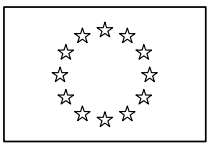

COMMISSION OF THE EUROPEAN COMMUNITIES

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COMMISSION STAFF WORKING DOCUMENT

on the links between employment policies and environment policies.

TABLE OF CONTENTS

1. INTRODUCTION

The debate about Sustainable Development has highlighted the need to understand the links between the economy, our society and the environment. This Working Document sets out the most recent evidence on one of these interfaces: the link between the employment and environment policy fields. This link has long been recognised and was reviewed at the European level in 1997, when the Commission adopted a Communication on "*Environment and employment: Building a sustainable Europe"*.[1][2] It is also reflected in both the Treaty and European Council Conclusions which recognise the need to 'mainstream' both employment and environmental concerns into all EU policy areas[3].

More precisely, the purpose of this Working Document is to:

(1) **Summarise the technical relationships** between employment policies, including social inclusion, and environment policies.

(2) **Provide examples of good practice** in exploiting synergies or minimising tensions.

(3) **Illustrate the policy relevance** of further exploring the links.

This is done because where links exist then environmental and employment policies can potentially be more than the sum of their parts. Environment policies can contribute to employment objectives. In turn, employment policies can help achieve environment policy objectives. These potential win-win solutions need to be sought and promoted whenever possible.

In particular, lessons need to be learnt for when new policies are developed. Prior analysis of future policies should fully take these potential links between employment and environment policies into account. Impact Assessment, in particular, involves identifying the likely positive and negative economic, social and environmental impacts of proposed policy actions, enabling trade-offs and synergies to be identified, and informed political judgements to be made.

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1 COM (97) 592 final

2 The key messages of this Communication were reflected in the 1998 Employment Guidelines [Council Resolution of 15.12.1997], highlighting the need to exploit fully the job creation potential in new activities, such as those in the environment sector, and to reduce the tax burden on labour, e.g. by shifting tax to energy and environmental pollutants. The Council confirmed its endorsement of the Strategy in a 1998 resolution stressing that it was "an important first step towards a better understanding of the link between environmental aspects and employment issues" [Council (Environment) Resolution on Environment and Employment, 6.10.1998].

3 Article 6 of the Treaty stipulates that "*environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities (...), in particular with a view to promoting sustainable development*", and Article 127 (2) requires that "*the objective of a high level of employment shall be taken into consideration in the formulation and implementation of Community policies and activities*".

This Working Document also complements and builds on examinations recently carried out of the other interfaces of sustainable development: that between the economy and the environment in "*The effects of environmental policy on European business and its competitiveness: a framework for analysis*"[4] and between the economy and employment in "*Employment and productivity and their contribution to economic growth*"[5].

2. POLICY CONTEXT

In 2000 the Lisbon European Council set a strategic objective for economic and social renewal of the EU by 2010. The Lisbon Strategy was complemented at Göteborg in 2001 with an environmental dimension, and a Strategy for Sustainable Development (SDS)[6] . The Lisbon Strategy is an essential component of the overarching objectives of SDS set out in the Treaty: improving welfare and living conditions in a sustainable way for present and future generations. Both the Lisbon Strategy and the SDS imply that proposals in the employment or environment fields should be taken on the grounds of their overall economic, environmental and social impacts.

The Commission has proposed a new start for the Lisbon Strategy[7] with growth and more and better jobs the main priorities acknowledging that Europe needs a more dynamic economy to fuel its wider social and environmental ambitions. It also clearly stated that making growth and jobs the immediate target goes hand in hand with promoting social or environmental objectives. It advocated that the Commission and Member States must step up their promotion of eco-innovation which can bring substantial improvements to our quality of life as well to growth and jobs, for example in areas such as sustainable resource use, climate change and energy efficiency. Furthermore, in taking stock of delivery on the SDS[8] the Commission concluded that unsustainable trends have yet to start to reverse but that "by taking a proactive approach, the EU can turn the need for environmental protection and social cohesion into opportunities for innovation, growth and jobs".

