe's heartland and the peripheral countries. This is why the unequal distribution of vulnerabilities to climate change requires particular efforts which should help in changing these vulnerability patterns and in reducing imbalances in order to meet the key challenge of Cohesion Policy. Hence Cohesion Policy needs to take account of these varied vulnerabilities and of the risk of widening territorial disparities when designing its next funding period (ESPON & IRPUD, 2011). Although Cohesion Policy is already aware of the problem and the fact that it has to take over responsibility in climate change issues, it lacks the actual process. The urgency of the matter requires yet an immediate adjustment of policies, with a distinct focus on the improvement of institutional, or adaptive capacity respectively.

It has also been proven that there are vulnerable regions in more developed parts of Europe such as the Veneto region. A generalization of the given conditions, i.e. a general assumption that high economic development also means a high level of adaptive capacity, would therefore not take reality into account. When these regions are affected heavily by climate change, this could also have negative consequences for cohesion. This fact implies the need to consider the vulnerability of a region and to try to improve its adaptive capacity for increasing resilience rather than just concentrate on economic values. It is essential that future Cohesion Policy considers other factors and indicators than just the GDP so that its contribution to the Europe 2020 objectives can be facilitated and advanced. Only when it pays enough attention to other driving forces that determine cohesion and competitiveness, future Cohesion Policy will be able to translate and achieve its main objectives.

This future mission has also been clearly formulated by Barca (2009) who claims that Cohesion Policy must inevitably consider the specific climate change impacts when elaborating and implementing measures. It has already been pointed out, that mitigation and adaptation are unavoidable necessities to stabilise and promote competitiveness and cohesion. The current EU funding period already tries to consider this, by allocating a comparably high amount to climate change mitigation. Although the Commission acknowledges, that a certain financial support in regard to mitigation and adaptation will be necessary and that funding can and should support the development and realisation of adaptation strategies, much more emphasis has to be put on the application of funds.

Consequently, the weaknesses in the current allocation of EU funding need to be tackled for the next period. An identification and improvement of the potential of funds should take place so that they can be better used for addressing climate change vulnerabilities. It should also be ensured that climate change aspects are included in the funding reporting. In general Cohesion Policy needs to make sure, that its instruments are applied for climate change adaptation. As stated by the IPCC, a high economic development and existing technology are not the only aspects influencing adaptive capacity. Factors such as human capital and educated institutional abilities are

just as important. Thus, it shall be pointed out, that the adaptive capacity of a region must be considered and not only the level of economic activity: a high level of economic development does not necessarily imply an equally high degree of adaptive capacity (Adger et al., 2007). Accordingly, Cohesion Policy needs to take adaptation into account when adopting Operational Programmes and when deciding on the use of EU funds. It also has to consider the distributional effect of climate change and its diverse consequences across Europe. Adaptive capacity determines the vulnerability of a region and thus impacts current and future territorial disparities. Therefore it is essential that Cohesion Policy not only focuses on economic aspects, as it does now, but also on indicators such as the adaptive and the mitigative capacity (ESPON & IRPUD, 2011), as these have a significant influence on the level of achievements of the cohesion objectives.

4. Conclusions

As the Operational Programme of the Veneto demonstrated, the region's objectives are strongly focused on the improvement of the competitiveness and on the reduction of regional imbalances, while the problem of future climate change impacts was not addressed. The priorities indicate a clear focus on the Lisbon Strategy objectives, without taking account of the necessity to adapt to climate change. The Veneto is a relatively competitive and economically high developed region, while at the same time being vulnerable to climate change impacts. Further economic growth will most likely trigger the current vulnerability and cause conflicts between economic development and adaptation to climate change. Nonetheless, investments in adaptation, especially in coastal protection, are urgently required in the short term in order to maintain its current status. Here, those strategies should be prioritized where synergies with economic development options exist. However, there are no EU funds allocated in Italy for coastal protection, which means that coastal protection in Italy is borne by national and regional authorities. This example implies that the current EU Cohesion Policy is not paying enough attention to regional vulnerability to climate change and that the need for adaptation measures in some regions is rather neglected.

