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Developing Europe's Rural Regions
in the Era of Globalization

An interpretative model for better anticipating and responding to challenges for regional development in an evolving international context

WP 3

Environmental capital and sustainable rural development

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Work Package Report

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1. Introduction and context

Besides human resources, economic and social capital, the environmental capital is an important asset for rural development. On the one hand, it may be capitalized and, on the other hand, it has to be managed and protected. Regional development has to adapt to these challenges by finding ways to avoid an overstraining of natural resources. Simultaneously, strong restrictions that constrain economic development too much have to be avoided.

In the context of globalisation actors from outside the region become more and more important as potential users of natural resources. This development increases the pressure on the exploitation of natural resources, leads to conflicts and endangers the regional environmental capital.

Research within Work package 3 (WP3) intends to advance understanding of the environmental implications of globalization for rural regions, and to derive lessons from these observations that can assist rural regions across Europe in developing effective responses to globalization and its impacts.

With regard to the DERREG project's proposal the main objective of WP 3 is to examine *"the repositioning of rural environmental resources in global discourses and networks, and the consequences for the exploitation of the 'environmental capital' of rural regions as a dimension of sustainable rural development" (DERREG, 2008, p 23)* and, in particular, two key dimensions of this relationship:

- The engagement of global and regional actors in exploiting regional environmental capital to serve local and international markets; and
- the involvement of regional and global actors contesting the environmental implications of regional development strategies.

In doing so, the research contributes to the development of new knowledge with respect to the following issues (DERREG, 2008, p 15):

- The role of exogenous and endogenous actors in the valorization of scenic rural landscapes as amenity sites attracting international visitors.
- The repositioning of different forms of energy production with respect to local and global environmental concerns and regional development strategies.
- The influence of global environmental discourses, international agreements and transnational NGOs in the management of rural regional environments, and in the negotiation of tensions with economic development priorities.

Globalization processes are important forces that influence the development of European rural areas, and the impact of globalisation is likely to increase in the future. Globalization is often perceived as a threat to rural regions because it can lead to the marginalisation of rural economies, increase tendencies for out-migration and population losses, and thus contributes to a further peripheralisation of rural areas. On the other hand there is, however, also evidence that globalisation may offer a series of opportunities for rural regions. For instance, this might concern the development of physically attractive rural regions as sites for amenity consumption and tourism, or rural regions profiting from global marketing of niche regional produce.

In an attempt to develop a framework for a locality-based analysis of globalization in rural areas, Woods (2007) proposed the concept of the 'global countryside'. Following his argumentation, the global countryside represents the ways in which rural regions are reconfigured by globalization processes:

"Rural localities are transformed by new connections that are forged with global networks, global processes and global actors; yet this transformation cannot occur without the enrolment and acquiescence of local actors, both human and non-human, whose very incorporation in turn modifies the networks of which they are part to produce new, hybrid outcomes. Viewed from this perspective, globalization cannot be reduced to the subordination of the local by global forces; nor the power of the global to domination. Rather, the impact of globalization in reshaping rural places is manifest through processes of negotiation, manipulation and hybridization, contingent on the mobilization of associational power, and conducted through but not contained by local micro-politics." (Woods, 2007, pp 501).

The concept does not describe existing rural areas but a hypothetical space characterized by attributes which represent the projected end-point of current globalization processes impacted on rural space (Woods, 2009, p 50).

The emergent 'global countryside' is not a uniform, homogeneous space, but rather is differentially articulated, and contested, through particular rural areas. According to Woods (2007, pp 492) the 'global countryside' includes the following characteristics:

(1) Primary and secondary sector economic activity in the global countryside feeds, and is dependent on, elongated yet contingent commodity networks, with consumption distanced from production.

(2) The global countryside is the site of increasing corporate concentration and integration, with corporate networks organized on a transnational scale.

(3) The global countryside is both the supplier and the employer of migrant labour.

(4) The globalization of mobility is also marked by the flow of tourists and amenity migrants through the global countryside, attracted to sites of global rural amenity.

(5) The global countryside attracts high levels of non-national property investment, for both commercial and residential purposes.

(6) It is not only social and economic relations that are transformed in the global countryside, but also the discursive construction of nature and its management.

(7) The landscape of the global countryside is inscribe with the marks of globalization, through deforestation and afforestation; mines and oilfields; tourism infrastructure; the transplantation of plant and animal species; and the proliferation of symbols of global consumer culture, and so on.

(8) The global countryside is characterized by increasing social polarization.

(9) The global countryside is associated with new sites of political authority.

(10) The global countryside is always a contested space.

Although globalization is most commonly associated with the increased mobility of people and commodities, globalization is also experienced in the form of a developing global consciousness, in which people have a greater awareness of the world as a whole and their place in it (Steger, 2003). This global consciousness is articulated in, for example, campaigns about global poverty and inequality, and the promotion of universal human rights, but arguably its strongest expression is in the rise of a global environmental discourse.

The starting point for the globalization of values in environmental protection has been the discursive construction of a singular 'global nature', which Urry (2003) identifies as a prime example of globalization as performance:

"What were once many apparently separate activities are now regarded as interconnected components of a single global crisis of the natural world … This global nature has resulted from fusing various social practices that are remaking space. These include images of the earth from space and especially the Apollo 17 photograph of the 'whole earth' taken in 1972, transport policies, deforestation, energy use, media images of threatened iconic environments which are often markets of global threats, dramatic environmental protest, scientific papers on climate change, the ending of the cold war, NGO campaigns, records of extreme weather events, pronouncements by global public figures, global conferences such as Rio and Kyoto, and so on. Together these practices are performing a 'global nature', a nature that appears to be undergoing change that needs to be vigorously and systematically resisted and indeed reversed" (Urry, 2003, pp 6).

Appreciation of 'global nature' has been constructed through elements including the famous Apollo 17 'Earthrise' photograph of the planet, the Gaia thesis of James Lovelock, and natural history films, and stoked by perceived crises such as climate change, the impacts of which are spatially unlimited. From this perspective, 'global nature' is holistic but it is also composite in that way that it needs protection at all scales – a rationality encapsulated in the

mantra of “think global, act local”. Accordingly, global environmental consciousness has led both to the creation of international agencies and treaties aiming at addressing trans-border problems and standardising approaches to nature protection, and to expectations of changes in individual behaviour and regional policies and economic practices in the interest of the global environment.

A number of consequences follow for the regional development of rural areas:

(1) Traditional industries such as mining, as well as industrialized productivist agriculture, have come under scrutiny for their wider environmental impact.

(2) Infrastructural projects such as new roads and airports that have formed key parts of top-down development strategies have been similarly discredited for contributing to global carbon emissions.

(3) Local conflicts over commercial forestry, mining, or oil and gas pipelines have been amplified into global causes, involving transnational environmental campaigners.

(4) Sustainable development in rural areas has been identified as part of the solution to global environmental crises, especially the development of renewable energy production.

Global environmental discourse therefore plays a part in framing rural regional development, but its impact is mediated through processes of translation, negotiation and contestation involving local, regional, national and supra-national actors. In particular, formulating regional development strategies can require squaring local economic interests with global environmental concerns, or balancing competing claims about local and global environmental impacts as well as identifying regional resources that have potential for sustainable development.

In the context of WP 3 these negotiations are seen as part of the broader way in which globalization works, having adopted a relational understanding of the emergent global countryside (Massey, 2005; Woods, 2007). Globalization, in this view, proceeds not by domination and standardization (as it is often portrayed in popular discourses of globalization impacting on rural regions), but through hybridization and adaptation. Regional actors are engaged in the process of reproducing globalization, and regional policies and strategies can make a difference to outcomes. Indeed, seen critically, globalization results not in the homogenization of rural areas, but in new patterns of differentiation:

“The reconstitution of rural spaces under globalization results from the permeability of rural localities as hybrid assemblages of human and non-human entities, knitted-together intersections of networks and flows that are never wholly fixed or contained at the local scale, and whose constant shape-shifting eludes a singular representation of place. Globalization processes introduce into rural localities new networks of global interconnectivity, which become threaded through and entangled with existing local assemblages, sometimes acting

in concert and sometimes pulling local actants in conflicting directions. Through these entanglements, intersections and entrapments, the experience of globalization changes rural places, but it never eradicates the local. Rather, the networks, flows and actors introduced by globalization processes fuse and combine with extant local entities to produce new hybrid formations. In this way, places in the emergent global countryside retain their local distinctiveness, but they are also different to how they were before." (Woods, 2007, pp 499-500).

WP 3 examines the dissemination of global environmental discourse and the translation of local and global environmental concerns into regional development policy and strategies in five rural case study regions in Europe. These range from the periurban and industrialized countryside of Eastern Saxony (Direktionsbezirk Dresden) (no.9) and Saarland (no.10) in Germany, to the mixed urban/rural region of South Moravia (Jihomoravský kraj) (no.7) in the Czech Republic, to the more peripheral and agricultural regions Pomurska (no.6) in Slovenia and West Region of Ireland (no.2) (see Fig.1).

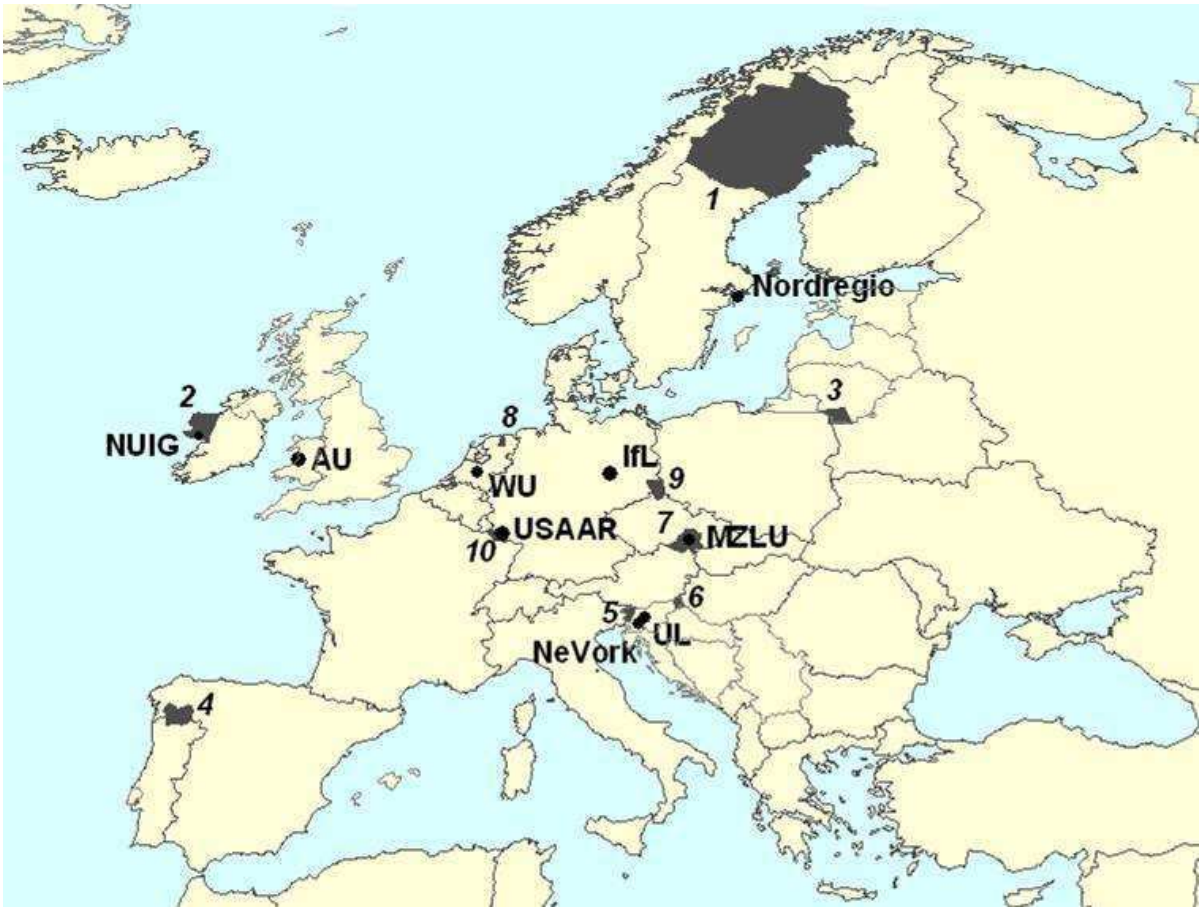

Fig.1: Location of case study regions (DERREG, 2008, p 19)

Research is structured around specific examples in these five case study regions, grouped around three threads (DERREG, 2008, p 23):

Saarland and Pomurska

Research examines the interaction of exogenous and endogenous actors in the designation and management of protected landscapes (including the *UNESCO biosphere reserve Bliesgau* in Saarland and the *Goričko Landscape Park* in Pomurska), and the opportunities for the exploitation of these natural environments for sustainable tourism and 'eco-economy' initiatives.

South Moravia and West of Ireland

Research considers the repositioning of the forestry sector within regional development sector under influence from the interaction of global, regional and local environmental discourses, including the relative positioning of productivist forestry, conservation, and opportunities for 'eco-economy' initiatives.

Direktionsbezirk Dresden

Research examines the incorporation of local and global environmental concerns in regional development strategies relating to energy production, and in particular, on the implications for the traditional industry of opencast brown coal mining and for new opportunities for renewable energy projects.

2. Conceptual approach

In the following, the terms ‘natural capital’, ‘sustainable development’ and ‘rural eco-economy’ are described and defined. These terms are closely connected with each other. The maintenance of natural capital, for example, is essential for environmental sustainability. And, sustainable development aiming at the conservation of the earth’s natural resource base is a prerequisite for the establishment of an environmentally sustainable economy – an eco-economy.

Term ‘natural capital’

According to Goodwin (2006) the term ‘capital’ generally identifies something that has the potential to produce something that is economically desirable. A capital stock is expected to generate beneficial flows. The notion of capital also implies that a stock has to be managed in order to maintain the capital stock’s value. In recent years the concept of capital has been used to describe different stocks of resources for regional development as ‘territorial capital’. This led to the identification of different types of capital like manufactured capital, human capital, social capital and natural capital (also called ecological or environmental) (Ekins, 2009, p 96). The extension of the notion of ‘capital’ to include terms like ‘human capital’ or ‘social capital’ has often been criticised as a reductionism that instrumentalized phenomena that have a value on their own. Although these arguments certainly have some ethical validity, it makes sense to address human skills and environmental resources as forms of capital on a heuristic level. Perceiving these resources as forms of capital makes it necessary to understand that environmental inputs in production processes have a value (are not ‘free’) and that reinvestments may be necessary to maintain or renew the stock.

The evolution of regional development policies and strategies in the last decades can be described as a series of dominant trends. One of these trends is clearly from interventionist, ‘top down’ approaches to decentralised, ‘bottom up’ strategies. Another trend may be described as leading from exogenous to endogenous development and then on to ‘integrated rural planning’. In a different perspective this evolution of regional development policies might also be formulated in terms of an extension or inclusion of different forms of capital as necessary factors for regional development. The traditional centralist and “Fordist” development policy approach of the 1950s and 1960s was mainly based on financial or produced capital. Transportation and technical infrastructure of lagging-behind areas were upgraded and new jobs were provided by branch plants of major industries. The new industries required new skills from their work force and shifted the focus to the importance of the human capital (health, education, skills) of a region. The shift in policy from exogenous to endogenous development made regional human capital even more important and also natural capital became relevant. In the last decade integrated rural and regional development policies that combine endogenous and exogenous impulses became prominent and social

capital (trust, social ties, social networks, capacity for collective action) was discovered as additional factor for regional development.

The importance of natural capital for the production of goods and services has been acknowledged by economists since the mid-twentieth century. For example, "*Alfred Marshall, the father of neo-classical economics, was keenly aware of the contribution of nature to production of goods and services and viewed distinctions between land and capital as trivial*" (Voora and Venema, 2008, p 9 referring to El Serafy, 1991). In 1988 Pearce re-discovered the term 'natural capital' to argue for the importance of environmental resources and ecological services in human production processes (Döring, 2009, p 128). Pearce and Turner popularized the term in their book *Economics of Natural Resources and the Environment* published 1990 (Voora and Venema, 2008, p 9 referring to Smith and Smith, 2006).

Natural capital is the natural environment from which emanates the goods and services that sustain life. More specifically, it is the basis for human activity and well-being (Voora and Venema, 2008, p 8). Therefore, human activity and well-being is closely coupled with the state of natural capital and its services (Voora and Venema, 2008, p 11 according to Carpenter et al., 2006).

Constanza (2008) defines natural capital as "*the stock of natural ecosystems that yields a flow of valuable ecosystem goods or services into the future. For example, a stock of trees or fish provides a flow of new trees or fish, a flow which can be sustainable indefinitely. Natural capital may also provide services like recycling wastes or water catchment and erosion control. Since the flow of services from ecosystems requires that they function as whole systems, the structure and diversity of the system are important components of natural capital*".

The term natural capital is a metaphor to indicate the importance of nature to human society (Ekins, 2009, p 100). The basic idea, borrowed from finance, is that the environment is a collection of assets which can provide a stream of benefits so long as these assets are not depleted. According to Ekins (2009, pp 96 referring to Pearce and Turner, 1990) natural capital is a complex category which performs four distinct types of environmental functions:

- The first is the **provision of resources for production**, the raw materials that become food, fuels, metals, timber etc.
- The second is the **absorption of wastes from production**, both from the production process and from the disposal of consumption goods. Where these wastes add to, or improve the stock of natural capital (e.g. through recycling), they can be regarded as investment in such capital. More frequently, where they destroy, pollute or erode, with consequent negative impacts on the ecological, human or manufactured capital stocks, then, as agents of environmental deterioration, they can be regarded as bringing about negative investment, depreciation or capital consumption.

- The third type of environmental function does not contribute directly to production, but in many ways it is the most important type because it provides the basic context and conditions within which production is possible at all. It comprises **basic life-support functions** such as those producing climate and ecosystem stability.
- The fourth type of environmental function contributes to human welfare through what is called '**amenity services**' such as beauty of wilderness and other natural areas. Both life-support functions and amenity services are produced directly by natural capital independently of human activity, but human activity can have an (often negative) effect on the responsible capital and therefore on those functions produced by them.