Both the European Employment Strategy and the Sixth Environment Action Programme are relevant to how the EU exploits synergies between the environment and employment pillars. The employment policy framework is aligned around three priorities that are key to improving the responsiveness of the EU economy to change: attracting and retaining people in employment; increasing the adaptability of workers and enterprises; and investing more in human capital. As such it should improve the responsiveness of the economy to change resulting from the new Environment Action Programme, which sets the strategic direction for the Commission's environmental policy over the next decade.

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4 SEC (2004) 769

5 SEC (2004) 690

6 Presidency Conclusions - Lisbon European Council - 23 and 24 March 2000, with the environmental dimension added by the Göteborg European Council, 15-16 June 2001.

7 Communication to the Spring European Council: "Working together for growth and jobs: A new start for the Lisbon Strategy", COM(2005) 24, 2.2.2005.

8 COM(2005) 37

3. ENVIRONMENTAL POLICY AND THE NUMBER OF PEOPLE IN WORK

Some claim that environmental policies are excessively costly in terms of job losses. Others argue that they, on the contrary, create more jobs. In fact, studies – mainly conducted under the OECD auspices - tend to indicate that the **net impact on employment** for the economy as a whole of environmental policies has so far been either **neutral or slightly positive**.

Two policies are in particular argued to have positive impacts: environmental tax reform and the promotion of environmental technologies. Whatever their net impacts though, often the biggest impact of environmental policy is on the composition of the labour market, rather than its size. None of this precludes, however, that short and medium term structural difficulties may occur.

3.1. Mechanisms by which environmental policy impacts on employment at firm and economy-wide level

At the firm level, to begin with, environmental policies can impact positively or negatively on employment. Environmental regulations can have positive effects at the business affected (for example, if it has to employ people to undertake environmental services), or negative effects (for example, if the regulation increases the cost of production, and reduces demand for the affected business' output).

In the short to medium run, therefore, the effect at firm level of environmental policy may be positive if it stimulates demand for environmentally friendly goods and services and so lead to a direct increase in employment. On the other hand, it may be negative if a constraint on how a business can operate is introduced, and this increases the relative price of its output and feeds into reduced demand for its products.

However, such a partial measure can be misleading in a macro-economic sense. To assess the economy-wide impact it is necessary to also examine the **upstream and downstream impacts** that are triggered elsewhere in the economy by a given policy measure. For example, while downstream sectors or consumers might have to face higher prices, upstream sectors might have to face reduced demand.

Indirect effects are substitution and income effects that relate to impacts on relative prices or wages, crowding out of investment etc. For example, increased energy taxation will induce companies to substitute other factors of production for energy, and less energy-intensive products will constitute a larger share of final goods. This will be an opportunity for firms elsewhere in the economy to meet the induced demand (in this case, for example, in less energy consuming equipment). In other words, a positive (negative) impact on a particular firm will usually be at least partially offset by a negative (positive) impact elsewhere in the economy. Of course, indirect impacts may take place in different economic sectors or in different location and may also take some time to materialise.

Even within firms, effects may be partially offset. This is indicated, for example, by an OECD study of over 4,000 manufacturing firms that showed positive economic benefits from environmental regulation:

- Environmental regulation can lead to eco-innovation and investment in more efficient production techniques. In part this relates to the fact that facilities are much more likely to invest in cleaner production processes than end-of-pipe cleanup measures to meet

environmental regulations. Overall, this provides support for the Porter Hypothesis that firms may find a new way of producing things when they face a new environmental regulation, and that this may also be financially beneficial to them in the long run[9].

- There is a link between environmental performance and financial performance. The OECD reports "evidence for the traditional economic view that the current regulatory requirements constrain an organisation's financial opportunities … However, these opportunities were recaptured if the facility took steps to reduce its impacts to the natural environment. That is, companies that improved their environmental performance experienced a greater net probability of earning positive profits between 3 – 34%."[10]

It is the recognition of the possibility of positive synergies that has led many companies to invest in Corporate Social Responsibility (CSR), defined as "companies integrating social and environmental concerns in their daily business operations and in their interaction with their stakeholders on a voluntary basis"[11]. Businesses do this because they believe it will be good for profits by allowing them to improve their brand image, relate to their workforce and to manage their resources. Reflecting this, a growing number of funds – and, in their wake, financial analysts and rating agencies- specialise in investing in socially and environmentally responsible companies that practise CSR and there are global indexes (such as the Dow Jones Sustainability Index) that specialise in tracking the financial performance of sustainability-driven companies. The Commission is committed to promoting CSR and supporting efforts to further increase its transparency.