The example of the Veneto region also hints to the importance of considering all vulnerable regions, not only the less developed ones. Mitigative and adaptive capacity has to be high, so that a region can cope with future impacts. Economic development is just one of many determinants of adaptive capacity. It should not be generalised that only less developed regions have a low level of adaptive capacity. Vulnerability also concerns more developed regions, which means the focus cannot be on the level of economic development alone. In fact, climate change impacts could have even more severe outcomes for the regional and national economy – and thus also for the regional and national competitiveness and the competitiveness of Europe as a whole – when the more competitive regions, i.e. those regions that are highly productive in economic terms, are being affected and weakened. All regions and citizens can be concerned with disadvantages and thus should be equally protected. A high GDP is not a guarantee for the ability to adapt to external changes.

In conclusion, it can therefore be stated that the allocation of Cohesion Policy funds should be based on more indicators than just on the GDP and that other indicators, e.g. those that determine the adaptive capacity of a region, must be considered. Such an approach would benefit various regions and thus comply with both objectives; efficiency and equity. Taking account of the respective vulnerability of a region could therefore help, allocating EU funds in a more reasonable way.

5. Acknowledgements

This research was partly developed within the Marie Curie Initial Training Network “Changes: Changing Hydro-meteorological Risks as Analyzed by a New Generation of European Scientists”, funded by the European Community’s 7th Framework Programme FP7/2007-2013 under Grant Agreement No. 263953.

References

Adger, W.N., S. Agrawala, M.M.Q. Mirza, C. Conde, K. O’Brien, J. Pulhin, R. Pulwarty, B. Smit & K. Takahashi, 2007. Assessment of adaptation practices, options, constraints and capacity. In M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden & C.E. Hanson (Eds.), *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK: Cambridge University Press, pp. 717-743

Barca, F., 2009. An agenda for a reformed cohesion policy. A place-based approach to meeting European Union challenges and expectations. [online] Available at: <http://www.eurada.org/site/files/Regional%20development/Barca_report.pdf> [Accessed 26 April 2012].

Carraro, C. & Sgobbi, A., 2008. *Climate Change Impacts and Adaptation Strategies in Italy: An Economic Assessment*. [online] Available at: <<http://ageconsearch.umn.edu/bitstream/6373/2/dp080006.pdf>> [Accessed 26 April 2012].

CEC - Commission of the European Communities, 2007a. *Growing Regions, growing Europe. Fourth report on economic and social cohesion*. Luxembourg: Office for Official Publications of the European Communities.

CEC - Commission of the European Communities, 2007b. *Adapting to climate change in Europe – options for EU action. Green Paper COM(2007) 354 final*. [online] Available at: <http://eur-lex.europa.eu/LexUriServ/site/en/com/2007/com2007_0354en01.pdf> [Accessed 23 April 2012].

CEC - Commission of the European Communities, DG Regional Policy, 2007c. *Cohesion policy 2007-2013. Commentaries and official texts*. [online] Available at:

<http://ec.europa.eu/regional_policy/sources/docoffic/official/regulation/pdf/2007/publications/guide2007_en.pdf>
[Accessed 25 April 2012].

CEC - Commission of the European Communities, 2009a. White Paper Adapting to Climate Change: Towards a European framework for action. COM(2009) 147 final. [online] Available at:
<<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0147:FIN:EN:PDF>>
[Accessed 24 April 2012].

CEC - Commission of the European Communities, 2009b. Impact Assessment. Commission Staff Working Document accompanying the White Paper Adapting to climate change: Towards a European framework for action. SEC(2009) 387. [online] Available at:
<<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2009:0387:FIN:EN:PDF>>
[Accessed 24 April 2012].