Wealth creation is the process of using all types of capital (manufactured, human, social and natural) in combination to give rise to flows of goods and services which people want, in such a way that the capital stocks, and the non-monetary flows of services from natural capital, are maintained or enhanced in quantity or quality (Ekins, 2009, p 97). If the capital stock is not maintained, then eventually the flow of goods and services to which it gives rise will decrease. A declining natural capital stock, for example, is a sign of environmental unsustainability. Accordingly, each type of capital stock may be associated with a form of sustainability (Ekins, ibid.). This raises the question if different types of capital are able to substitute each other. "*Where they can, it is clear that sustainability may be consistent with the decline of one type of capital stock as long as another type of capital is increasing sufficiently to compensate for this decline, and this condition has been called 'weak sustainability' (Turner 1993). Where they cannot, and one type of capital at some level makes a unique, uncompensatable contribution to human welfare, the maintenance of this capital at this 'critical threshold' is a condition of 'strong sustainability'*" (Ekins, ibid.).

Term 'sustainable development'

The term 'sustainable development' - popularised by the World Commission on Environment and Development (WCED) - has become one of the most widely used terms by governments and international organisations (Robinson, 2008). The Brundtland Report of the WECD refers to sustainable development as "*development that meets the needs of the present, without compromising the ability of future generations to meet their own needs*" (WCED, 1987). Both, the definition of the WCED and the concept itself have been much criticised. Due to the fact that the concept of sustainable development is very broad, it can accommodate many different perspectives, which again creates potential for misunderstanding.

Referring to Robinson (2008) the inherent contradictions between 'sustainable' and 'development' are at the heart of the expressed critique. "*In some circles this has led to greater emphasis upon the notion of 'sustainability', divorcing it from the more problematic 'development' (Callicott and Mumford, 1997)*" (Robinson, 2008, p 3). Consequently, two broad approaches have emerged:

(1) Developmental approach

The Brundtland Report emphasised the role of sustainable development to meet human needs. It identified two key concepts: first that the basic needs of all people must be provided – food, water, security, employment, etc.; and second that there are no limits to development but the development is a function of existing technology, the socio-economic organisation of society and its impact on environment (Phillips and Mighall, 2000).

From an economic point of view sustainable development seeks to improve material wealth, especially for the poor, and provide lasting and secure livelihoods. Thus, the emphasis of this approach is to meet social and economic needs. "*Following this route sustainable development used to maintain future levels of production and consumption. Good science and ecological principles are analysed, using concepts such as carrying capacity, cost-benefit analysis, economic efficiency, natural capital and valuation to achieve such aims*" (Phillips and Mighall, 2000, p 248). In this approach, economy attempts to place a value on the environment; and conservation is defined as the need to protect the resources.

(2) Radical approach

The focus of sustainable development is to conserve the earth's natural resource base. Sustainable development in this sense takes a more radical approach, where ecological stability is the key issue. This approach addresses environmental degradation, loss of soil and water quality and air pollution, and determines sustainable yields of renewable resources. Ecocentric ideas of stewardship of the earth by humans, rather than for humans, feature strongly in this view of sustainable development (Phillips and Mighall, 2000). Embodied in this approach is the idea of ecojustice: "*treating life-support systems*

of the Earth with a degree of care and respect that can only emerge if society also treats itself and its offspring similarly" (O'Riordan, 1997, p 11).

Today, "*sustainability is used at once to legitimate calls for unbridled economic growth, industrial expansion, globalisation, the protection of biodiversity, maintenance of ecosystems, social justice, peace and the elimination of poverty*"' (Bowler et al., 2002, p 5). At the very least this suggests a paradox in that sustainable development is deemed to support both the maintenance of the status quo and radical change (Robinson, 2008).

Since the publication of the Brundtland Report in 1987 and the 1992 Rio Earth Summit there is much discussion of the extent to which real progress has been made towards sustainable development. And, whilst at the global level, many voices question the ability of international agreements to deliver sustainable development, in many localities, patterns of intra- and inter-community relationships have begun to offer some optimism for a bottom-up approach to the wider sustainability goal (Marsden and Smith, 2005). According to Marsden and Smith (2005, p 440) "*creating sustainability in rural spaces across the EU is one domain in which local initiatives have been playing an important and encouraging role*".

Corresponding to the presented 'development approach' (see above) a crucial part of sustainable development is sustainable wealth creation. Following Marsden and Smith (2005) this requires that social and entrepreneurial initiatives should be merged with respect for natural, human, social and manufactured capital. It also requires that the disposal of the wealth created in this way shows a careful balance between satisfying consumption needs and maintaining re-investment levels to assure the long-term future of both ecology and enterprises. "*Overall then, sustainable wealth creation and local economic development require new entrepreneurial initiatives that focus on investing in the local environment, creating/strengthening local institutions, and employing people and their resources. But key questions surround how these new more sustainable models of development can occur and how they evolve*" (Marsden and Smith, 2005, p 441).

Against this background Marsden and Smith (2005) postulate the development of a new form of 'ecological entrepreneurship', which induces key actors to commit themselves to preserve cultural, ecological and environmental integrity and, however, to find new pragmatic ways to create economic benefits (e.g. employment) in the local community. These new types of entrepreneurship are able to mix alternative ecological strategies with new market-based developments (Marsden, 2006, p 210). This evolves the identification of potential high value traditional products and practices as well as using new regulatory and legal structures (e.g. logos and trademarks) to develop and to protect niche products. "*These network-based forms of ecological entrepreneurship can foster the wider development of 'socio-technical niches' (van der Ploeg, 2003) in particular geographical spaces. These can be seen as collective attempts to resist the dominance of globalisation [...] processes*" (Marsden and Smith, 2005, p 442).

Term 'rural eco-economy'

Rural areas that are rich in natural resources, such as fertile soils, forests, rivers (used for hydropower), coal, oil or natural gas have always attracted human population. Some of the earliest civilizations emerged in the fertile river valleys of the Nile, the Ganges, or the Yangtze. These agricultural societies could use the rich natural resources as basis of cultural development. During industrialization, many rural districts became centres of development, when coal, iron ore, oil and other geological resources were found in these areas. In the long run, rural development based on natural resources is only possible, if it is not based on over-exploitation of these resources, but on preservation of the cultural landscape, avoidance of pollution of soils, water and air, and safeguarding of the biological diversity of plants and animals (International Institute for Applied Systems Analysis, 2005). In the context of growing resource scarcity and the need to de-carbonise production and consumption systems, it is timely to reconsider the potentialities for combining the ecological with rural social and economic development in innovative ways (Kitchen and Marsden, 2009, p 274). Kitchen and Marsden (2009) see the emergence of a new role and potentiality for rural areas, especially at the local and regional level, which can be encapsulated in the emergence of a new and more territorially based rural development paradigm. One central feature of this emerging development paradigm concerns the need to take forward the more specific concept of the rural eco-economy (Kitchen and Marsden, 2009, p 274) (see Fig.2).

According to Marini and Mooney (2006) there is no single form of 'rural economy'. "*Rural economies were usually, then, originally based upon extensive agriculture and/or extractive industry (for example, agriculture, forestry and fishing), primary sector activities with high ratios of space to population*" (Marini and Mooney, 2006, p 94). Therefore, rural economies became synonymous with lagging or backward economies producing mainly primary goods. However, a reversal took place during the last quarter of the twentieth century as a new flow of capital, goods and opportunities headed toward many rural areas throughout Europe. Among the reasons for this reversal were the capital's search for cheaper labour, the creation of new markets, and better places for living (Marini and Mooney, 2006, p 95). In general, resource-based economic activities in rural areas have diminished in importance as providers of employment and shed labour. However, they also helped to contribute to the growth in other sectors of the economy that have encouraged progressively greater dependence of the rural population upon urban centres for jobs and services (Robinson, 2008, p 24). According to Robinson (2008) this has produced "*a cumulative effect of reducing traditional self-reliance and eliminating closed, more sustainable, systems in rural areas as the globalised economy impacts ever more strongly, even in peripheral regions remote from major urban-industrial centres*" (Robinson, 2008, p 24).

Today, in the era of globalization, many rural economies seem to be caught in the process of continuous squeeze between the prices and costs associated with land-based production and the growing market and consumer expectations of high-quality (e.g. in the agro-industrial

model of food production) (Kitchen and Marsden, 2009, p 275). This development demands the continued adoption of technological advancements, constant reduction in production costs and continued scale enlargement to reach economies of scale. However, "*large areas of rural space are unable to compete in this 'race to the bottom' scenario and, hence, are forced to rely upon the state for more and more support, which, in turn, acts only to moderate the effects of this treadmill*" (Marsden, 2006, p 203 according to Marsden, 1998). As a result, it has been difficult for key actors to harness the spatial, natural, regional and knowledge-based resources necessary to progress 'real' rural development. Faced with these problems rural actors (e.g. farmers) are being encouraged towards more 'value-adding' and multifunctionality. "*In order to escape from the macro-economic traps associated with the devalorisation of the rural resource structures, rural areas require managed exposure to these competitive forces to manage the need to develop, deepen, broaden and reground their interactions with the wider demanding public. Agriculture and wider land-based perspectives need to be reintegrated with broader questions of rural eco-economic development*" (Kitchen and Marsden, 2009, p 275).

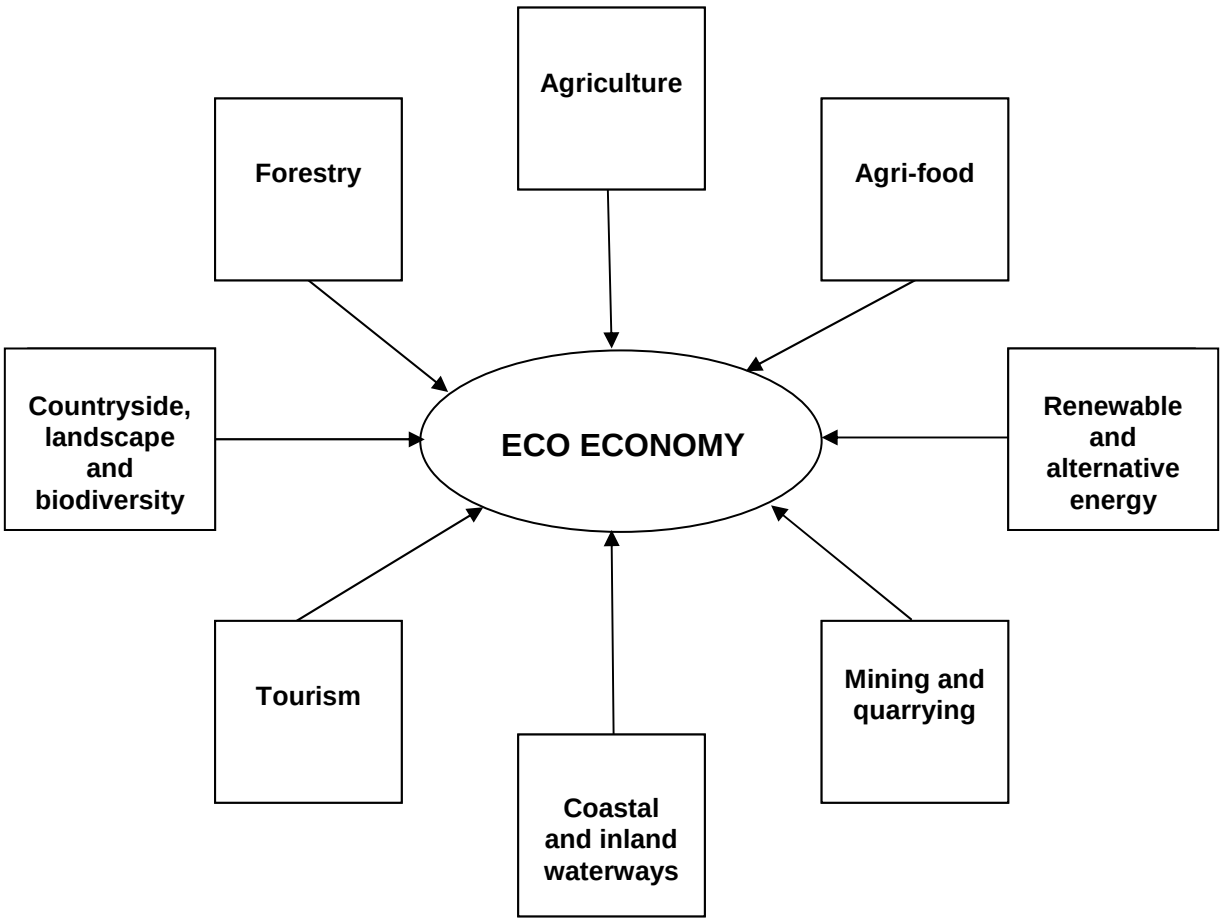

Fig.2: Potential sectors of the rural eco-economy (Kitchen and Marsden, 2009, p 276)

According to Kitchen and Marsden (2009) a potential response to the crisis in the rural economy can be the development of the integrative eco-economy. But how can an integrated and critical conceptualisation of the rural eco-economy be built? As Kitchen and Marsden (ibid.) see it, this requires a better understanding of how rural development processes might benefit, work and engender sustainability in the declining but contested carbon-based society that currently prevails. They suggest "*that an integrated range of wider eco-economy approaches are useful to a better understanding of sustainable rural development*" (Kitchen and Marsden, 2009, p 276).

Approaches that enable deeper insights into the eco-economy are:

- Ecological Modernization (EM) as a normative approach for sustainable development[1],
- Ecological Economics (EE) for its underlying ideas,
- Ecosystems Services (ESS), which seek to assign value to services provided from and by nature.

"*Each of these three bodies of theory, to varying degrees, begins to assume the realities of the eco-economy, even if they give little vision as to how it might function in practice. [...] All three strands here take us beyond seeing rural space simply as either an environmentally protected space or a consumption space for the urban populace. Rather, they point us towards the new complexities involved in redefining resource frameworks in ways that can utilise land and water-based resources held in rural spaces to create more positive externalities, allocations and efficiencies*" (Kitchen and Marsden, 2009, pp 279). Kitchen and Marsden (2009) conclude that EE, ESS and EM provide at least some threats of a theoretical starting-point for considering the rural eco-economy. However, these approaches are only partial in their incorporation of social and economic practices. "*They are limited in their focus on building new networks of production and consumption and creating more robust infrastructure (market mechanisms, innovative production standards and initiatives) by which economic and rural development can be sustained*" (Kitchen and Marsden, 2009, p 280).

[1] "*The ecological modernization theory analyses possibilities for a process of 're-embedding' economic practices – in view of their ecological dimensions – within the institutions of modernity. This modern re-embedding process should result in the institutionalization of 'ecology' in the social practices of production and consumption"* (Frouws and Mol, 1999, p 271). In this context Marsden et al. (2003) emphasize that the re-alignment between nature, quality, region and locale producers and consumers for a more ecological rural resource base is one central element of ecological modernisation.

Drawing on and adapting Brown (2001)[2], Kitchen and Marsden (2009) propose an integrated and socially and spatially embedded definition of the eco-economy. They define eco-economy as *"the effective social management of environmental resources (as combinations of natural, social, economic and territorial capital) in ways designed to mesh with and enhance the local and regional ecosystem rather than disrupting and destroying it. The eco-economy thus consists of cumulative and nested webs of viable businesses and economic activities that utilise the varied and differentiated forms of environmental resources of rural areas in sustainable ways. They do not result in a net depletion of resources but rather provide net benefits and add value to the environment and to the community"* (Kitchen and Marsden, 2009, p 289).

According to Van der Ploeg et al. (2002) the land-based rural economy comprises three interrelated dimensions (see Fig.3):

1. Traditional land use for the production of commodities.
2. Social, cultural and ecological interaction with the rural landscape and its inherent values. Rural enterprises contribute either to maintaining or changing the local ecology - either degrading or enhancing it. In addition they tend to constitute an intrinsic part of local and regional culture and the social fabric of the countryside.
3. Mobilisation and use of resources. Rural enterprises need to be in a position to exploit or create value from those natural resources.

In and through the processes of rural development the relations between these three aspects are being both socially reproduced and transformed by new attempts of rural actors to revalue and define their economic and resource structures (Kitchen and Marsden 2009, p 280). Traditional economic activities such as agriculture and forestry are transformed, diversified and expanded by linkages and associations with new actors and agencies (see Vergunst et al. 2008). There is a focus on new products that add more value in the new markets demanded by wider society: organics, shorter supply chains and value-added products (Kitchen and Marsden 2009, p 280).

[2] Brown (2001) suggested the idea of a so-called environmentally sustainable economy. "*An environmentally sustainable economy – an eco-economy – requires that the principles of ecology establish the framework for the formulation of economic policy and that economists and ecologists work together to fashion the new economy*" (Brown, 2001, p 4). From Brown's point of view, economists and ecologists working together can design and build an eco-economy - one that can sustain progress.