3.2. Conclusions on the economy-wide impact of environmental policy

Determining the net (economy-wide) impact as opposed to the gross (firm level) impact is difficult. In particular, many of the economy-wide impacts are difficult to isolate from the general background of economic change – even if they are just as real as the firm level impacts. The overall impact is also shaped by three important factors:

- the relative labour intensity of the sector – that of the environmental goods and services sector is relatively high, suggesting environmental expenditure would create more jobs than expenditure it replaces elsewhere in the economy;

- the level of employment at the outset - if there is unemployment and the skills of those unemployed matches the new job requirements, then employment would rise.; and

- the level and trend in global demand for (competitive) environmental technologies or environmentally friendly goods and services that the EU produces.

Of course, other factors can have an effect. For example, if environmental policy - over the longer term - assigns clearer property rights, and thus a value to common goods that were thus far considered as free, it may extend further the perimeter of the marketed economy.

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9 "An Empirical Study of Environmental R&D: What Encourages Facilities to be Environmentally-Innovative?"

10 "Does a Facility's Environmental Performance Predict its Financial Performance?", OECD, ENV/EPOC/WPNEP(2005)11

11 COM (2001) 366 final.

A review by the OECD reported that "available evidence suggests that the net employment effect of environmental policy is slightly positive, albeit limited".[12] The OECD also notes that generally environmental expenditures account for less than 2% of GDP in European countries. Simple arithmetic means that the employment effects of small changes in low levels of spending must in themselves be small[13].

Further studies suggest caution over any conclusion on the net impact of specific environmental policies. For example, recent OECD analysis of market based instruments (and more specifically the double dividend discussed below) in the context of climate change found that the impact is "inconclusive". A number of other aspects also need to be considered:

- even if the overall conclusion was that job impacts were positive, there may still be job losses and sectoral shifts taking place i.e. transitional costs;

- some of the jobs created may be low-skill jobs, which may have lower productivity per person than the average for the economy. Note though that if this job creation puts back to work people that were previously unemployed, which in economies with high unemployment would be highly welcome, then it will contribute positively to both the overall productivity of the economy and the average productivity per head of population;

- in the long-run, employment is determined by the size of the labour force, participation rates and the long run equilibrium rate of unemployment. Environmental policy may change the composition of employment, but hardly its size.

In summary, especially if environmental policies are 'well-designed', then the net impact of environmental policy on employment is likely to be neutral or may even be slightly positive, . (The question of policy design and the dynamic impacts on the productivity of the economy are addressed in "*The effects of environmental policy on European business and its competitiveness: a framework for analysis*"[14])

In addition, environmental policy will prompt transfers of income within the economy to which the labour market will respond. This shift in the composition of employment occurs as environmental policy achieves a shift from polluting products and processes towards environmentally-friendly ones. This shift can take place within sectors or even within firms, who improve their environmental performance which may require additional investment.

3.3. Environmental tax reform and the double dividend

In spite of the above mentioned caveat as regards the likely low impact of environmental policy on the level of employment, one way in which it is argued that environmental policy can increase the economy-wide number of people in work is through environmental tax reform. At present, the share of revenue that comes from environmentally-related taxes in the EU is equivalent to 2.8% of GDP[15]. Promoters of "green" tax reforms argue that increasing

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12 Quotation taken from the OECD, 1997, "Environmental policies and Employment" and reconfirmed in OECD, 2004 "Environment and Employment" as still being valid. The OECD notes though that there are only a small number of macroeconomic studies available on this issue.

13 This should not of course be interpreted as meaning that greater environmental spending would necessarily result in greater net positive employment impact.

14 SEC (2004) 769

15 "Structures of the taxation systems in the EU", Eurostat, 2004

this figure could increase the overall number of people in work: for example, by moving away from taxing labour towards taxing pollution and using the tax revenue to lower social security contributions.

This "double dividend" effect depends, however, on fulfilling a number of conditions[16]: in particular, wage moderation and high initial taxes on labour.[17] In practice, it is difficult to provide a robust ex-post example of the double dividend increasing the net number of jobs in an economy although there are ex-ante assessments suggesting this is the case in individual Member States[18].