CEC – Commission of the European Communities, DG Regional Policy, 2009c. European Cohesion Policy in Italy. [online] Available at:
<http://ec.europa.eu/regional_policy/sources/docgener/informat/country2009/it_en.pdf>
[Accessed 25 April 2012].

CEC – Commission of the European Communities, DG Maritime Affairs and Fisheries and Policy Research Corporation, 2009d. The economics of climate change adaptation in EU coastal areas. Summary report. [online] Available at:
<http://ec.europa.eu/maritimeaffairs/documentation/studies/documents/executive_summary_en.pdf>
[Accessed 25 April 2012].

CEC – Commission of the European Communities, DG Maritime Affairs and Fisheries and Policy Research Corporation, 2009e. Italy: Country overview and assessment. Country report for the study “The economics of climate change adaptation in EU coastal areas”. [online] Available at:
<http://ec.europa.eu/maritimeaffairs/documentation/studies/documents/italy_climate_change_en.pdf>
[Accessed 25 April 2012].

CEC – Commission of the European Communities, 2010a. The EU Budget Review. COM(2010) 700 final. [online] Available at:
<<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0700:FIN:EN:PDF>>
[Accessed 25 April 2012].

CEC – Commission of the European Communities, 2010b. Conclusions of the fifth report on economic, social and territorial cohesion: the future of cohesion policy. COM(2010) 642 final. [online] Available at:
<http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/cohesion5/pdf/conclu_5cr_part1_en.pdf>
[Accessed 25 April 2012].

CEC – Commission of the European Communities, 2010c. Cohesion Policy 2007-2013: Environment and climate change. [online] Available at:
<http://ec.europa.eu/regional_policy/themes/statistics/2007_environment_climate.pdf>
[Accessed 15 June 2011].

Dhéret, C., 2011. What next for EU Cohesion Policy? Going “beyond GDP” to deliver greater well-being. [online] Available at:
<http://www.epc.eu/documents/uploads/pub_1243_what_next_for_eu_cohesion_policy.pdf>
[Accessed 26 April 2012].

ESPON & IRPUD (Institut für Raumplanung, TU Dortmund), 2011. ESPON Climate. Climate Change and Territorial Effects on Regions and Local Economies. Applied Research Project 2013/1/4. Final Report/Version 31/5/2011. Dortmund: TU Dortmund.

Gagnon-Lebrun, F. & Agrawala, S., 2006. Progress on Adaptation to Climate Change in Developed Countries: An Analysis of Broad Trends. ENV/EPOC/GSP(2006)1/FINAL, Paris: OECD.

Rayner, T. & Jordan, A., 2010. Adapting to a changing climate: an emerging European Union Policy? In: Jordan, A., Huitema, D., van Asselt, H., Rayner, T. and Berhout, F. (Eds.), Climate Change Policy in the European Union: Confronting the Dilemmas of Mitigation and Adaptation. Cambridge, UK: Cambridge University Press, pp. 145-164.

Swart, R. & Raes, F., 2007. Making integration of adaptation and mitigation work: mainstreaming into sustainable development policies? Climate Policy, 7(4), pp. 288–303.

UNDP – United Nations Development Programme, 2007. Human Development Report 2007/2008 – Fighting climate change: Human solidarity in a divided world. New York: UNDP

Zuliani, F., Direzione Programmi Comunitari, 2007: Operational Programme “Veneto”. [online] Available at:
<http://ec.europa.eu/regional_policy/country/prordn/details_new.cfm?gv_PAY=IT&gv_reg=ALL&gv_PGM=1053&gv_defL=7&LAN=7>
[Accessed 25 April 2012].

Websites

European Commission DG Climate Action, 2010. [online] Available at: <http://ec.europa.eu/clima/sites/change/what_is_eu_doing/regional_policy_en.htm> [Accessed 23 April 2012].

European Environment Agency (EEA), 2012. [online] Available at: <<http://www.eea.europa.eu/themes/climate/national-adaptation-strategies>> [Accessed 23 April 2012].