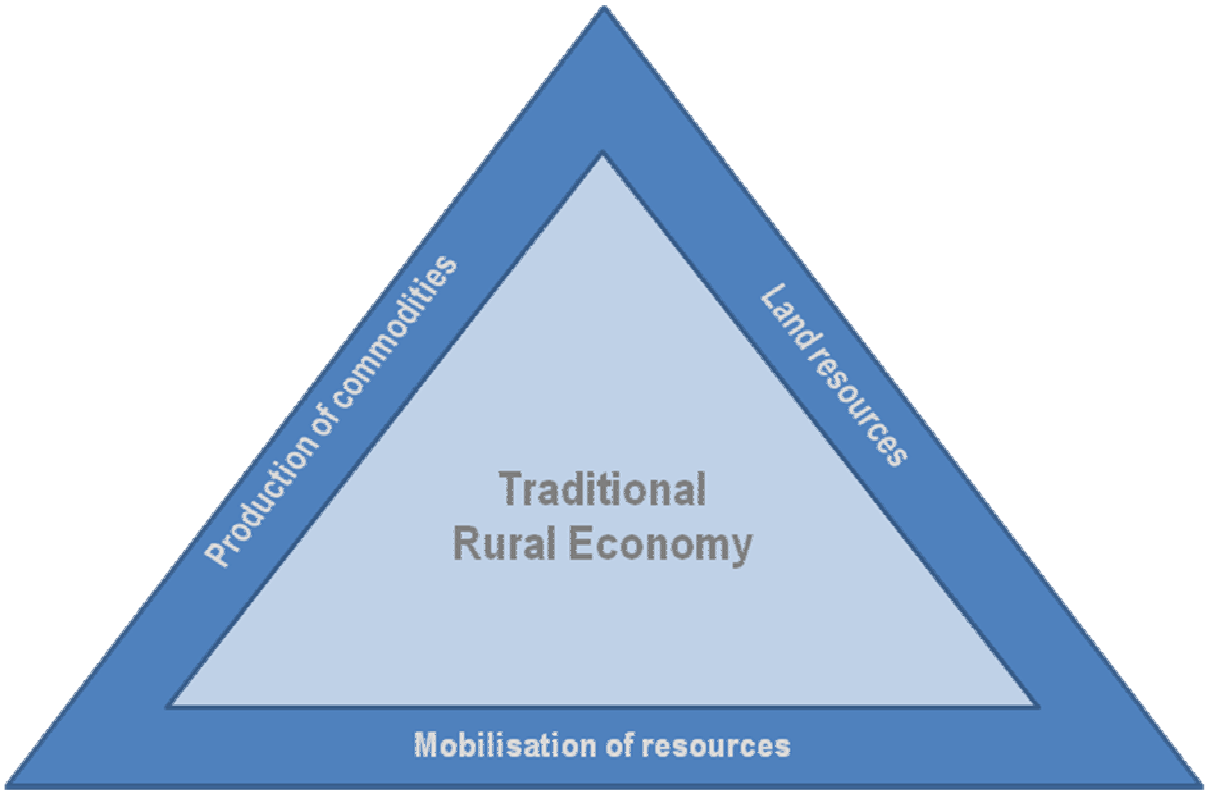

Fig.3: The three sides of the traditional rural enterprise (van der Ploeg et al., 2002, p 12)

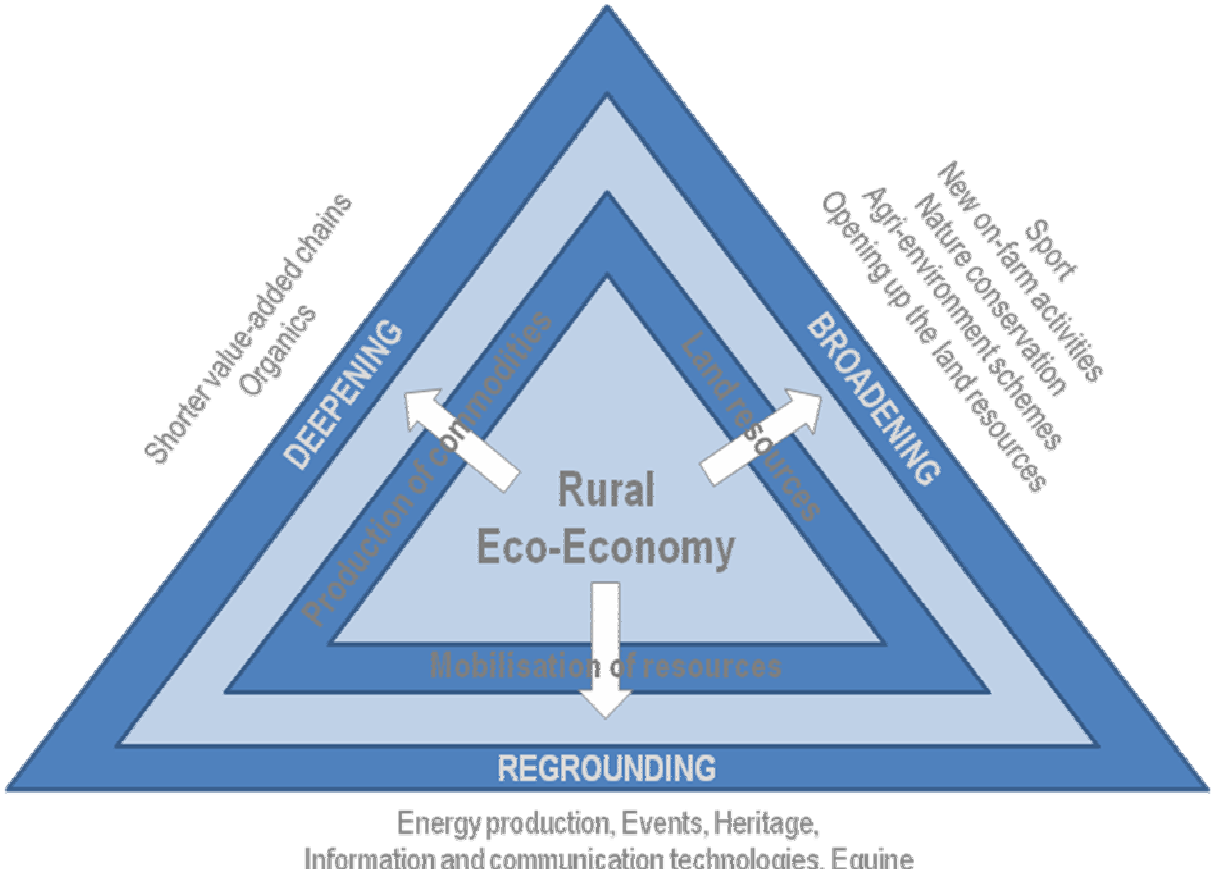

Fig.4: The dynamics of rural development at enterprise level (Kitchen and Marsden, 2009, p 281 adapted from van der Ploeg et al., 2002, p 12)

Figure 4 adapts and specifies some of the main features and examples of the rural eco-economy. *"Some, but certainly not all, are farm-based, as developed in earlier analyses. Rather this model […] incorporates a wider vector of rural enterprises and places these in a regional rather than a farm-based level of analysis. It also specifies, in this wider vector, three interrelated postulates for the development of the rural eco-economy: broadening, deepening and regrounding*" (Kitchen and Marsden, 2009, p 282).

- Typical examples of **deepening** are organic farming, high quality foods through on-farm production and short linkages between production and consumption created by selling to local markets.
- The interactions with the rural environment are subject to **broadening**, which includes nature conservation, providing agri-tourism, leisure, sports and amenity, heritage attractions and energy crops.
- Rural enterprises are grounded in new or different sets of resources and become involved with new patterns of resource use. Examples of **regrounding** the mobilisation and use of resources are energy production, special events, equine activities as well as information and communication technologies (Kitchen and Marsden, 2009, pp 280).

These processes – deepening, broadening and regrounding - are able to recombine and more effectively utilise natural resources. They present ways in which new or combined environmental goods and services can be created and they suggest new forms of the interdependence of the economy and ecology (Kitchen and Marsden, 2009, p 289). Thus, processes of deepening, broadening and regrounding embody highly relevant ways for reconstituting nature-society relations within rural development, which may facilitate a re-embedding of rural economic activities in the local ecology (Marsden, 2006, p 202).

In conclusion, Kitchen and Marsden (2009) suggest that a more sustainable rural eco-economy might be the result, provided that the state, as well as rural businesses, begin to play a more ecologically modernising role.

3. Methodology

Due to the different types of case study areas and the multifaceted research questions to be answered, a classic desk research seemed to be not the appropriate instrument for approaching the research questions. Thus, a mix of different methods including quantitative statistical analysis, qualitative analysis of media and planning documents and qualitative interviews with key stakeholders seemed to be suitable to characterise the case study areas and to expose their specific problems and matters of concern.

3.1 Statistical overview

In the initial phase of the project the WP 3 responsible *Leibniz Institute for Regional Geography* worked out a common template for the data collection in all WP 3 case study areas.

The main objective of WP 3 is to examine the repositioning of rural environmental resources in global discourses and networks, and the consequences for the use of the 'natural capital' of rural regions to promote an 'eco-economy' as a dimension of sustainable rural development (see chapter 2). Keeping this main objective in mind the data collection aimed at getting an overview about the environmental and economic situation, the development of the eco-economy between 1997 and 2007 and the regional potentials for a sustainable exploitation of environmental capital in the case study areas. The data base consists of six main categories: besides structural information, statistical data were collected in the fields of agriculture, forestry, tourism, energy/mining and environment. The period of investigation includes the years 1997, 2002 and 2007. The consideration of this time period enables statements about changes caused or influenced by globalization processes.

3.2 Documentary analysis

Documentary analysis is a specific method to analyse information that is embedded in different types of written sources of information. Basically, it is possible to analyse all types of written documents. A documentary analysis serves to achieve contextual understanding, accordingly it is often conducted at the beginning of research activities. For instance, documentary analysis can serve as a basis for surveys.

Documentary analysis carried out within WP 3 focused on documents relevant for regional planning, such as regional plans, regional development strategies/concepts etc. The following table shows the documents that have been selected by the project partners to conduct the documentary analysis (see Fig.5):

Fig.5: Overview of selected planning documents

Case Study Area	Name of planning document, year of publication
Dresden region, subarea Oberlausitz-Niederschlesien	▪ Regionalplan Oberlausitz-Niederschlesien, **2002** [Regional plan] ▪ Erste Gesamtfortschreibung des Regionalplans Oberlausitz-Niederschlesien, **2009** [first general update of regional plan]
Saarland	▪ Landesentwicklungsplan Umwelt (Flächenvorsorge für Freiraumfunktionen, Industrie und Gewerbe), **1980** [Development plan „environment (provision of areas for recreation, industry and trade)“] ▪ Landesentwicklungsplan, Teilabschnitt “Umwelt (Vorsorge für Flächennutzung, Umweltschutz und Infrastruktur)”, **2004** [Development plan, section “environment (provision of land use, environmental protection and infrastructure)“]
West of Ireland	▪ BMW (Border, Midland and Western region) Operational Programme 2000-2006, **2001** ▪ BMW (Border, Midland and Western region) Operational Programme 2007-2013, **2009**
South Moravia	▪ Development Programme for the South Moravian Region 2002-2006, **2002** Development Strategy for the South Moravian Region, **2007**
Pomurska region	▪ Regional Development Programme of Pomurska region 2000+, **2002** ▪ Regional Development Programme of Pomurska region 2007 – 2013, **2007**

The aim of documentary analysis within WP 3 was to answer general guiding questions for the concerning case study areas. This approach provides comparable answers. The following general guiding questions were to be answered by the documentary analysis within WP 3:

1) Which status does the rural eco-economy have in the regional planning documents with regard to the following topics?

   - **agriculture**: organic farming, extensive farming, landscape conservation / nature and landscape management
   - **forestry**: sustainable forest management / cultivation, afforestation
   - **tourism:** sustainable tourism (in general), cycle tourism, hiking tourism, sustainable water-based activities, health tourism, ecotourism, agri-tourism / farm holidays

- **energy:** renewable energy (in general), wind energy, solar energy, hydro power, biomass, geothermal energy

What changes can be identified when comparing current and previous documents? Has the significance of the rural eco-economy risen?

Is it possible to observe a shift of traditional rural resource exploitation activities towards an eco-economy? Which potential is seen in these new forms of environment-friendly economic activity for a positive regional development?

2) How far do the regional documents refer to the following ten topics of global environmental discourse?

- climate protection / climate change
- energy efficiency / saving of energy
- air pollution
- water pollution / water shortage
- waste problem
- land consumption
- deforestation
- soil erosion / soil degradation
- protection of species / extinction of species / loss of biodiversity
- designation of protected areas

What changes can be identified when comparing current and previous documents?

3) Which regional, national and/or global actors are mentioned in environment-related topics of the current regional planning documents?

What functions do these actors have concerning the regional development?

3.3 Media analysis

Regional newspapers play an important role in the discussion about natural capital and environmental resources and their valorisation within a rural eco-economy. By agenda setting they project global environmental discussions onto a regional scale, inform and sensitize the public and contribute to environmental awareness-raising.

Online archives of important regional newspapers were used to analyse the information flow of the mentioned themes within the WP 3 case study areas. Based on the evaluation of newspaper articles the following questions were expected to be answered:

- Which media presence do environmental topics have in regional newspapers in general?
- Which specific environmental topics are focussed in regional media?
- Has the regional media presence of specific environmental topics become more important during the era of globalization (during the last couple of years)? Do other environmental topics fade into the background?
- Has the setting of priorities changed for the last years?

In a first step the significance of single environmental topics within media coverage during the last years was evaluated. Search keywords concerning the themes ‘environmental capital’ and ‘environmental resources’ were selected to accomplish the basic media analysis. These search keywords were grouped under 10 thematic categories (Environmental protection, nature protection, water/soil, air/climate, landscape, agriculture, forestry, tourism, energy, waste/sewage). The first step consisted of quantitative analysis of every category. Thereby the general relevance of each specific theme in press coverage became obvious.

Environmental themes find their way into media by global or by regional discussions resp. conflicts. Themes dealt on global level are discussed in an abstract way. They can be found primarily in the supra-regional section of the newspaper. Themes emerged on regional level are published in the newspaper’s local section. The ratio of supra-regional to regional articles published can be ascertained by the classification of articles regarding to their position within the newspaper (general news / local news/ letter to the editor). Conclusions about frequency distribution can be drawn from total amount of articles as well as from the amount of articles in each category.

The results from the years 2000/2001 and 2008 were compared. The aim was to find out if the overall number of articles about environmental themes has increased or decreased. Furthermore, shifts of frequency distribution between particular categories and rubrics were identified.

In a second step, an in-depth-media-analysis was conducted to gain more detailed insights into regional discourses about specific environmental topics and the involved stakeholders. The specific topics were chosen according to the relevance of regional discourses.

Fig.6: Basis for investigation in the case study areas

case study area	name of newspaper URL	circulation (daily/weekly)	readership
Dresden region	Sächsische Zeitung www.sz-online.de	ca. 266 000 (daily)	ca. 731 000
Saarland region	Saarbrücker Zeitung www.saarbruecker-zeitung.de	ca. 155 000 (daily)	ca. 500 000
Pomurska region	Vestnik www.pomurje.si	ca. 16 000 (weekly)	ca. 65 000
South Moravia	Mladá Fronta Dnes www.idnes.cz	ca. 320 000 (daily)	ca. 1 000 000
West of Ireland	Connacht Tribune www.galwaynews.ie/connachttribune	ca. 24 800 (weekly)	ca. 150 000
	Western People www.westernpeople.ie	ca. 18 240 (weekly)	-
	Sligo Champion www.sligochampion.ie	ca. 12 100 (weekly)	-
	Sligo Weekender www.sligoweekender.ie	ca. 8 000 (weekly)	-
	Roscommon Herald www.roscommonherald.com	ca. 9 100 (weekly)	-

Data ascertainment

The media landscape in the particular case study areas has proved to be very specific (see Fig.6). Regional newspapers play a different role in the regional media landscapes, have different circulations and spatial areas of distribution. Some regional newspapers appear daily, while others are issued weekly. Taking this into consideration, it has been hardly possible to carry out the media analysis as initially planned. Every project partner had to adapt the given rules for the conduction of the media analysis to the existing structures of the regional media landscapes. This, on the other hand, makes it difficult to compare the results of the particular regional media analyses.

Moreover, there are two further aspects that have to be considered when assessing the results. First, the number of articles identified for every regional newspaper differs to a large extent. This can be the result of different causes, such as...

- a small number of articles in general as result of sparse media coverage;
- a manual choice of articles due to the lack of electronic search engines;
- specific functioning of search engines.

The second point for reflection concerns the assignment of keywords and articles as in a lot of cases it is not possible to assign articles clearly to just one particular keyword. The assignment is absolutely subjective and can differ among all project partners. Besides these

general remarks it seems suitable to make some partner-specific notes in order to clarify some of the findings:

Dresden region

- basis for identification of articles: *electronic search engine*;
- *daily* regional newspaper;
- identification of articles for the entire *reference years 2000 and 2008*;
- takeover of *all* identified *articles* into analysis.

Saarland region

- basis for identification of articles: *electronic search engine*;
- *daily* regional newspaper;
- identification of articles for the entire *reference years 2001 and 2008*;
- takeover of *all* identified *articles* into analysis;
- division of articles in “local news” and “general news / other news sections”;
- letters to the editor were not recorded by search engine.

Pomurska region

- basis for identification of articles: *manual search* (no search engine available);
- *weekly* regional newspaper;
- identification of articles for *one month per quarter (February, May, August, November) and reference year (2000, 2008)*;
- takeover of *all* identified *articles* into analysis.

West of Ireland

- basis for identification of articles: *electronic search engine*;
- *weekly* regional newspapers;
- identification of articles was based on categories, not on the given keywords;
- the categories “environmental protection” and “nature protection” were treated as one;
- identification of articles for the *whole reference period 2000 to 2008*;
- takeover *only* of *reviewed articles* into analysis;
- letters to the editor were not considered.

South Moravia

- basis for identification of articles: *manual search* (no search engine available);
- *daily* country-wide newspaper with regional supplements
  (“real” regional newspapers were chosen only for the second part of media analysis);
- identification of articles for the entire *reference years 2000 and 2007*;

- no differentiation between local and general news;
- letters to the editor were not considered;
- takeover of *all* identified *articles* into analysis.

3.4 Qualitative interviews with key actors

The predetermination of thematic foci made it difficult to develop a common WP3 guideline applicable for all case study regions. For that reason the guideline was divided into two parts: The first part of the guideline consists of general questions which were to be asked in all case study regions. Accordingly, the results from the first part are comparable between all five case study regions. The second part consists of topic-related questions (within the scope of the predetermined thematic focus, see chapter 1) which were to be developed by each WP3 partner individually. These questions were asked in just one specific case study region. Consequently, these results are not comparable.

The questions within the first part of the guideline aimed at…

- the assessment of the environmental conditions and potentials in the case study regions and their changes during the last decade,
- the relevance of environment capital in the context of regional development,
- the relationship between conservation and exploitation of environmental resources in the case study regions,
- the formation of regional opinions and the identification of environmental conflicts and involved actors.

Concerning the selection of key actors the DERREG proposal named enterprise managers, regional development officials, tourism operators and NGO representatives as potential WP3 interviewees. Besides, there is also mentioned a thematic focus which was to be analyzed within each case study area. For this reason the selection of key actors had to be made in a topic-related way. It was important to select persons who are involved in the specific processes. It was important to consider the whole spectrum of different regional opinions and actors.

All WP3 partners had to carry out pre-tests based on the translated guidelines to check the practicability of the first and second part of the guideline in their mother language. Then, a number of 10-20 interviews had to be conducted per region. It seemed important to have common approach to data handling in order to produce comparable empirical data sets in all case study region. Hence, the WP responsible strongly proposed to make audio recordings of all interviews, if the interview partners agree. In a second working step these audio recordings had to be transliterated, i.e. written transcripts had to be produced. These transcripts did not have to be translated into English, but were for internal use for the

preparation of WP3 partners' subreports. Transcripts were also recommended because the researchers who conducted the interviews and those who analysed the empirical data were not always identical. The transcripts were used for quotations of distinctive statements, too. Finally, the WP3 partners analysed and interpreted their transliterated interviews and formulated written subreports. A common structure for these subreports was prepared and submitted by the WP3 leader.

3.5 Identifying and characterising of good practices

According to the pre-defined topics (see chapter 1) the WP3 partners chose a number of about **10 good practices** from their region (Saarland region: 10 GPs; Pomurska region: 9 GPs; West of Ireland: 9 GPs; South Moravia: 10 GPs; Dresden region: 10 GPs). The choice of good practices was based on WP3 results achieved so far, especially by documentary research, media analysis (in-depth analysis) and the interviews conducted in the case study regions.

The good practices are representing successful projects, initiatives, networks or policies/strategies with positive effects on regional development. In this case, good practices can be either grassroots initiatives or regional projects/networks established by public authorities on different levels (local, regional, national, European). Main aim is to spread the ideas of these good practices to actors in other European regions.