Efforts have been made at Community level to encourage further use of market-based instruments: for example, minimum tax rates for energy products other than mineral oil. In general, though, the speed of environmental tax reform has been slow[19]. Reasons for this include:

- the perception that taxes create an undue burden for vulnerable groups or sectors. However, this is not necessarily the case: for example, Sweden is carrying out a considerable green tax shift but it is estimated that the average net effect has been less than 1 per cent of disposable income in all social groups[20]. (Further discussion is provided in Section 6.2.)

- the perception that the fiscal 'base' is too liable to decrease as environmental policies produce their effect and so revenue streams would diminish. In practice, given the current levels of pollution and their predicted evolution, this is a rather theoretical assumption and there is all likelihood that the taxable base will exist for several decades.

3.4. Environmental technology and innovation

Another policy shift argued to be positive for employment are attempts to boost the role of environmental technologies within the EU and globally[21]. Promoting process-integrated technologies rather than end-of-pipe technologies should lead to productivity improvements and a more cost-effective environmental policy. This may lead to more jobs if it is associated with increased demand rather than increasing costs as end-of-pipe solutions often do. Environmental technology improvements should be just as beneficial for business as technology improvements in general are. This conclusion is supported by a survey on the

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16 See the "Study on the relationship between environmental/energy taxation and employment creation", University of Bath, 2000 (http://europa.eu.int/comm/environment/enveco/studies2.htm#taxation) and OECD, "Environment and employment", 2004.

17 OECD, "Environment and employment", 2004.

18 See for example Bovenberg, A. Lans, and Lawrence H. Goulder, "Optimal Environmental Taxation in the Presence of Other Taxes: General- Equilibrium Analyses," American Economic Review, 86(4), 1996, pp. 985-1000 and Goulder, Lawrence H., and Roberton C. Williams, "The Substantial Bias from Ignoring General Equilibrium Effects in Estimating Excess Burden, and a Practical Solution," Journal of Political Economy, 111(4), 2003, pp. 898-927. Also, see "Environmental Tax Reform: The European Experience", Hoerner and Bosquet, 2001 for discussion of ex-post assessments and, more recently, OECD, "Environment and employment", 2004.

19 See "Structures of the taxation systems in the EU", Eurostat, 2004 for discussion.

20 "Environmental Performance review of Sweden", OECD, 2004

21 "The Environmental Technology Action Plan Stimulating Technologies for Sustainable Development : An Environmental Technologies Action Plan for the European Union" COM(2004)38

impacts of introducing cleaner technologies, which concluded that "neutral or slightly positive quantitative effects on employment are to be expected"[22].

Doing so would be in line with the statement of the High-Level-Group Report for the Mid-term review of the Lisbon Strategy[23] that "Europe can gain a first mover advantage by focusing on resource-efficient technologies that other countries will eventually need to adopt. European companies are already world leaders in some clean products and processes and this gives them an advantage in emerging markets." Indeed, there is evidence of that as countries develop they do tackle environmental problems (the so-called Kuznetz Curve). Indeed, the market for pollution control technologies is already growing fast in China offering opportunities for technologies that have been developed in Europe.

Reflecting this, the EU's Environmental Technology Action Plan promotes not just technologies like wind turbines and solar panels but also other technologies that, when compared to other similar technologies, do the same thing - but with less environmental impact. It sets out a number of actions (e.g., increased research, technology dissemination and dedicated training efforts, as well as mechanisms to reduce market barriers for environmental technologies, such as green public procurement, the phasing out of environmentally harmful subsidies and training) that the Commission will take and some that other stakeholders, such as industry and national governments, should undertake for the plan to be successful.

3.5. Employment in the environmental goods and services sector

Whilst employment policy causes a general shift in resources towards environmentally-friendly firms and sectors, its most visible beneficiary is the environmental goods and services sector[24]. This sector accounts for 1.3% of total paid employment in the EU-15[25] (or 2 million full time equivalent jobs in total, i.e. similar in size to the aerospace or pharmaceuticals industry). These jobs are split across: pollution management of both a preventive or remediative nature, such as minimising resource materials use, reducing environmental risk or clearing up environmental damage; cleaner technologies and products (often more efficient integrated processes); and resource management, such as renewable energy and ecosystem management.