The DERREG Lead partner worked out and disseminated a template as basis for a comparable overview of good practices from all WPs and case study areas. On the basis of this template the WP3 partners worked out data sheets based on information about their good practices from the internet, literature, local press and requests by phone or e-mail.

3.6 Meetings with regional stakeholders

All WP3 partners prepared meetings or one-on-one consultations with regional stakeholders to check the reliability and validity of results reached so far (statistical overview, documentary research, media analysis, qualitative interviews and the identification of good practices) (see Fig.7). After presenting and discussing the WP3 results in the case study areas, remarks from regional stakeholders were evaluated by the WP3 partners and considered in the further course of the project.

Fig.7: Meetings with regional stakeholders

Case Study Region (venue)	Organizer	Kind of consultation	Month of consultation	Number of participants
Saarland region (Saarbrücken)	USAAR	workshop	January 2011	12
Pomurska region	UL	one-on-one consultations via phone or e-mail	December 2010/ January 2011	2
West of Ireland	NUIG	one-on-one consultations via phone or e-mail	December 2010/ January 2011	5
South Moravia (Brno)	MZLU	workshop	December 2010	13
Dresden Region (Bautzen)	Ifl	workshop	December 2010	9

4. Results

WP3 results have to be considered in relation to their specific context. For that reason they cannot be presented across the case studies. In the following, main results from each case study area are presented embedded in their specific regional context.

4.1 Saarland region

The overall aim of the analysis in the Case Study Region Saarland was to gain more detailed insights into regional discourses about specific environmental topics and the involved stakeholders. The main emphasis of this survey was put on the establishment of the UNESCO Biosphere Bliesgau as a protection area. UNESCO-biosphere reserves shall protect the environment and also enable economic activities for regional development. The Bliesgau is a special biosphere reserve as it combines not only rural, but also suburban areas and moreover the old-industrialized city of St. Ingbert. Therefore a long discussion process has led to this with discussion on the local and regional level, but also with interventions of the national (German MAB committee) and international level of the UNESCO. Those are the reasons why the analysis in Saarland has been focused on this process.

Saarland is the smallest of the German states, besides the city-states. The unique history results from its location between French and German influence, shifting between these to countries several times during the last centuries. Saarland joined based on a referendum the Federal Republic of Germany, eight years after the establishment of the Federal Republic of Germany in 1957 (Dörrenbächer et al., 2007, p 7).

In 2009, 1,024 million inhabitants lived in the Saarland with a decreasing tendency. It is the densely populated with 399 inhabitants per square kilometre, in Saarpfalz-Kreis (the main county belonging to the Biosphere Reserve Bliesgau) the population density consists of 358 inhabitants per square kilometre (Statistisches Amt Saarland, 2010).

The main industry that shaped the view of the Saarland historically is the coal and steel industry. After both industries (coal mining and steel industry) declined while the automobile industry was gaining importance (Dörrenbächer, 2007).

The utilized agricultural area of Saarland represents with 1,130 square kilometers only 44% of the total area, mainly crop land and pasture (Guth, 2007, p 187). Saarland has 118 areas under FFH regulation with a total of 26,319 hectares (Saarland Ministerium für Umwelt, Energie und Verkehr, 2010).

Saarland has the following categories of environmental protection:

1. Naturschutzgebiete (nature reserves);
2. Nationalparke (national parks);
3. Landschaftsschutzgebiete (landscape protection areas);
4. Naturparke (nature parks);
5. NATURA 2000 – Schutzgebiete (NATURA 2000 protected areas);
6. Biosphärenreservate (biosphere reserves);
7. Naturdenkmäler (natural monuments); and
8. Geschützte Landschaftsbestandteile (Protected landscape elements)

(Saarland Ministerium für Umwelt, Energie und Verkehr, 2010).

The UNESCO biosphere reserve Bliesgau is situated in the southeastern part of the Saarland bordering France and Rhineland-Palatinate, including the municipalities of Mandelbachtal, Kleinblittersdorf, Gersheim, Blieskastel, Kirkel, the city of St. Ingbert, and the rural parts of the city of Homburg. It has been officially established in May 2009 after a long debate in the Saarland about the boundaries and about the restrictions in the different zones of the biosphere reserve. It surrounds a total area of 361.5 km² of which 11 km² are dedicated to be core zone and 70.5 km² are buffer zone. 111,000 inhabitants live in this region (Kühne, 2010, p 28).

The main characteristics of the designated UNESCO biosphere reserve Bliesgau are: population decrease, orchidaceous fields and fruit meadows, bunter and shell lime as well as the inclusion of an old industrialised city (Barth et al., 2006, p 31; Kühne, 2010, p 29).

In order to show the development regarding environmental capital and sustainable rural development in the case study region as a whole the research in Saarland refers to sources of current analysis as well as of the 1980s and the 1990s.

The **documentary analysis** (see chapter 3.2) showed already that some topics, such as “extensive farming”, “agri-tourism”, “biomass”, “geothermal energy” and “energy efficiency”, were not mentioned at all in the analysed development plans. Others topics, such as “sustainable forest management”, “water-based activities”, “renewable energies”, “solar energy”, “hydro energy”, “deforestation” and “soil erosion”, were referred to very generally or just very short. “Afforestation”, “sustainable tourism” and “ecotourism” were of no or almost no significance in the current development plan.

Interesting observations could be made with regard to “organic farming” and “wind energy”. While these topics obviously were not on the agenda of regional policy in 1980, their relevance has grown significantly until 2004. A similar development could be identified concerning the “protection of species”. Issues related to “water pollution” and “designation of protected areas” were of high relevance in 1980 as well as in 2004.

The development plan of 1980 was much more precise with regard to spatial assignments. The 2004 development plan, on the other hand, was rather general and often refers to specific programmes or plans that have been elaborated especially for particular topics. Furthermore, it seems as if the 1980 document pursued a more problem-oriented approach.

By the question of involvement of actors, it can be ascertained that the current documents refer just to regional actors. In most cases they are representing public authorities and private research and consulting institutions.

The **quantitative media analysis** (see chapter 3.3) leads to the following results:

- The number of articles about environmental topics increased significantly between 2001 and 2008. In 2008 the “Saarbrücker Zeitung” published 1,316 articles about selected environmental topics, whereas in 2001 the number of articles amounted to 824 (+ 60 %).
- Some keywords are outstanding with regard to their relevance for reporting, while others seem to attract only a little interest for the regional newspaper “Saarbrücker Zeitung”. “Climate protection” and “climate change” are the by far leading topics, whereas issues connected to the categories “water/soil”, “forestry” and “tourism” are of lower importance for reporting.
- The focus of reporting changed: some issues gained in significance while others lost their relevance for reporting. For instance, in 2001 a large number of articles were published about issues dealing with “nature reserves” (142), “landscape conservation” (82) and “animal husbandry” (65). In 2008 these keywords lost in relevance as the number of articles dedicated to them declined. On the other hand, other keywords gained in significance as the number of articles related to them increased: this is particularly the case for keywords, such as “climate protection”, “climate change”, "energy consumption", "saving of energy", "renewable energy” and “waste separation”.
- In 2008 most articles (67 %) were published as local news. This share was higher in 2001, when 77 % were published as local news.
- Some categories seem to be typical for local reporting, such as "water/soil", “landscape”, “tourism” and “waste/sewage”.
- Some cases - especially the categories “air/climate” and “energy” - indicate a rising relevance of the selected topic even on national or global level.

The **in-depth-analysis** (see chapter 3.3) of the selected articles from 2001 up to 2006 showed that media coverage about the selected topics of investigation was limited to the regional context. There were two main strands of discussion on the biosphere reserve Bliesgau during the examined period from 2001 to 2006:

- the boundary and zoning of the biosphere reserve as well as
- the restriction in the core zone for farmers and hunters.

The first matter of discussion mainly dealt with the inclusion or exclusion of the old industrialised city of St. Ingbert. The member of the city council and the UNESCO wanted an inclusion, the Saarland Minister for Environment and Environmental Protection Organisations wanted exclusion.

The second matter of discussion was a land use conflict. Two main opponent groups are involved: on the one hand the farmers and hunters who wanted to use the land as they always did, and on the other hand the ministry of environment of the Saarland and environmental protection organisations which wanted a core zone with no permitted use for farming or hunting to strengthen the environment.

The opinion of the different groups was also proved by the main international stakeholder in this case, the UNESCO. To be designated as a biosphere where regional development, economic activities are combined with landscape protection; this always has to happen against the background of the UNESCO guidelines. UNESCO can influence the development through the national MAB committee and, in this case, they have done so. Thus, the development to a biosphere reserve was a discussion process on a local and regional level, but eventually it was heavily influenced and partly controlled by the national and international level.

After the UNESCO designation on May 26th, 2009 the biosphere Bliesgau is still facing further challenges which are connected to the designation as a UNESCO biosphere reserve. This designation entails many obligations that are conditions and restrictions for the actors on the one hand and that provide opportunities for key personalities to make progress in achieving their aims concerning nature conservation on the other hand. Hence, not only prospects but potential for conflict emerged which still complicates regional development in rural Saarland. **Interviews with key actors**[3] (see chapter 3.4) as a primary survey in the biosphere reserve allowed for the identification some of the conflicts.

Generally, two different opinions predominate concerning the environmental situation and the environmental potentials, as well as the environment protection and the sustainable use of resources in the case study region, which are both connected to the latter. On the one hand, the agriculture experts think that the environmental situation is very stable. They see threats only in restrictions concerning land use. On the other hand, the other experts (representatives of administrative level as well as of companies and other institutions) think that especially an intensive way of farming or one which is geared towards monocultures affects the environment essentially. These respondents concur that a stronger economic orientation towards sustainable forms of economy, i.e. organic farming, gentle tourism, sustainable forest management, renewable energies, the initiation of regional economic cycles in the sense of an ‘eco-economy’ should be advanced in the case study region.

[3] This part of research is based on the expert interviews with twelve key actors, which were directly or indirectly involved in the process of the development of the Biosphere Reserve Bliesgau and represented administrative level, agriculture as well as companies and other institutions.

Furthermore, ecological interests and thus the idea of a rural eco-economy have been highlighted explicitly in Saarland: "*For the interest of environmental protection (…) the share of areas for organic farming has to be stepwise increased. The use of fertilisers and pesticides has to be reduced to a reasonable extent*" (Saarland – Ministerium für Umwelt, 2004).

With the thematic focus on "management of protected landscapes" in the UNESCO biosphere reserve Bliesgau some **Examples of 'Good Practice'** (see chapter 3.5) were selected. Due to the fact that the Bliesgau is a small-scaled area, the number of regional activities is limited. Nevertheless, altogether ten examples with positive impacts on regional development could be identified and characterized.

There was an importance of identification of good practices for the region especially concerning a positive integration of conflict issues. The identification and explanation of the good practice showed the work of associations or institutions, which is exemplary and other key actors and regions can learn from it. The most important work of the good practices in Saarland is establishing of regional marketing as an important and supporting pillar and raising awareness for regional products. Execution and promotion of public relations and environmental education take place, too. Regionally sustainable and ecologically produced goods and renditions of services that go along with it are promoted in doing so, but also traditional farming to preserve the richly-structured cultural landscape as well as regional partnerships. The promotion of regionally typical food culture helps to identify with the rural region. Furthermore the good practices have the following objectives:

- Nature conservation through extensive cultivation.
- A sustainable protection of the tree population is to be guaranteed through replanting and new creation.
- Preserving a versatile range of variety.
- Developing of education programs and education offers.
- A regional beverage and kitchen culture with regional products.
- The cultural landscape of the Biosphere Reserve Bliesgau is to be preserved.

4.2 Pomurska region

Pomurska region covers an area of 133,753 hectares which is 6.59 % of the total Slovenian territory. Geographically the region is composed of two geographical units: the first part consists of the fertile area of *Murska ravan* (Murska plain) with abundant groundwater resources and agricultural land where consequently mostly conventional agriculture is developed, the population density is higher and the infrastructure is well-developed. The second unit consists of the hilly areas of *Goričko*, *Lendavske gorice* and a part of *Slovenske gorice* coined by a high biodiversity and preserved cultural landscapes where settlements are rare and dispersed. However, the population density in the region is relatively low - only 89 inhabitants per square kilometre (SORS, 2010).

Compared to other Slovenian regions Pomurska is historically recognized as underdeveloped region. Already in the past the region was described as being predominantly rural characterized by a high share of people employed in agriculture and a high share of agricultural land. Together with its location close to the borders to Croatia, Hungary and Austria and poor traffic connections, the region was perceived to be a typical shrinking region affected by negative natural growth rates and high out-migration. These parameters are also correlating with the low GDP per capita and the highest rate of registered unemployment in the country (13.4 % in December 2007 which was almost twice higher than the national average). With the completion of the highway in 2008 the region is well connected to other areas of Slovenia and at least the connection problem is solved. Nevertheless Pomurska region remains the region with the lowest economic power in Slovenia.

The aforementioned economic and social situation in the region resulted in an intervention measure of regional policy of the Slovenian Government in 2009, namely the implementation of the *Law on development support to the Pomurje region in the period 2010-2015* (so called "Pomurje Act"). The act was introduced when it became clear that the measures of the existing *Promotion of Balanced Regional Development Act* were not able to resolve the acute situation in the Pomurska region. After two major companies in the region (*Mura*: textile industry and *Pomurka*: food processing industry) went into bankruptcy in 2009 and the unemployment rate rose to more than 20 %, the region faced a number of severe social issues. Following the "Pomurje Act" the *Programme for promoting competitiveness of the Pomurje Region 2010-2015* was launched at the beginning of 2010. Its instruments were focused to raise the competitiveness of the region through the promotion of investments and job creation. As far as recent research is concerned the following main long-term development priorities and opportunities of the region are of importance:

- geothermal energy and renewable sources,
- food industry and rural development,
- tourism.

Preserved and maintained environmental capital - main advantage of the region

The major capital of Pomurska region is the preserved natural environment which is not only shown through the official statistical data, but which is also recognized through the regional media and the opinion of main regional stakeholders. It is also reflected in best practice examples as well as in the overall opinion of the local population which is very proud of their area - not only of the natural environment but also of their tradition and cultural heritage in a wider sense. The in-depth **media analysis** (see chapter 3.3) based on the research of newspaper articles in regional newspaper *Vestnik* revealed the growing importance of environmental issues. This is confirmed by the number of articles about these topics between the years 2000 and 2008 as well as by the broadening of topics in the year 2008. Especially protected areas are of outstanding interest. Articles about "environmental awareness", "water protection" and "nature reserve" were the leading topics, whereas issues like "ecosystem", "landscape conservation", "energy crops", "deforestation" and "recycling of waste" were of no importance for reporting.

The major development document, the *Regional development programme of Pomurska region 2007 – 2013* (RDP of Pomurska region) recognizes the "environment and space" as one out of five main development priorities and opportunities, focusing on the improvement of the water quality, the revitalization of degraded areas, sustainable protection of strategic natural resources and cultural landscapes, the establishment of institutions for sustainable development and spatial planning, permanent "environmental" discourses with the public, energy efficiency, renewable energy use and other measures supporting the use of renewable resources. The **documentary analysis** (see chapter 3.2) was focused on previous and current regional development documents where the strategies and programmes for future sustainable regional development are included. The results showed that some topics such as "organic farming", "sustainable tourism" and "renewable energy" gained scientifically in importance during the last years.

One of the consequences of the preserved natural environment as well as of the well maintained cultural landscape is a high percentage of the region that has been protected as classical protected areas, according to IUCN categories (35.6% of the regions territory). In 2004 additionally the areas of Natura 2000 have been defined, covering 43.5% of the region's territory. Among the biggest advantages of the region, related to the environmental capital, the renewable energy sources are an important issue. They are directly linked to the region's geographic location and natural conditions (i.e. the opportunity to use solar and geothermal energy). The successful examples of sustainable use of natural resources concern in most cases the use of renewable energy sources, establishment of waste collection centers and some sustainable tourism projects.

Although the preserved natural environment is the main advantage of the area the region is also facing quite severe environmental problems which are present not only in the local media but also listed by the region's most important stakeholders. **Interviews with key**

actors (see chapter 3.4) outlined problems such as polluted groundwater and soil as a result of intensive farming; the lack of a sewage system in some areas; the use of the arable land for the highway construction as well as the increased air pollution due to heavy traffic; furthermore, the overgrowing of agricultural land (caused by out-migration and abandonment of agriculture), especially in the hilly Goričko area and a low environmental consciousness result in numerous garbage dumps in the natural environment.

Pomurska region is due to its geographic characteristics and historic as well as recent development an agricultural region. However, in recent years it is becoming also an important tourism destination with some successful sustainable tourism practices and relatively well-defined protected areas.

Agriculture

The region itself is perceived to be the most agricultural region in Slovenia. Fertile soils, a continental climate and flat land provide good conditions for field crops farming and mixed cropping, which is a typical activity of the agricultural holdings in the region. However, different environmental issues and problems arise from environmental burdening (intensive agricultural practices) such as the pollution of the groundwater, the pollution of soils etc. The regional environment is also endangered by the process of overgrowing (especially in the hilly area of Goričko), issues of national/regional self-sufficiency of agricultural production and the production of quality and healthy food products. The country (Slovenia) has been brought to extremely low levels of self-sufficiency of agricultural/food production (around 40 %). The amount of agricultural land per inhabitant is just over 5,000 m^2 on national level, but much higher on regional level (7,000 m^2). Furthermore, the high amount of arable land per inhabitant in Pomurska region (4,785 m^2) should be outlined because it is five times higher than on national level (884 m^2). So the Pomurska region has a strong capacity as "food producing region". Also the overall assessment of interviewed key actors in the region shows that the region has the potential to become self-sufficient especially in the field of food production (farming) and energy supply. Such orientation can lead to better living conditions in the region and higher quality of life.

From the aspect of sustainable regional development the implementation of organic farming is crucial for the future development of the region. Organic farming is a topic that has gained in importance in regional development documents especially during the last years. However, statistical results do not reflect the increase of its importance. Organic farming practices have grown across Slovenia as a whole over the past decade, yet in Pomurska the take-up of organic farming is less developed than in other areas of the country. In 2010 only 3 % of agricultural holdings were producing on the basis of organic principles and just 1 % of agricultural land is under organic production.

Sustainable tourism and protected areas

The role of national institutions in the field of sustainable tourism development and management of protected landscapes is concentrated mostly in the field of legislation formation and its implementation in concrete cases. In Pomurska region three regional development agencies (RDA) were identified having an unequal role within the overall regional development. *Regional Development Agency Mura* is the main development initiator in the region, supporting not only the project ideas but also offering help for the networking of regional stakeholders as well as in project management. The role of two further RDAs is minor, but they are still initiating innovative ideas in the field of both - sustainable tourism development as well as in management of protected landscapes. RDAs are directly involved in sustainable tourism initiatives as well as in projects – as project leader and more often as project partners in teams consisting of regional, national or very often international stakeholders. Through their projects RDAs are indirectly positively influencing also the management of protected landscapes especially in case of Goričko Landscape Park. Parallel to the RDAs there are 27 municipalities in the Pomurska region and a long list of NGOs which are very active in various fields of the society. The very strong social capital of the region is reflected in the good practices that were defined, being one of the most important factors in project implementation. Municipalities, NGOs as well as other public institutions of regional importance are directly involved either in sustainable tourism development (mostly through projects) or in management of protected landscapes (i.e in the case of Goričko Landscape Park or in the case of Natura 2000 areas).

All defined **examples of good practices** (see chapter 3.5) were initially supported by EU funds (in a small share combined with national and local funding). Therefore their existence is time wise limited and only the future development will show whether they will remain a good practice. Pomurska region already gained large amounts of EU funds and a significant part of them was directed towards tourism development projects (which were not necessarily sustainable). However, it can be concluded that best practices have positive effects on regional development of Pomurska case study region. One of the most important tourism objects in the region is the spa *Terme 3000* in Moravske Toplice which has intensively developed in the past decades and which is slowly linking its offer with the overall tourism offers in the region. The latest development of tourism (such as biking trails and other projects based on the tradition of the area) was mostly reactivated through various EU funds. Some segments of this offer can be recognized as a good practice of sustainable tourism, but not the spa itself. Looking closely at tourism some other sustainability segments with the most important one to be the use of the geothermal energy can be defined. However, the fact of using renewable energy sources is not sufficient to define the whole spa as a sustainable tourism best practice in the region. Recognized best practices are rather smaller projects which focus various regional themes and are still vivid after project completion.

Goričko Landscape Park is the largest protected area in the region. Established in 2004 it is covering 34.5 % of the region. Its main quality is the preservation of the cultural landscape and the numerous localities of cultural heritage reflecting the natural conditions of the area to which the local population adapted throughout the centuries. There are also nature values within the park, additionally protected according to IUCN categories. In the field of protected area management there is only one management institution in Pomurska region (The Goričko Nature Park) which cannot be defined as a good practice, but more likely as the "only" practice in the region. On the other hand, the Goričko Landscape Park Management institution is also initiating and implementing projects in the field of sustainable tourism as well as in the management of protected landscapes. These activities are strongly dependent on EU funding. Therefore the sustainability of the project results can be to some extent questionable.

Due to its border location Pomurska is able to use sources from the cross border cooperation programs with Austria, Hungary and lately also with Croatia. Recent projects in the region are mostly oriented either to sustainable tourism development or to nature preservation and other environmental issues. The more problematic part is the sustainability of the project results. Unfortunately, this segment is still hard to be objectively assessed due to the short time dimension that has passed from most of the project completions.

4.3 West of Ireland

The West of Ireland is predominantly a rural region with considerable potential for the capitalisation of natural capital. Increasingly affected by globalisation and external actors who have the capacity to exploit natural resources, the West of Ireland has the potential to reposition rural resources, such as forestry, in order to facilitate the building of an eco-economy. This segment of the report will explore the research findings and results from the West of Ireland case study region in light of the main objective of the WP3 project proposal. As a starting point the report will explore key findings of a statistical overview carried out initially on the broader Border Midlands and West Region of Ireland while then concentrating more specifically on the West of Ireland region. Additionally, the report will highlight findings from documentary research, media analysis, interviews and the identification of good practices (see chapter 3).

The Border, Midlands and West (BMW) region of Ireland covers a large and diverse area (32,481 km²; http://www.iro.ie/bmw_assembly.html) and comprises thirteen counties, including six border counties; three western counties and four midland counties. The Region accounts for some 47 % of the land area of Ireland, 26.5 % of the population (2007: 1,16 mill.) and contributes some 19 % of the GDP of the country. Narrowing the focus of the case study region further to the West of Ireland, statistical analysis identified this region as consisting of three counties, Galway, Mayo and Roscommon. Considered a NUTS 3 region the area occupies a peripheral location on the north-western edge of Europe and is regarded as 'predominantly rural' in character. Between 1995 and 2007 figures for the West Region

demonstrate the rapid growth of the regional service sector over this period in terms of its Gross Value Added (GVA), which increased by over 250 %. Overall, the industrial sector also expanded by over 200 % across this period despite a period of contraction between 2001 and 2003, whilst the primary sector of agriculture, fishing and forestry experienced an initial period of growth between 1995 and 2000, before declining to around 86 % of the 1995 figure by 2005. Throughout this favourable economic period the region experienced considerable growth in overall employment, including significant increases in service sector employment. These developments resulted in moderate to low unemployment and additional jobs in low-grade positions up to 2008, but since then a dramatic increase in unemployment has ensued.

The recent economic recession focused attention on local and regional development in rural areas and the opportunities presented for eco-economy based development. The **documentary analysis** (see chapter 3.2) identified key areas of significance such as: organic farming, extensive farming, afforestation, and renewable energies, wind energy and solar energy, all of which were highlighted in the 2000-2006 National Development Plan. The current National Development Plan 2007-2013, on the other hand, attached more importance to these issues, which is expressed through the allocation of larger amounts of funding. Other topics, such as: biomass, hydro energy and geothermal energy were newly introduced to regional planning within the 2007-2013 BMW Programme, even if in a rather general way. Most of the tourism-related topics: cycle tourism, sustainable water-based activities, health tourism, eco-tourism and agri-tourism in addition to land consumption and soil erosion are alluded too, but appear less important, at least in the current regional planning document. On the other hand topics such as: energy efficiency, air pollution, water pollution and general waste problems are considered highly relevant in current and previous national development and planning documents.

Using one particular example from the West of Ireland, namely forestry, the research explored the repositioning of this particular rural resource as a potential opportunity to enhance eco-economy based regional development. Forestry has a long and complex connection with rural development in West of Ireland. Forests now cover approximately 10.7 % (745,457 ha) of the land area, up from 7 % (5,000 ha) in 1990. Still among the lowest forest cover in the EU, Ireland's annual planting was 15,815 ha between 1986 and 1999 and 11,560 ha between 1997 and 2007 with a peak of 23,710 ha in 1995 and a trend generally downwards since. Despite the current economic downturn the 2010 budget allocated funding for 7,000 ha of new planting in 2010 and the planting for 2007, 2008 and 2009 was broadly stabilised in that 6,947 ha, 6,181 ha and 6,648 ha were planted in respective years (Forest Service, 2009). While the strategic policy document 'Growing for the Future' (published in 1996) envisaged an increase in the area under forestry to 17 % by 2035, a more recent review suggested a national planting target of 20,000 ha per year be maintained to primarily secure a sustainable commercial processing sector in Ireland but also to promote the importance of the non-timber value of wood for carbon sequestration, biodiversity, amenity and recreation. In the Foresight 2025 study, the importance of the Irish forestry as a provider

of public goods into the future, particularly in the areas of carbon sequestration, biodiversity, recreation and water quality was highlighted.

Quantitative media analysis (see chapter 3.3) for the West of Ireland in relation to the broader environmental topics showed that, between 2001 and 2007 the number of articles about environmental topics stayed at a constant level. The most important issues for regional newspapers were linked to categories such as: environmental and nature protection, agriculture, forestry, tourism and energy. Other issues such as: water/soil, air/climate, landscape and waste/sewage were rarely if ever reported. An in-dept-media-analysis was also completed to explore the promotion of forestry as an alternative renewable resource and a reluctance to embrace forestry at farm level in the West of Ireland. Forty articles from a variety of regional and local newspapers in the West of Ireland from 2000 to 2008, namely, the Connacht Tribune, Western People, Sligo Champion, Sligo Weekender and the Roscommon Herald were utilised. Although a selection of articles were written and researched by recognised journalists, the majority of articles were material obtained from groups and organisations within the forestry sector (Teagasc, Coillte) promoting forestry as a viable alternative farming option. Most articles reflected the current climate, where making a living from agriculture is increasingly difficult and forestry is presented as an alternative opportunity for farmers, which provides not only social, economic and ecological returns but in terms of farming practices, it is not labour intensive; is a good investment and can free up time for farmers to work off the farm. However, despite this positivity, making a decision to plant forestry was portrayed by the media as a difficult process.

In addition to media analysis a series of **qualitative interviews** (see chapter 3.4) were carried out with key stakeholders exploring their attitudes and aspirations in relation to environmental concerns; environmental capital and regional development; conservation versus exploitation and environmental conflicts, and more specifically forestry development in the West of Ireland. Interviews carried out in relation to forestry explored the repositioning of the forestry sector within the regional development sector under influence from the interaction of global, regional and local environmental discourses, including the relative positioning of productivist forestry, conservation, and opportunities for 'eco-economy' initiatives. Eleven interviews were carried out with key actors from enterprises and business associations and sciences and research institutes. Strongly influenced by EU legislation and national policy those interviewed suggested that the general environmental situation in the West of Ireland has improved dramatically in the last decade, although the region still faces environmental challenges that require considerable attention. Pressure to deal with such environmental challenges is often globally-led with national and regional polices in place. A key issue raised at interviews was the notion that environmental policy was considered adequate if adhered to and implemented appropriately, but local authorities implementing policy appear to have modest authority and funding to initiate pioneering change. Nonetheless, the West of Ireland is dictated by national environmental policy and as such is

already orientated towards a more sustainable utilisation of environmental resources in the sense of an 'eco-economy'.

The use of the qualitative semi-structure interview approach provided valuable information on the way in which key stakeholders perceive forestry in rural Ireland and more importantly, the way such stakeholders view the potential of forestry in terms of future rural development. It is clear that there are many challenges, both cultural and economic, in bringing forestry into the mainstream of land use activity in rural Ireland. The Department of Agriculture, Fisheries and Food has overall responsibility for forestry development in Ireland and for the most part the Irish State's direct involvement in forestry planting in Ireland reflects EU policy. Since the 1980s forestry development has been enhanced in the West of Ireland by state funded schemes, which include annual premiums and grants. Many stakeholders commented that forestry is promoted by the State through the extension advisory division of Teagasc, without which there would be little or no forestry in many parts, particularly in the West of Ireland.

State involvement (through funding) in forestry was also seen as hugely significant in terms of its role in renewable energy and as a potential carbon sink. Several stakeholders suggested that forestry conservation activities and planting could result in the reduction of carbon emissions; however, this is somewhat dampened by the fact that the Irish state does not have a specific policy in terms of controlling carbon emissions, and that using forests as sinks is not recognized by the Kyoto Agreement until after 2012. Current Irish forestry policy is set out in the Strategic Plan for the development of the forestry sector in Ireland at a macro level rather than a regional level. This was criticized and regarded as outdated and failing to take into consideration issues relating to carbon emissions and renewable energy. The objectives of the 1996 Strategic Plan were largely associated with the production of timber for construction and not for renewable energy. Nonetheless, many interviewees suggested that State support for forestry into the future may very well depend on its role in reducing carbon emissions. One further interesting development in terms of the State's role was the lack of acknowledgement of the multifunctional use of forestry with the State not following through on grants for amenity forestry. Huge potential in the area of forestry for recreation and tourism is not exploited and could be an 'untapped' area of rural development potential.

The concept of forestry and forestry development has raised many debates and contentions in rural Ireland. Whatever the perception or attitude, it would appear that despite the multifunctional role that forestry now provides its increased economic potential and its central role in rural development policy, there is still a cautionary approach when it comes to farmers willing to plant their land. Stakeholders suggested that a lack of confidence, tradition and culture among farmers were the main barriers to afforestation in Ireland (particularly in the west of the country). Farmers fear the permanency of forestry and are reluctant to 'tie-up' land in forestry development for an extensive period of time even though farming in many rural parts (particularly the west region) is not financially viable. Most stakeholders commented that farmers would consider forestry development if the financial incentives were

adequate and if confidence in the premiums was maintained. Stakeholders also suggested that the current economic crisis in Ireland had a major impact on farmers dependent on part-time employment and that this may bring about a change in attitude to forestry. Land structure in the West region was also considered a barrier to afforestation as small plots of land prevent a reasonable area of land being available for planting.

Wood energy was also endorsed and although forestry premiums was the greatest incentive to planting, interviewees believed that going on market value there was huge potential for forestry in terms of a renewable energy resource. While Ireland has an excellent growing climate and suitable soil to encourage forestry in terms of economic potential, some interviewees had reservations regarding the economic potential of forestry in the west region as previous planting was carried out on unsuitable land. They felt these sites would not produce a profitable crop and consequently some stakeholders suggested that farmers needed to be encouraged to plant on good land rather than marginal land and thereby develop a stronger, more economically viable crop. It was further suggested that farmers needed to be made aware of the potential value of forestry planting and the fact that forestry may have better returns, albeit over the longer term. Most stakeholders suggested that improved awareness would materialise if farmers gained an income from thinning and in turn if local markets were readily available. Training for farmers' in forestry development was also suggested; albeit, Teagasc does offer extensive training with little apparent effect among the farming community. Stability in the State's support was also suggested as a means of overcoming barriers to afforestation.

The interview process provided an opportunity for **identification and characterisation of good practice examples** (see chapter 3.5) for the repositioning of forestry as a regional development opportunity. Eight best practice models were identified with a variety of strengths and potential such as; the Irish Afforestation Programme and Grant Scheme and Green Belt Ltd. One key best practice identified was the County Clare Wood Energy Project which typifies many of the aims and objectives of the WP3 research. This project presents a clear holistic example of the repositioning of a rural resource (forestry) and how it provides opportunities for eco-economy based regional development. The project was initiated in 2005 with funding from the Forest Service and Teagasc with a clear agenda to support the establishment of a commercially viable wood energy sector in the county of Clare, based on wood chip from local farm forest thinnings. The project aimed to develop the demand for wood energy and establish a local wood chip supply chain from farm forests and to-date the project has been very successful.

4.4 South Moravia

The concept of the present research is based on the assessment of the changed position of forestry in the South Moravia Region within the framework of regional development in the context of mutual interactions of global, regional and local influences, including the mutual position of wood-producing forestry, forest protection and nature conservation as well as the potential for activities stemming from the principle of sustainable forest management.

The methodology is based on the concept of the DERREG project (see chapter 3). The quantitative part of the research was based on monitoring the defined **statistical indicators** along the defined time series (data from years 1997, 2002 and 2007) for understanding the current developmental trends. Further indicators helping to illustrate the nature of forest management in the region included for example forest percentage in the territory, degree of naturalness of forest stands etc. Data were mainly obtained from the Czech Statistical Office, from regional analytical documents and from regional professional institutions.

The South Moravia Region has been known within the Czech Republic for its agricultural production of thermophilic plants and viticulture. Agricultural land covers 60 % of the region's area, on which arable soil represents 83 %, special agricultural crops (orchards, gardens, vineyards) 10 %, and meadows and pastures 7 %. Forests cover 28 % of the area of the region (which represents the second lowest forest percentage after the Central Bohemia Region), while other areas (built-up land and waters) total 12 %.

Statistics show that today only a small part of rural population works in agriculture and forestry. The principal employment sectors include engineering and textile industry, with the dominating service sector, giving job opportunities to nearly 60 % of the regional population. Thus the South Moravia Region has been becoming a popular place for enterprising.

There are 205,160 ha of forests in the South Moravia Region. The state has been the prevailing forest owner in the region (72 % of the total forest area, of which Lesy ČR s. p. [Forests of the Czech Republic, State Enterprise] owns 57 %, and Vojenské lesy a statky [Military Forests and Estates] 10 %). More than a tenth of forests have been in the hands of towns and villages and a comparable proportion (12.5 %) are held by private owners, their cooperatives and companies. Other entities (such as MENDEL University Brno) have in their possessions less than 3 % of all forests in the region.

The dominant economic entity has been the state enterprise Lesy České republiky [Forests of the Czech Republic] represented by its regional directorate in Brno and 7 forest administrations as basic operation units of the establishment. Forest strategy of the enterprise is sustainable forest exploitation, assuring balanced wood-producing and non-wood-producing functions of forests entrusted. Economic priority is balanced financial management, funding of forestry activities from in-house resources and independence on the state budget. Forest works related to forest exploitation and regeneration are assured by business contracts with companies dealing in forest activities. Calls for tenders looking for

contractors to carry out these activities on a multiple-year basis have been target of regular criticism on the part of unsuccessful applicants and NGOs for the alleged lack of transparency of the tenders.

According to the legislative classification, nearly two thirds of forests in the region are production forests, more than one third are special-purpose forests and 2 % are protective forests. In sum, one tenth of all these forests is part of strictly protected areas – the Podyjí National Park, the Pálava Protected Landscape Area, the Moravian Karst Protected Landscape Area, part of the White Carpathians Protected Landscape Area and two hundred small-scale protected areas- such as nature reserves and nature monuments. The Ministry of the Environment has prepared a proposal for the establishment of the Soutok [Confluence] Protected Landscape Area to protect the local exceptionally well preserved complex of floodplain forests of the Pannonia biotic province. So far the territory has been protected by two National Nature Reserves Ranšpurk and Cahnov-Soutok, and as part of the Lower Morava River Biosphere Reserve and the protective mode within the NATURA 2000 system. The decreeing of the Protected Landscape Area is opposed by mayors of the surrounding municipalities, by the Chamber of Commerce, representatives of the Lednice-Valtice Area, and the South Moravia Region. Lesy ČR, miners of the Naftové doly Hodonín, a.s., [Oil Mines in Hodonín, joint-stock company] and operators of recreational sailing on the Dyje River also protect their individual interests in this context.

The current condition of forests in the South Moravia Region is far from being optimal due to multiple factors. The most pressing problems reducing the ecological stability of the forests, their natural value including biological diversity and in effect their long-term production capability mainly originate in a considerable simplification of species composition by the introduction of spruce and pine monocultures in the past centuries and their high representation until the present. In many locations the forest condition has been largely negatively affected by overpopulated hoofed game stock and increasing recreational use. Dominant tree species include spruce, Scots pine and oak. The overall proportion of coniferous and deciduous tree species is nearly balanced, though, which is a singular positive phenomenon following out from the comparison among regions.

A two-level **analysis of regional printed media** (see chapter 3.3) was made on the basis of keywords for the years 2000 and 2007. The analyzed dailies included the regional edition of the national newspaper Mladá fronta Dnes as well as Regional dailies of the former districts in the South Moravia Region.

The quantitative media analysis for the case study area of Brno region showed that between the years 2000 and 2007, the number of articles about environmental topics increased in the last period. Common themes of regional newspapers are effects of natural disturbances - floods, storms occurring in the region. Articles also reflect the most discussed issues of our time. These are particularly engaged with „Nature protection“, „Waste/Sewage“, and „Tourism“.

Regarding the fact that many natural reserves are situated in this region, the regional newspapers provide very often information about this issue. This mainly reflects the fact that a significant area of South Moravia landscape has been afforded by protection of national and international designations reflecting their environment importance and people living in the Brno region perceive this reality. In relation to the search for alternative sources of energy, building of other wind and solar power plants is considered as suitable in the region. In recent years, there are more articles focused on this topic. The formerly often discussed issue of air pollution has been decreasing. Many newspaper articles inform also about the possibilities of waste sorting and waste treatment.

The growing demand of the urban population for spaces for relaxation and recreation in the rural landscape reflects in a frequent occurrence of these topics in newspapers. Tourism has been identified as a potential growth area for the South Moravia Region's economy, emphasising the region's distinctive natural and cultural heritage and the relative proximity of cities such as Prague and Vienna. A relatively significant part of recreation in the region mentioned in newspapers relates to wine-growing culture and living folk traditions. It can be assumed that tourism has had a more intense impact on the South Moravia Region.

Currently, the position of agriculture and forestry in relation to environmental conservation and formation is noticeably changing. While the topic of "agriculture" surprisingly recorded only little interest, issues related to "deforestation" occurred quite often in the reviewed newspaper in spite of the fact that South Moravia Region has the lowest forest coverage of all regions.

The qualitative analysis was based on the following basic strategic documents: the National Forest Programme (NFP II) and the Forest Development Programme of South Moravia Region. They are part of the national forest policy and at the same time, they implement the Forestry Strategy for the European Union. In the European context, forestry has been considered part of rural development and covers three basic groups of forest functions - economic, environmental and social – implemented on the basis of the sustainable development principle.

The South Moravia Regional Forest Development Programme (2009) considers the following priorities:

- Development of wood-producing and non-wood-producing functions of the forest,
- Preservation and development of biological diversity of forest ecosystems,
- Assurance of production and use of raw wood,
- Forest management in strictly protected areas, protection of forest ecosystems against harmful factors.

The results of detailed **interviews with the key regional players** (see chapter 3.4) in the forestry sector provided new views and ideas across the forestry specialisation spectrum and represented a major contribution to the holistic approach to regional forest management.

The interviews with the key players brought expert views of forest management and its sustainability in the South Moravia Region. According to experts, the potential of the region in the environmental area is good. However, the landscape not only in the South Moravia Region, but also virtually across the whole country faces current problems with the chaotic development of settlements (suburbanization), low utilization of brown fields and the related further fragmentation of the landscape. In addition, South Moravian foresters feel problems of excessive agricultural exploitation of land. In spite of all these problems, current trends in the field of environment can be considered rather positive. Forest experts can see a chance to improve the environment through environmental education of the wide general public. It is also important to establish new protected areas (within the NATURA 2000 system) and to improve management of the existing ones. This approach is not shared by all forestry experts, some of them believing that namely the protection of forest biotopes is sufficient thanks to high-standard and stringent forestry legislation.

Utilization of the environmental capital for regional development is generally supported. The issue of large solar power plants built on agricultural land has been widely discussed not only in South Moravia. The largest potential of the South Moravia Region in the area of sustainable energy resources is seen in the production and subsequent combustion of biomass of crops grown on agricultural land as well as of various residues after forest exploitation. The orientation of the primary sector of regional economy towards sustainability is not too much accentuated yet. Even though there are some examples of organic farms in South Moravia, they are only represented by tens of establishments. Frequently mentioned in relation to sustainable forest management is the Masaryk Forest Training Enterprise of Mendel University in Brno. New achievement of April 22nd, 2011 was the ceremonial declaration of the forests operated by Mendel University in Brno (Masaryk Forest at Křtiny) a Forest Park with the aim to strengthen the poly-functional mission of the forests, to declare the exceptional value of forest stands owned by the University (The Moravian Karst Protected Landscape Area, twenty nature reserves and NATURA 2000), and to maintain and develop these values in harmony with the principles of sustainable forestry.

The most frequently discussed theme in the context of sustainable use of natural resources has been orientation towards tourism, building of educational paths, cycling paths or wine paths. It is important to emphasize, though, that these activities mainly support soft forms of tourism. Forest experts do not consider protection of natural resources any principal obstacle to their sustainable use, even though in practice there are sometimes conflicts between nature protectionists and users of natural resources (such as the issue of floodplain forests management in the area at the confluence of the Dyje and Morava Rivers). According to experts' opinions, the general protection of natural resources should mainly be assured by

land use planners. At present, the zoning plan creation and changes not only in the South Moravia Region but across the Czech Republic are often purpose-driven, thus not guaranteeing sufficient protection of natural resources and landscape as a whole. In the opinion of some experts, land use planning is limited by insufficiently qualified human resources, legislation, lack of transparency of state administration and strong lobbying pressures. The threat to the natural potential as represented by economic activities is not simple to assess. Not even the key players agree in whether and in what ways the regional nature potentials are threatened. While some point to the negative effects of various interests of supra-national corporations, others believe that the regional nature potential is not threatened at all. The rest of the experts see the threat in excessively intensive agriculture or forestry, bringing about huge environmental burdens. Especially forest experts, speaking out of personal experience, also often mention damage to nature by undisciplined visitors, while negative effects of industries are hardly mentioned by them.

Conflicts between nature protectionists on the one hand and users of natural resources on the other do happen in the region. At present, the most widely discussed themes include the attempts at the establishment of the Soutok [Confluence] Protected Landscape Area (to protect the local floodplain forests), or the construction of biogas stations, photovoltaic power plants and transport constructions in unsuitable localities.

The South Moravia Region is most often connected with agriculture and viticulture, but some forest experts believe that forestry is another typical activity in the region. The greatest potential of regional forestry is seen above all in the appreciation of the true value of the non-wood-producing functions of the forests (ecosystem services). Forest ecosystems can only provide these services if their natural quality is preserved to an adequate extent. Therefore, certain positive changes in the species composition, structure and quality of forest stands have been introduced recently. In the context of the subsidy policy of the state, South Moravia also belongs to the regions that have begun forestation of agricultural land, sometimes even in unsuitable localities. The National Forest Strategies (the National Forest Programme) and legislation are considered by forest experts as introducing sufficiently high-standards also with a view to sustainable forest management. In addition, these documents also take into consideration the expected climatic change.

Most forests in the Czech Republic and also in the South Moravia Region are state-owned. These forest stands are managed by the state establishment Lesy České republiky [Forests of the Czech Republic]. A number of non-governmental organizations and some politicians have been criticising activities of this state enterprise for some time. Similar objections have been voiced by some of the key players in the forestry sector of South Moravia. The reason is that most of the extracted wood mass is immediately exported abroad in the form of round wood. Thus this raw material is exported without any added value coming from the region. It would be desirable to process the wood directly in the region instead. However, at present there are virtually no regional markets with forest products and very limited conversion

capacities. Great help to forestry in the region might come from the financial appraisal of forest ecosystem services, paid out for example in the form of subsidies. Experts are unable to agree on whether the situation of the regional forestry sector has improved or rather worsened in the past two decades. Mentioning the worsened situation, they mainly talk about worsened care of forest stands due to the exclusive orientation of business entities on profit-making and deteriorating prestige of people working in forestry and forest management.

In the Czech Republic there is no tradition in the regulation of activities of forest visitors and pickers (picking mushrooms, forest fruit or brushwood). Foresters maintain that certain regulation should be introduced even though there is not yet any instrument ready to be used for that purpose. At present, the forest stands are extensively damaged by visitors, especially by horse riders, motorcycles and four-wheelers. In addition to repressive instruments applied in cooperation with the Police of the Czech Republic, the visitors can also be guided by soft methods of regulating their activities. Good examples are educational paths and resting places. In addition to visitors, the forest owners must also face problems with the overpopulated game stock, for which they blame hunters´ associations. Most experts plea that the legislation calls for some change in this area, feeling that hunting rights are superimposed to the justified interests of forest owners.

In the opinion of the interviewed key actors, the role of forestry in the South Moravia Region will certainly continue to grow but will never reach the importance of agriculture, not even in the context of the expected global climatic change.

Conservationists themselves greatly differ in their views about the intervention into forest ecosystems in the strictly protected areas and no wonder that similar great differences exist in views between conservationists and forest managers. On the one hand, the more radical group of conservationists asserts the requirement of non-intervention into the spontaneous development of forests in the strictly protected areas, disregarding the fact that the subject of the protection is often a result of sensible long-term management. On the other hand, the market-driven owners and administrators of forest assets reject any limitations of their economic activities. These two approaches are mutually exclusive if applied categorically. The main obstacle to a reasonable agreement between foresters and conservationists is represented by the surviving prejudices following from the insufficient or superficial knowledge of natural forests.

The **workshop** (see chapter 3.6) organised by MZLU became a meeting place of top representatives of both groups, pointing out examples of good practice without any clashes of extreme standpoints. The state establishment Lesy ČR, s. p. strives to respect the mode stipulated for management of forests in the protected areas, even though in particular cases it is still needed to further approach mutual consensus even at a cost of certain compromise. The year 2011, announced by the UNO as the Year of Forests, is a good opportunity to remind the wide public of the role of forests in the landscape and the role of forest management. In the final session of the workshop, the participants expressed a very

inspiring conclusion saying that even though the issues of our forestry would be satisfactorily resolved sooner or later, our attention and material assistance should also be directed towards global problems of the world, above all towards the problem of deforestation in tropical countries.

In South Moravia, a lot of problems have accumulated in forestry, part of which will need to be resolved in near future, while other ones will require solution over a long-term perspective. There are not many examples of **Good Practice** (see chapter 3.5) that might become model and inspiration for potential followers. Let us mention at least two. The first concerns the Renewal of windbreaks in South Moravia, and the other the role of forests in the landscape, clarified within the framework of forest pedagogy.

Eye-catchers in the flatland of South Moravia are the lines of windbreaks, which put a final touch to the character of the local landscape. The mass planting of windbreaks started at the beginning of the 1950s. The main objective for planting the windbreaks was to reduce the risk of wind erosion and to retain within the landscape the so much needed moisture. The poor care of windbreaks is the most frequent subject to criticism. According to legislation, windbreaks or more correctly shelterbelts belong in the category of protection forests and their management is therefore in the competence of forest enterprises. Although the foresters run required records on the windbreaks including the plans of their management, the plans were seldom implemented. This crucial discrepancy remained unsolved for several tens of years and the current poor condition of windbreaks is sad evidence to the fact.

The situation considerably improved only recently thanks to the fact that the renewal of windbreaks had been ranked with activities subsidized by the European Union from the Operation Programme Environment within the caption Renewal of Landscape Structures. The first part of the extensive renewal of windbreaks was started at the end of 2008 and the second part is just being implemented in the Znojmo district. Lesy ČR s.p. (Forests of the Czech Republic, State Enterprise) has launched the reconstruction of windbreaks so that they could carry out all functions necessary for the local landscape.

Forest visitors must be provided targeted information about the purpose of sustainable forest management, about all benefits and services provided by the forest to human population, and about functioning of the forest ecosystem. All that is the purpose and task of forest pedagogy, only introduced in the Czech Republic a couple of years ago, but already undergoing successful progress, and therefore considered one of the good practices. Forest pedagogy is the simplest and most natural way for the foresters to introduce to the general public the forest environment and tasks of forest management.

4.5 Dresden region

The Dresden region is characterized by different forms of landscapes including the ecologically and scenically important areas of the Ore mountains (Erzgebirge), the Sächsische Schweiz national park and the UNESCO biosphere reserve *Upper Lausitz Heath and Pond Landscape* (Oberlausitzer Heide- und Teichlandschaft). These valuable spaces

are in close vicinity to areas that have been scarred or contaminated by mining and industry. Mining and power-generation have been central to the economy of Eastern Saxony for much of the last century. Although brown coal mining has been subject to restructuring and modernisation after German reunification (especially with regard to environmental compatibility and considerate exploitation of land after the active phase of mining), it is still linked to a number of environmental and social problems. Currently, most conflicts arise from the devastation of landscapes, interventions into water and soil balances and the removal of settlements. Simultaneously, new forms of land use can be observed: former mining areas are being reclaimed for recreation and nature conservation as well as the growing renewable energy sector.

This part of the report will explore the research findings and results from Eastern Saxony in light of the main objectives of WP3 (see chapter 1). As a starting point the report will explore key findings of a statistical overview carried out initially on the broader Dresden region (Case study area: Direktionsbezirk Dresden excluding the cities of Dresden, Hoyerswerda and Görlitz). A second part is more detailed, concentrating more specifically on the region *Upper Lusatia and Lower Silesia* (Oberlausitz-Niederschlesien, consisting of the districts Bautzen and Görlitz) directly located at the Polish and Czech border.

The Direktionsbezirk Dresden (Dresden region) is one of the three administrative regions together with Leipzig und Chemnitz which form the Free State of Saxony in Eastern Germany. With an area of 7,931 km^2, Dresden region comprises lower lying heath and pond landscapes in the north of the region, rising to mountainous terrain in the south. The region is categorized by Eurostat as 'intermediate rural', with 76.9 % of its territory falling within this classification.

The **statistical analysis** (see chapter 3.1) for the period 1997 to 2007 shows significant changes in land use in the Dresden case study area. While 53.7 % of the total area was used as agricultural land in 1997, this share declined to 48.5 % in 2007. Especially arable land (1997-2007: -6.8 %) and permanent grassland decreased (1997-2007: -2.4 %). On the other hand, forest land (1997-2007: +3.0 %) and built-up areas (1997-2007: +1.7 %) increased in the period of investigation. In the recent past also the share of water body areas increased as a result of flooding of opencast mining areas. The total number of protected areas in the Dresden case study area rose from 145 (1997) to 400 (2007). Accordingly, protected areas as a whole increased from about 287,600 hectares (1997) to about 303,200 (2007) hectares (Statistisches Landesamt des Freistaates Sachsen, 1998 and 2008).

In the period 1997 to 2007 the Dresden region was affected by significant population losses; the number of inhabitants decreased by 10.9 % to a total of 1,042,200. Changes can also be noticed concerning the regional labour market. The total number of employees decreased significantly in the period of investigation (1997-2007: -4.7 %). Especially the number of employees in 'agriculture, forestry and fishing' (1997-2007: -26.1 %) and the industrial sector (1997-2007: - 28.7 %) declined. On the contrary, the number of employees working in the

service sector increased (1997-2007: +7.8 %) (Statistisches Landesamt des Freistaates Sachsen, ibid.). Consequently, a development towards a 'service-society' is becoming obvious in the Dresden region.

Regarding the development of a rural eco-economy in Eastern Saxony special attention is paid to organic farming, rural tourism and the renewable energy sector. This is reflected by the following developments:

- Between 1997 and 2007 the share of organic farming in agricultural production of the Dresden case study area increased from 1.2 % (1997) to 3.1 % (2007). In 2007 the share of companies active in organic farming amounted to 3.4 % of all agricultural enterprises.
- Rural tourism in the Dresden region is directed for the most part to the Saxon Switzerland (Nationalpark Sächsische Schweiz) and the Zittau Mountains (Zittauer Gebirge). In recent times, the tourism sector also developed in the newly established Lausitz lake district (Lausitzer Seenland). In the whole Dresden region[4] the number of arrivals (1997-2007: +17.7 %) and nights spent (1997-2007: +8.1 %) increased significantly between 1997 and 2007. However, the duration of stays decreased from an average of 3.4 days (1997) to 3.2 days (2007). Consequently, the Dresden region is attractive especially for short-trips and weekend tourism, but not for longer stays.
- The share of renewable energies in total electricity production of Saxony[5] is constantly growing (1997: 1.05 %; 2007: 7.7 %). All in all, hydroelectric power plants, wind power plants, solar power plants, solid biomass and biogas plants increased their outputs from 312 GWh (1997) to 2,851 GWh (2007) (+ 914 %). Wind power plants produced more then 50 % of electrical energy (2007: 1,548 GWh) out of all renewable energies.

The **analysis of the regional planning documents** for the Upper Lusatia and Lower Silesia region published in the years 2002 and 2009 reveals a divergent importance of topics connected with the development of an eco-economy and the global environmental discourse (see chapter 3.2). Some important changes could be observed with regard to "organic farming", "sustainable tourism", "wind energy" and "biomass". While in 2002 the term "organic farming" implied a more traditional economic approach, it was perceived in 2009 as an integral part of the rural eco-economy. A corresponding observation could be made for "sustainable tourism". Most significant changes could be identified with regard to the topics "wind energy" and "biomass". The latter gained significantly in importance for regional planning. While the 2002 document was rather superficial in its statements about biomass, the 2009 was more precise. The observed changes concerning the topic "wind energy" have a rather content-related character: in contrast to the 2002 document that perceives wind energy rather as an expandable potential, the 2009 document conveys the impression of

[4] including the cities of Dresden, Hoyerswerda and Görlitz
[5] data for the Dresden case study area are not available

wind energy being a necessary evil. This changed perception influenced the handling of the topic within regional planning in a crucial way.

The **quantitative media analysis** (see chapter 3.3) unveiled an increasing number of articles about environmental topics in the regional daily *Sächsische Zeitung* (SZ) between the years 2000 and 2008. In 2008 the SZ published 2,289 articles about selected environmental topics, whereas in 2000 the number of articles amounted to 1,045. The focus of reporting changed; some issues gained in significance while others lost their relevance for reporting. For instance, in 2000 most articles were published about issues dealing with "nature reserves" (162) and "landscape conservation" (123). In 2008, on the other hand, most articles were published about topics dealing with "climate change" (413) and "climate protection" (301). Some issues were newly introduced, such as "energy crops" and "land consumption". Some categories are outstanding with regard to their relevance for reporting, while others seem to attract only a little interest for the SZ. The categories "air/climate", "energy" and "nature protection" are the leading topics, whereas the categories "water/soil", "waste/sewage" and "tourism" are of lower importance for reporting. Most articles (about 70 %) were published as local news. Some categories seem to be typical for local reporting, such as "water/soil", "landscape", "tourism" and "waste/sewage". Some cases (e.g. categories "air/climate", "energy", "environmental protection") indicate a rising relevance of the selected topic even on national or global level.

Additionally to the quantitative media analysis an **in-depth media analysis** (see chapter 3.3) was conducted. The following two topics seemed to be appropriate to reflect regional discourses about environmental issues and thus were chosen as main foci of interest for the in-depth—media analysis:

1. Renewable energies – completion or alternative for traditional energy sources
2. Conflicts arising from brown coal mining – the example "Altteicher Moor"

The in-depth media analysis of selected articles shows that renewable energies are not per se perceived in a positive manner. Reporting about renewable energies has a negative tendency when it is directly linked to wind energy or especially to the designation of wind farms. Other forms of renewable energies, especially solar power, are perceived rather positive. However, renewable energies with regard to their economic potentials are often compared to brown coal. Then they are presented only as additional source of energy: "*The existing 139 wind turbines in the region are producing about 175 MW electric power – about an eleventh of the power plant Boxberg*."

Brown coal mining and the utilisation of brown coal, on the other hand, is perceived as an important factor for economic development rather than a burden for the regional development. Until today, renewable energies could not be established as energy of present and future. The public authorities see the necessity to support alternative sources of power generation, but they match their opinions to the economic values of the particular branches of energy generation. Against this background it is also comprehensible that the State

Government and State authorities of Saxony and Brandenburg support brown coal mining as they have to secure the energy supply and the economic engagement of the international energy company VATTENFALL.

The regional significance of brown coal could also be illustrated within the second topic of investigation. Natural resources, regardless of their value, are moved in order to enable a further exploitation of brown coal. VATTENFALL, as the only international stakeholder and main employer in the region, exercises so much power on the regional development, that other than economic interests are of minor importance. Obviously, VATTENFALL also contributes to a large degree to the formation of opinions.

In addition to documentary and media analysis a series of **qualitative interviews** (see chapter 3.4) were carried out with altogether seventeen key actors from public authorities and state agencies, enterprises and business associations as well as NGOs and environmental associations. The first part of the interviews explored the interviewees' attitudes and aspirations in relation to the following aspects: environmental capital and regional development; conservation versus exploitation and environmental conflicts.

The majority of regional stakeholders assess the environmental situation and regional potentials as positive, especially with regard to the variety and beauty of landscapes, a large network of protected areas and a high biodiversity. Effects of mining activities are seen as the predominant environmental problem in Upper Lusatia. A further cause for environmental problems is seen in intensive farming. Despite of the mentioned problems the majority of regional actors think that the environmental situation in Eastern Saxony has improved during the last decade. Technical innovation and stricter environmental standards are mentioned as reason for environmental improvements. Different measures to improve the environmental situation in the region are suggested by the interviewees. Mostly they concern issues of energy production and agriculture, especially an intensified use of renewable energies and changes in agricultural cultivation.

Most of the regional actors think that the sustainable utilisation of environmental resources is considered and supported sufficiently on regional level. Some interviewed key actors clearly declare that the economic base of Upper Lusatia should be orientated towards a more sustainable utilisation of environmental resources. The majority notes that these changes already occurred on regional scale. However, some interviewees state that a further development towards a rural eco-economy makes sense only partially. Nearly all interviewees are of the opinion that the protection of environmental resources is not an obstacle for their sustainable utilization. They rather think that the opposite is true and new opportunities arise as a result. The majority of regional key actors assess the regional environmental potential as being endangered by too intensive ways of utilisation, especially by brown coal mining and agriculture. Local actors as well as national and international actors are responsible for causing risks for the preservation of the environmental potential in Upper Lusatia.

The majority of the interviewed key actors note that environmental issues discussed on a global level find their way into regional discussions; the topic ‘climate change’ is mentioned by nearly all of key actors. Particularly local/regional media, associations for nature conversation, citizens’ initiatives, mayors and local politicians as well as powerful individuals are named as main actors with influence on the formation of regional opinions concerning environmental and nature protection.

Especially mining activities evoke regional conflicts between environmental/nature protection and the utilization of environmental resources. However, also the utilization of renewable energies seems to cause conflicts. Most environmental conflicts are debated between local and regional actors. The interviewees mention only two global actors that are involved in environmental conflicts in Upper Lusatia: VATTENFALL in the field of brown-coal mining and international producers of seeds in the field of cultivation of genetically modified plants.

The use of the qualitative semi-structure interview approach (see chapter 3.4) provided valuable information on the way in which regional stakeholders perceive traditional energy production in Eastern Saxony and the way they view the potential of renewable energy in terms of future rural development. Even today Upper Lusatia is perceived as a traditional region for energy production by nearly all interviewed regional actors. The majority of interviewed persons see development potentials in the regional energy sector in both forms of energy production – energy from brown coal and renewable energies as well. All interviewed actors have the opinion that brown coal mining is still of high economic importance for Upper Lusatia and its development. Especially the northern parts of the region are economically dependent on the mining sector due to the fact that VATTENFALL is the biggest employer in this area. The majority of interviewees think that there is a great traditional bonding of the local population and brown coal mining in Upper Lusatia even today. Some actors think that resistance against mining activities has increased in recent times due to the fact that the open-cast mine Reichwalde was recovered in 2010. Others assess that resistance has remained constant or even has decreased during the last years. They argue that local politics, planning authorities and the mining company developed new strategies to involve the local public in planning processes. The resistance in Upper Lusatia is organized particularly by local actors, municipalities, societies and clubs. Although there are some external groups and individuals who come to the region in order to take part in the regional resistance movement, there is no wider regional alliance against brown coal mining.

Most of the interviewed persons can imagine a positive future for Upper Lusatia even without brown coal mining - but only in the long term. Today, Lusatian brown coal resources are still needed to ensure the national energy supply. Important branches for the future economic development of Upper Lusatia could be the renewable energy sector and the tourism sector. Connected with the development of the Lausitz lake district many interviewed regional actors expect that tourism will become an important regional economic sector. However, the

majority of interviewed persons think that the potentials of tourism are over-estimated and tourism will become an economic pillar only for some parts of the region.

Nearly all interviewed persons consider the development of the RES sector in Upper Lusatia as positive or very positive. They even think that Upper Lusatia should develop towards a sustainable energy region; the region has to take the chances that are offered in the field of renewable energies today. The interviewed actors are of the opinion that a change of thinking can already be observed on a political level and even in wide sections of the local population. However, they assess that the regional economic significance of renewable energies is still low at the moment. The key actors think that enough efforts have been made regarding financial support of renewable energies. The RES sector is supported mainly by the EU and national subsidies. Nearly all interviewed actors are of the opinion that there is still enough regional potential for the development of renewable energies in Upper Lusatia, but not in all fields of the RES sector. Especially wind power and the cultivation of energy crops are perceived to have the smallest potential. Regional conflicts between the production of renewable energies and public/private interests occur concerning wind energy, biogas plants, solar parks and hydro power.

The interview process provided an opportunity for **identification and characterisation of good practice examples** (see chapter 3.5) in the field of renewable energies as a regional development: A promising approach to raise the regional acceptance regarding renewable energies seem to be so-called citizens' power plants and energy cooperatives offering local citizens the possibility to take actively part in these projects, and to profit from cheaper heat supply or capital gains. There are already several positive examples existing in Upper Lusatia. One of them will be shortly described in the following:

The project Bioenergiegemeinde Radibor (bioenergy municipality Radibor) was initiated within the LEADER+ programme (2000-2006) with the aim to establish an autonomous energy supply of the municipality Radibor. The bioenergy municipality project laid ground for the installation of a network of energy production facilities, transport pipelines, and energy consumption units. The currently existing installations have already achieved a 60 % reduction of CO_2 emissions for the respective heat consumption of the village Radibor. Meanwhile more than 60 real properties are connected to the heating grid so far, and more than 40 are already supplied with heat. Currently, the project consortium is developing plans for the next step: a solar energy plant in order to make electricity supply autonomous, too.

5. Conclusions and recommendations

Sustainable development and the establishment of an eco-economy are widely regarded as a necessary principle for the resilience of Europe's rural regions. However, formulating a strategy for sustainable development involves the careful negotiation of multiple scales of environmental discourse, from the global down to the local. Global environmental issues such as climate change are instrumental in shaping the parameters of regional development, positing perceived new opportunities for rural regions in fields such as renewable energy production, but also presenting challenges for regions with a traditional economic base in activities such as mining or intensive agriculture. At the same time, regional development strategies need also to respond to local environmental concerns, such as pollution or landscape despoilment, which can either amplify or conflict with global concerns.

WP3 of the DERREG project examined how these different environmental perspectives have been negotiated in the formulation of regional development strategies across the five case study regions: Saarland region, Pomurska region, West of Ireland, South Moravia and Dresden region. In this regard, WP3 combines evidence from the analysis of policy documents and media reports, and from interviews with key actors, to discuss how strategies for sustainable rural development in each of these regions respond to different regional environmental concerns and priorities, and reflect differential responses to common global environmental issues.

One of the main WP 3 work tasks was to examine the dissemination of local and global environmental discourses through the **media** in the case study regions. Whilst residents received news and information from a range of media sources (a.o. television, radio, internet), we focused on regional newspapers as the medium most closely engaged in setting regional political agendas and as a forum in which the regional dimensions of global environmental discourses are likely to be teased out. There is considerable variation in the form and significance of the regional press between the case study regions, and consequently in the volume of articles carried (see chapter 3.3). Nonetheless, there is a clear overall trend of an increasing volume of articles on environmental issues over the last decade. The number of environment-related articles in the five local weekly newspapers covering West Region of Ireland, for example, increased from 39 in 2001 to 133 in 2008; yet, as in Pomurska and South Moravia, the majority of these articles concerned local environmental issues, with only a handful of articles about broader global themes such as climate change.

By contrast, the regional dailies in Saarland and Saxony not only published a far higher volume of articles, but also exhibited a clear shift in emphasis over the decade from more local concerns such as nature protection and landscape conservation to global issues such as climate change, climate protection, energy conservation, biodiversity and renewable energy. Interestingly, whereas most articles about climate and energy in the *Sächsische Zeitung* in 2000 were in the international or national news sections, by 2008 these issues

were primarily being reported as regional news – in part reflecting the significance of these issues to a region with a large energy industry. Yet, in the *Saarbrücker Zeitung,* the balance was still towards reporting climate change as a national or international story, with only renewable energy reported more as regional news.

Thus, whilst there is increased coverage of global environment issues in regional media, the dissemination of global environmental discourses is mediated through regional contexts. The scale and tenor of reporting of issues such as climate change, biodiversity and energy conservation reflects regional economic concerns and the structure of the regional media. In some regions, global environment issues continue to jostle for prominence with more local environmental issues such as landscape protection. These factors each affect perceptions of the environment in regions, and its incorporation into regional development strategies.

A further WP 3 work task was to examine the translation of global and local environmental discourses into **regional development strategies**, focusing in particular on a comparison of development plans published in both the early and late 2000s (see chapter 3.2), supplemented by the **views of key stakeholders** from the public, private and third sectors (see chapter 3.4). All in all, there is a universal inclusion of sustainability in the regional development strategies examined, as well as a near-consensus among the stakeholders interviewed that sustainability and economic development can be mutually accommodated, and that protecting the environment presents opportunities for the regions concerned. In framing these policies there is often acknowledgment of the context of global challenges such as climate change, but such references tend to be limited and general. In terms of developing actual policies and initiatives, local environment concerns appear to be more important drivers. There is also a trend of movement from more general statements and prescriptions concerning renewable energy and organic agriculture in the early 2000s, towards more focused policies and initiatives in later documents.

Thus, as with the mediation of global environmental discourses through a local lens in the regional media, the global discourse of sustainable development is being translated into regional policies as mediated through an assessment of local problems, opportunities and pressures. Critically, the process of mediation places regional actors at the forefront of shaping regional development strategies. Although there is reference to international agreements and national policies in several of the plans examined, few of the stakeholders interviewed identified international bodies or even national government department and agencies as key actors in shaping regional strategies. Only one stakeholder, in Ireland, for example, cited the European Commission as a key influence on regional sustainable development policy. Similarly, whilst transnational environmental campaign groups such as Friends of the Earth and Greenpeace were only mentioned as an influential actor in West of Ireland, whilst although Greenpeace has been active in protests and campaigns in Eastern Saxony it was expressly dismissed by regional stakeholders as having any influence on regional sustainable development. Instead, stakeholders in all the case study regions pointed

to local authorities and politicians, national and local conservation groups, local business and the regional media (see Fig.8).

Citizens' initiatives or local campaign groups were mentioned as influential actors in Eastern Saxony, Pomurska and West of Ireland. These include groups campaigning for environmental action, but also protests against some aspects of sustainable development. Most notably, anti-windfarm campaign groups have been effective in reshaping approaches to sustainable development in Saxony. In the 2002 regional development plan for the Dresden region, wind power was at the core of an envisaged expansion of renewable energy generation. By the 2009 revision, however, wind power was discussed in entirely negative terms, and policies for renewable energy had been broadened to encompass a far wider range of production methods.

As such, in mediating the translation of sustainable development discourse into policy, regional actors are not only localizing strategies, but may also be contesting elements of the global discourse. Whilst the majority of stakeholders interviewed spoke favourably of the incorporation of sustainability into regional development and compatibility of environmental and economic goals, there were minority dissenting but conflicting voices in Eastern Saxony and Pomurska. In Pomurska a number of stakeholders argued that regional development policy had not gone far enough in incorporating environmental concerns.

Fig.8: Interviews with regional stakeholders - actors having influence on the formation of opinions concerning environmental and nature protection

Dresden	Saarland	West Region	South Moravia	Pomurska
• local/regional media • associations for nature conversation • citizens' initiatives • mayors and local politicians • powerful individuals	• environmental NGOs (such as BUND and NABU) • local actors (such as farmers, hunters, forest wardens and associations) • State Ministry of the Environment • Saarpfalz district • politicians	• regional development groups • citizens' initiatives • local authorities • national, regional and local media sources • European Commission • industrial actors • forestry sector • environmental NGOs (such as Greenpeace or Friends of the Earth)	• environmental NGOs • Dolní Morava Biosphere Reserve • Ecological Institute Veronika • Media	• civil initiatives • local/regional clubs and societies • individuals • local/regional media • mayors/local politicians • experts/ professionals

WP3 analysed the ways in which global environmental discourses are converted into regional strategies for sustainable development. Across our five case study regions there is clearly a divergence of outcomes that points to the significance of regional differentiation and

mediation. Discourses of global environmental problems that appear to call for local action are mediated and adapted to local environment situations and concerns as they are disseminated through regional media. The media in turn influences the development of regional policies and plans in which global discourses are translated into regional strategies and objectives. Finally the implementation of regional initiatives for sustainable development involves negotiation with various local actors, for whom global concerns may feel very different and less important than pressing local economic needs. In these ways, sustainable development is a regionally differentiated outcome of the negotiated and contested reproduction of the global through local place.

General recommendations (presented at the DERREG policy seminar in Brussels):

- Regional development strategies should encompass both economic and environmental objectives, and need to reflect both global and local concerns.
- Policies for sustainable development should emphasize the sustainable use of endogenous rural resources and the development of niche products, rather than generic ideas which may not be appropriate to regional circumstances.
- Rural regions should aim to promote eco-economy activities that can tap into international markets, including the sale of high quality products and sustainable tourism that promotes a region's natural environment.
- Policies should support the development of renewable energy resources that reflect the region's natural resources and respond to environmental pressures.
- Protected area designations can help to enhance a region's international visibility and stimulate tourism, but need to be appropriately managed.

In a further working step conclusions have been drawn from topic-related research in the case study regions (see chapter 1). Empirical findings are extrapolated to produce topic-related recommendations for rural development across Europe. In this connection, attention needs to be paid to the context of the case studies and the extent to which their experiences can be considered as typical of rural regions in Europe.

Saarland region

The designation of the Bliesgau as a UNESCO biosphere reserve represents an enormous re-evaluation of the case study region. However, this designation is connected to many obligations which lead to conflicts. On the one hand there are conditions and restrictions for certain actors. On the other hand possibilities to other key personalities to come closer to their objectives concerning nature protection are offered. Thus, the biosphere's administrative body has been affirmed in its activities and encouraged to further actions in terms of sustainability. The general public does doubtlessly have great expectations of the

biosphere's administrative body, which range from educational work for the population, a faultlessly working management to successful networking and tasks of environmental education.

Furthermore there is a large potential for developing of sustainable tourism in the Bliesgau biosphere. There are many things to explore and to learn already for the locals also with regard to natural capital and sustainable rural development. The Biosphere Bliesgau Association did very important and valuable steps towards acceptance of the regional population by organising and offering workshops and tours for everybody in the region. The responsible persons take part themselves in the trainings to be able to introduce the region to local population. Here especially the training on nature and landscape guide is to emphasise. This service naturally introduces the region better to foreigners and promotes walking-tours in biosphere for people from and outside the region.

The research within the DERREG project is very important for the regional management in the biosphere because it helps to detect the deficits, on which the regional managers want to work. There is even lack of information within the region. People should be educated, especially as there is still potential for conflict in the Bliesgau biosphere. Wind energy for example acts as destruction of natural landscape in subjective perception of the landscape. It is to forecast that this topic will be on the regional agenda for the next years. There would be a contradiction, because on the one hand the population wants renewable energy, but on the other hand refuses the concrete construction of these facilities.

However the survey of the interviews with regional stakeholders reflects subjective perceptions and had to be analysed carefully because qualitative interviews with only twelve respondents were carried out. This was a qualitative study which cannot claim to be representative. Furthermore it was possible to reach the focal points of stakeholders' perception by the analysis of all subjective opinions. The survey can reflect well a tendency of environmental attitudes in Bliesgau biosphere.

For this reason and under consideration the opinion of regional stakeholders the DERREG project partner USAAR proposes to extend the analysis in a future project by the Delphi method. After the second round of interviews the findings would be meaningful. Furthermore the media response to the environmental topics in Bliesgau biosphere was assumed being larger in 2009 as in the analysed period – the year 2008, because in 2009 the Biosphere Reserve Bliesgau was designated by UNESCO. As the analysis took place in the first half of 2009 only the year 2008 was a possibility. Also on that account it is recommended to continue the research.

The results of the project should be used to indicate communication problems too. As most of the fears were unfounded, the findings of DERREG could deliver more information for everyone. If more people would be better informed there also might be fewer problems in the biosphere Bliesgau.

Recommendations deduced from topic-related results from the Saarland region:

- Regional development strategies should encompass as well information concerning environmental capital and sustainable rural development as also learning programmes for local people to popularise the importance of these topics for further development of their regions.
- Policies for sustainable development should bear and emphasise on the current studies according to the environmental capital and sustainable rural development in rural regions, which in turn should be carried out constantly.
- The eco-economy activities and measures for sustainable rural development could be deployed for tourism as they should be promoted as specific features and therefore as attractions for tourists in rural regions. Especially innovative environmental solutions can be offered as attraction for tourists outside the regions but also for locals.

Pomurska region

In general, the environmental capital represents the most important and solid sustainable development potential of Pomurska region although it will need a special care in terms of its maintenance and preservation in the future development perspective. The two topics – the environmental situation and nature protection - are not enough present within discussions on the regional level.

Recommendations deduced from topic-related results from Pomurska region:

- As the regional development authorities in Pomurska are not active enough in the topics ‘environmental situation’ and ‘nature protection’ the situation needs to be improved by actions on various levels - among the local population, within the educational system as well as in the legislation and development strategies.
- Especially the local population in Pomurska does not recognize all advantages and benefits arising from the designation of protected areas. They mostly see limitations and obstacles for their “idea” of development. Therefore, the co-operation between the local population, different civil initiatives and local/regional/national authorities has to be improved already at the beginning of the process of designating protected areas.
- Local initiatives following a bottom up approach still prove to be the best way for a successful protected area story.
- The communication and cooperation between the protected area management institutions and local people/initiatives/associations is the key for a successful approach. More than management, management plans etc. a clear vision for development of protected areas is needed.

- In the case of sustainable tourism projects (recognized as “good practices”) the after-implementation sustainability of results needs to be assured in order to avoid solely short term effects.

West of Ireland

Globalisation impacts on all countries, permeating down to the smallest rural region and the West of Ireland is no exception. Although often perceived as a challenge creating unnecessary tension, globalisation can also create innovative and exciting opportunities. How a region responds to global challenges is the key creating new opportunities. In relation to forestry in the West of Ireland the research discovered that; forests as a land use have moved rapidly from the traditional industrial timber production model to providing roles in creating ecological and amenity arenas as well as employment. However, what is clear is that forestry can (and does) play a significant role in the economy of rural areas in the West of Ireland. In recent years there has been an increasing emphasis on the repositioning of forestry as an alternative energy industry; its potential for carbon sequestration and the provision of multifunctional aspects of forestry such as forestry recreation. This is clearly acknowledged as being an important focus in terms of the discussion with the key stakeholders and encouragingly, these key forestry stakeholders showed great confidence in the role that forestry, environmentally and economically, can contribute to rural sustainability. As with all positive steps there is often a cautionary note, in this case the positivity is tempered somewhat by the fact that despite generous grants and premiums, afforestation was stagnant and, in some areas, in decline. Cognisant of this position, stakeholders reiterated the need for policy change and the continuation of consistent financial support for afforestation throughout Ireland and particularly the Western region.

In direct and indirect terms, forestry in the West of Ireland is an increasingly important part of the rural economy. Emerging from its traditional industrial timber production role to one of a multi-purpose multi-functional resource, forestry is now seen as encompassing myriad resources and functions, from wood production, carbon sinks and arenas of biodiversity to tourism, recreation and energy resources. Against a background of increasingly difficult circumstances for small to medium farmers in the West of Ireland, forestry is increasingly promoted in rural development both in terms of farm income diversification and in providing employment to contribute to broader challenges of rural viability and sustainability. What has emerged from an exploration of statistics, policy documentation, media and key stakeholder interviews is that forestry has a clear role in traditional industrial timber production and increasingly in ecological, environmental, amenity and employment arenas. It is also apparent that there is great confidence in the role that forestry can contribute to rural sustainability. For forestry to expand and thrive, however, it is also argued that there is a need for policy re-evaluation and the continuation of consistent and sustained financial support.

Recommendations deduced from topic-related results from the West of Ireland:

- The main focus for the development of forestry should be on increasing the level of afforestation among the private sector. This in turn would enhance the development of local markets for bio-energy and timber products, which would have the added advantage of promoting rural development.
- The practice of thinning needs to be promoted among growers which would provide an additional income and would support the wood pellet market and the construction industry.
- Forestry has huge tourism potential, but emphasis needs to be placed on the provision of compensation for farmers if this option was to be realised.
- School programmes and additional extension advisory promotions are necessary in order to help reposition forestry in a more positive land use context and encourage a shift in mindset from the many negative views of forestry that seem to predominate. This needs to be combined with an intensive marketing campaign on the benefits of forestry to the national economy and general population, which in turn could attract new entrants.
- Serious consideration needs to be given to State forestry policies relating to bio-energy as this was likely to be the biggest energy resource to come out of forestry by 2020.
- The promotion of producer groups to reduce management costs and increase the marketability of timber from private forests needs to be considered. Although this is already occurring it requires recognised support from state agencies and the forestry industry.
- Support should continue for the provision of the forestry road network, while also considering new infrastructure systems.
- Relevant state agencies should continue their endeavour to research the ability of forests to sequester carbon and the extent to which it can reduce Ireland's greenhouse gas emissions from agriculture and the non-emissions trading sector in general.

South Moravia

The project studied options for the regional development of rural areas in the South Moravia Region with a specific focus on forests and forestry. Although the forests cover only 28 % of the region's total area (which is below the national average of 33.4 %), their wood-producing and non-wood-producing functions represent significant natural assets. The natural value of local forests is confirmed by the fact that one tenth of the area covered by them is protected within large-scale as well as small-scale strictly protected areas, even though a higher degree of conservation regime has not been asserted so far for the exceptionally well-preserved complex of floodplain forests at the borders with Slovakia and Austria.

The largest forest owner in the country is the state represented by its establishment Lesy České republiky [Forests of the Czech Republic]. This dominant enterprise in the forest resort, in its development programmes and strategic documents, declares the principles of sustainable development of forest management. However, the actual economic activities in the forests – forest logging and regeneration, wood conversion and sales – are mostly assured by private forest companies on the basis of contracts. The methods of their selection through public tenders have been often criticised, especially by NGOs. A considerable handicap is also the fact that South Moravia lacks sufficient manufacturing capacities for timber conversion (especially of hardwoods) and thus wood is exported abroad in the raw form without any value added. This was admitted by forest experts in controlled interviews organised in the context of the present research.

The method of interview was also used for addressing representatives from managements of large-scale protected areas (the Podyjí National Park, the Pálava Protected Landscape Area), who obviously emphasize the role of the forest in the preservation of biological diversity and environmental stability of the landscape, but substantially agree with the foresters upon the overall assessment of environmental issues faced by the region. The difference between the two groups was rather found in their approach to the solution of these issues.

The final *workshop* where the key players from both parties met through their top representatives, developed into a fruitful discussion without confrontations and with a hint of potential consensus in the main problematic issues. Agreement already exists about the need of public education, which should be especially focused on the young generation. This is why a positive response is being recorded to activities such as the recently developing forest pedagogy, building of educational paths, issues of information and publicity materials, the series of educational spots with forestry themes on the commercial TV channel etc.

A new achievement was the ceremonial announcement of the forests of Mendel University in Brno (Masaryk Forest Training Forest Enterprise) the *Forest Park* – a model area with sustainable management offering to the wide general public information about the values and functions of the forest and forest-friendly recreation.

Recommendations deduced from topic-related results from South Moravia:

- The methods of contract awards to private businesses in the context of public tenders organized by the state establishment Lesy ČR [Forests of the Czech Republic] need to become more transparent and activities of forest contractors need to be systematically reviewed and supervised.
- It is necessary to abandon the one-sided resort approach (foresters versus protectionists) and to seek a consensus in the solutions of key forest management issues in valuable natural territories.

- The established forms of public education should be further developed, namely those focused on the young generation, to increase awareness about the role of forests in the landscape and about the need of proper forest management, including the awareness of global aspects, above all the deforestation in the tropic areas.

Dresden region

In the context of globalization the topic energy becomes more and more important. Fossil energy sources are limited. Consequently, the securing of a stable energy supply is of great importance. Current developments show that conflicts in regions with important deposits of fossil fuels are directly influencing the world market prices of raw materials. Countries and regions all over the world have great difficulties to avoid rising energy prices.

Even today there are still large deposits of brown coal in Upper Lusatia being sufficient for electricity generation in the next decades. For that reason, Lusatian brown coal deposits are of great interest on regional and national level.

Brown coal deposits are still exploited and used for energy generation in the Upper Lusatia. Although the mining operator VATTENFALL undertook a lot of efforts to reduce ecological impacts in the last decade, effects on the regional ecosystem are still enormously. Even today settlements are affected by mining activities, and local inhabitants have to be resettled. Of course, homeowners and municipalities are getting compensations. Nevertheless, some values such as the sense of home or neighbourhoods in villages cannot be compensated by payments. Interviews with stakeholders in Upper Lusatia showed that the regional resistance against mining activities did not increase noticeably during the last decade. There is no broad protest movement in Upper Lusatia similar to other German areas such as Gorleben in Lower Saxony (discusses as potential site for the final storage of nuclear waste in Germany). Different reasons contributed to this situation:

- People in Upper Lusatia have grown up with mining activities, and they feel traditionally attached to this industrial sector.
- During the last years VATTENFALL developed effective strategies for civic participation; affected inhabitants are informed and involved already at an early stage of planning.
- The mining sector is still the most important employer in Upper Lusatia. It is assessed as indispensable from the perspective of regional economy.

Beside the exploitation of fossil fuels the development of renewable energies is promoted in Eastern Saxony as well in order to get more independent from global trends. Meanwhile, numerous wind power plants, solar power plants and biogas plants were build in the region. Some of these plants are large-dimensioned such as the solar park at the former airfield in Rothenburg/O.L. This solar park was constructed and is operated by the Munich company *Gehrlicher Solar AG*. Almost all of such large-scale bioenergy projects are initiated and

financed by external corporate enterprises. Also the technical equipment is not produced in the region, and maintenance work is done by external service companies. Consequently, the contribution to the regional added value of these power plants is only marginal, and these plants do not generate new jobs in the region.

Regarding the regional acceptance of renewable energies the situation in Upper Lusatia is completely different compared with brown coal mining. A lot of conflicts regarding the utilization of renewable energies arose in the last years. Nearly all kinds of sustainable energy are affected by decreasing acceptance. And the realization of new renewable energy projects is getting more and more complex and time-consuming. Numerous citizens' initiatives were established trying to hinder the construction of renewable energy plants in their neighbourhood.

The following aspects contribute to a low regional acceptance of renewable energies:

- Renewable energies are relatively new in Upper Lusatia. They are perceived as threat or danger by the local population.
- At the beginning of the bioenergy boom at lot of planning mistakes were done due to missing planning principles (e.g. wind power plants and biogas plants were built nearby villages with negative effects on the quality of living).
- The effects of the bioenergy sector on the regional economy are assessed as being insignificant.

What measures will help to raise the regional acceptance regarding renewable energy sources (RES) in the long term? Especially the initiation and realization of so-called citizen's power plants and energy cooperatives can help raising the regional acceptance of bioenergy projects. Citizens get the possibility to take actively part in these projects, and they profit from cheap heat supply or capital gains. Several positive examples already exist in Eastern Saxony.

Recommendations deduced from topic-related results from the Dresden region:

- The elaboration and implementation of comprehensive regional energy concepts is crucial. These concepts should be detailed with regard to specific objectives (energy saving, development of RES and climate protection). Furthermore, they should imply information about the regional consumption of energy, saving potentials and possibilities for the implementation of RES-projects. In this context it is important to consider also aspects of rural mobility.
- Energy supply in rural areas should be organized in a decentralized way. This opens possibilities for regional and local suppliers (e.g. public utilities) to enhance their engagement in the production of heat and electricity based on the utilization of renewable sources of energy. This approach can enhance the regional value added and contribute to the economic development of the region.

- Supply with heat and electricity should be organized „close-to-the citizen“. The local population should be given the opportunity to participate directly in RES-projects and to profit from financial gains. This approach increases the acceptance of renewable energies and results in a better identification of the citizens with RES-projects.
- In general it appears to be crucial that RES-facilities are adjusted to the regional potentials (especially with regard to biomass-based projects) and also to the landscape (especially regarding wind farms and solar parks). Large-scale facilities are linked to cost efficiency, however, they mostly have negative effects on the natural balance and thus contribute to a negative perception of renewable energies among the population.

6. Development of an eco-economy in the WP3 case study areas

In the final section of the report several examples of deepening, broadening and regrounding rural economic activities from the WP3 case study areas are presented to show the development of a rural eco-economy in these regions. As already explained in chapter 2, processes of deepening, broadening and regrounding are able to recombine and more effectively utilise natural resources. They present ways in which new or combined environmental goods and services can be created and they suggest new forms of the interdependence of the economy and ecology (Kitchen and Marsden, 2009, p 289). The initiatives and projects presented in the following are some of the Good Practice Examples identified in the context of WP3 which can be seen as effective 'bottom up' responses to globalization and its impacts.

"*If sustainable rural development is to have a chance in rural Europe*" - Marsden (2006, p 211) arguments – "*we will need an [...] empirical base from which to progress the citation of interesting examples to the reconstruction of a new round of real rural and sustainable modernization"*. The WP3 Good Practice Examples can make a contribution towards this postulated empirical base. All of them demonstrate rural development activities that attempt to build upon natural resources in different and innovative ways. Moreover, the selected initiatives and projects from the WP3 regions are not isolated or unique examples. They rather need to be seen as parts of a wider process of nested web development. According to Kitchen and Marsden (2009, p 289) this type of initiatives and projects *"are related components of a socially embedded cumulative and regional process of practices and developments that are beginnings of a new rural development paradigm based upon the reconstruction of a rural eco-economy*. *They are dynamic spatially and socially clustered entities and ones that […] are assisted, at various stages by state intervention.*"

Examples for deepening rural economic activities

An example for deepening rural economic activities from the WP3 case study areas is the registered association *Bliesgau Genuß e.V.* (Bliesgau Consumption Association) in the Saarland region. It was established in 2007 to support regional marketing of goods produced within the UNESCO biosphere reserve Bliesgau. The association unites regional producers, processors, retailers, caterers, conservationists and consumers to develop joint ideas and projects which strengthen and expand regional value creation. Apart from the marketing of products firsthand (e.g. direct marketing from farms and shops, weekly markets and seasonal festivals) additional ways of marketing were created such as the "Bliesgau-Regal" (shelf in shops that offers regional products) or "Bliesgau-Kiste" (subscribed box including regional fruit and vegetables). Meanwhile, some producers also supply selected restaurants within the region.

A further example is the Slovenian project *Diši po Prekmurju* (Scent of Prekmurje). The implementation of the project started in the year 2005, and it was initially supported by the EU programme PHARE. Today, Scent of Prekmurje is a trade mark connecting the providers of culinary and other gastronomic specialties of the Prekmurje region. It unites the producers, providers and fans of quality food with the goal to improve the quality as well as to protect and promote the culinary specialties of Prekmurje. The trade mark is promoted through several annual events in various places in Slovenia. Beside these bigger events the 'Association for the Promotion and Protection of Prekmurje Specialties' organizes further promotional events together with local caterers. There are two products from the region which they already managed to standardize and protect - Prekmurje ham and Prekmurje layer pie.

Examples for broadening rural economic activities

An example for broadening rural economic activities from the WP3 case study areas is the project *Nachhaltiges Bergwiesenmanagement im Zittauer und Lausitzer Gebirge* (Sustainable management of mountain meadows in Zittau Mountains and Lausitzer Mountains) located in the German, Polish and Czech border triangle. The project, initiated in 2006, is funded by the Deutsche Bundesstiftung Umwelt (German Environment Foundation). It aims at a sustainable way of utilization and preservation of grasslands in mountain areas. To achieve this goal, it is advised to use the produced biomass also for energetic purposes. Grasslands and meadows are not only important as animal feed, but also as open country for habitat protection. Besides, grasslands contribute to a high diversity of the landscape, and thus to high attractiveness regarding tourism. Against this background, the preservation of grassland areas is an important matter that should be supported. In order to meet the aims of nature protection the management of grasslands should be based on principles of extensive land use, respectively with limitations regarding the utilization of pesticides. Today's challenge is to preserve the traditional meadow landscapes by regular and extensive forms of utilization. However, this has to be done in a profitable way. A co-operation of the district Görlitz, the University of Applied Sciences Zittau-Görlitz, the Society for Landscape Conservation Zittau Mountains and several Czech partners was established at the beginning of the project. Main consumer of the biomass is the Society for Landscape Conservation. In the future, the project should serve as reference project and provide a contribution to the future development of the region as a whole.

A further example is the Slovanian project *Mlinarska pot* (mill trail). It was initially supported by the EU-INTERREG III A Neighbourhood Programme Slovenia–Hungary-Croatia 2004-2006. The "mill trail"- project was chosen as a WP3 Good Practice due to its highly impact in sustainable tourism and overall development of Pomurska, especially on the municipalities along the river Mura. The project addresses the cultural, technical and indirectly also natural heritage of the area with the main goal to preserve these specific regional potentials and to

use them in a sustainable way. The main connecting elements along the river are several mills where traditional skills - typical for the region - are presented. In this way regional traditions in handicraft are preserved and also reactivated as a part of a sustainable regional development.

Examples for regrounding rural economic activities

An example for regrounding rural economic activities from the WP3 case study areas is the registered cooperative *Bürger-Energie Zittau-Görlitz e.G.* (Citizens' energy cooperative Zittau-Görlitz) in the Dresden region. The energy cooperative operates photovoltaic panels on public and private buildings in the County of Görlitz. As a first step of implementation, solar panels were installed on the roof of a regional credit bank in May 2010. Further photovoltaic panels were installed within just a short period of time in other villages of the county.

Main aims of the cooperative are:

- The production of climate-friendly and environmental-friendly energy.
- The development of decentralized production sites to avoid large losses of energy efficiency.
- Gaining attractive profits for the members respectively owners of the cooperative.
- The contracting of regional enterprises from handicrafts for the installation and maintenance of plants.
- Offering additional sources of income to house owners.

The registered cooperative was founded in September 2009. In June 2010 it already consisted of 48 members owning more than 300 cooperative shares. The regional credit bank is responsible for the procurement of the cooperative shares. The citizens' cooperative can be seen as a new way for the local population to get engaged in and to profit from renewable energy projects. Citizens get the possibility to become shareholders of the cooperative and thus to gain profits from the operation of renewable energy plants.

A further example is the *County Clare Wood Energy Project* (CCWEP) in Ireland. It is a Forest Service funded project whose aim is to promote the installation of wood biomass boilers fuelled by wood chip from farm forests in the county. It is managed jointly by Clare Local Development Company (the LEADER group in County Clare) and Teagasc (The Agriculture and Food Development Authority). Since the project was launched in late 2005, CCWEP has worked with a number of companies and organizations in County Clare to identify suitable sites/buildings for the installation of medium sized wood biomass boilers and has provided on-going technical support and training for boiler procurement and installation. Significant work on the establishment of a local wood chip supply chain has also been

undertaken. CCWEP's role is to provide advice and information to forest owners on how to access the wood energy market, and to help make connections with potential buyers, which are profitable for both. Although County Clare is outside the West of Ireland case study region the Teagasc Forestry Development Officer working on this project works within the Galway region. Additionally, the project is a national pilot project that may be rolled out in counties in the West Region in the near future.

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