The environmental goods and services sector in the EU is dynamic. It operates a trade surplus with the rest of the world and has grown quickly. Employment in pollution management activities alone rose by around 500,000 jobs in the late 1990s or a rate of around 5 per cent per annum[26]. It seems likely that growth has continued, albeit at a slower pace, during the recent economic downturn. Within the sector though there are still examples like wind power

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22 "Environment and employment: sustainability strategies and their impact on employment", Institut für Wirtschaft und Umwelt & AK Wien (2000),

23 "Facing the Challenge", Report from the HLG chaired by Wim Kok, November 2004.

24 The standard (OECD/Eurostat) definition of this sector, sometimes called the eco-industry, is: "*all activities which produce goods and services to measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems. This includes cleaner technologies, products and services that reduce environmental risk and minimise pollution and resource use.*"

25 Ecotec "Analysis of the EU Eco-Industries, their Employment and Export Potential", 2001

26 Idem

in Germany where employment jumped between 2000 and 2001 from 60,000 to 100,000 jobs, with further increases estimated by one study as possibly up to 20% per annum[27].

There also seems to be an increasing trend towards the private sector being the source of new environmental jobs. For example, in France the public sector has historically been responsible for most job creation but in 2002 it was private enterprise that accounted for 85% of new environmental jobs[28].

In the new Member States, direct employment in the environmental goods and services sector is equivalent to around 1% of total employment. Employment in the sector is generally increasing, often driven by the environmental acquis[29].

Of course, the number of jobs linked to the environment extends further. For example, a study calculated that in Wales once jobs such as those in tourism linked to the environment are included then over 117,000 jobs can be directly attributed to the management and use of the Welsh environment. If the indirect or multiplier effects are included then the total impact of the environment in Wales is estimated to be 169,000 FTE jobs or 17% of Welsh employment[30].

3.6. Unemployment in the short run

None of this is to deny that environmental policy can cause job losses in certain sectors and regions. For example, the 2004 OECD study on Environment and Employment recognised that "*when looking at the short term and sectoral level … the effects of environmental policy on employment may be substantial*", and "*may be particularly acute for energy-intensive industries with a strong adverse impact on the environment such as heavy industries (e.g. steel, pulp and paper, aluminium)"*, as well as "*the primary industry involved in natural resource extraction and exploitation, such as forestry or mining*".

However, there seems to be little evidence of concentrated job losses (hot-spots) or of declines in employment in those industries specified by the OECD in the paragraph above as a result of environmental policy in practice. For example, studies suggest that increased regulation led to few job losses in sectors faced with tougher waste management rules[31]. Other studies also find that in practice the overall job impact is not usually significantly different from zero and may even be positive[32].

The most comprehensive study available, by the European Monitoring Centre on Change of the European Foundation for the Improvement of Living and Working Conditions (the 'Dublin Foundation'), covering three-quarters of a million job losses since 2002, found that merely 5% of jobs were lost due to delocalisation and only a fraction of these will have been due to environmental legislation. In fact, the impact of environmental costs tends to be considered relatively marginal: cost of capital, fiscal regime, wages and exchange rate fluctuations as well as closeness to market are usually much more important.

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27 "How new environmental technologies can stimulate growth", Rajeski, Policy Report, Dec 2004

28 "1999-2002: 12 ans de forte progression de la dépense de protection de l'environnement", IFEN, 2004. It is unclear to what extent this trend is simply a product of privatisation programmes.

29 Ecotec "Analysis of the EU Eco-Industries, their Employment and Export Potential", 2001

30 "Valuing Our Environment: The Economic Impact of the Environment of Wales", National Trust, 2003

31 "Employment Effects of Waste Management Policies", 2001, Risk & Policy Analysts Limited

32 See, for example, "Jobs Versus the Environment: an Industry-Level perspective" by Morgenstern R.D., W.A. Pizer and J.-S. Shih (2002, J*ournal of Environmental Economics and Management* 43, 412-436)

The fact that job losses tend to be spread out over time and the economy means that they can often be accommodated by Member States. Nonetheless, any negative impacts need to be minimised. This can be done by ensuring that environmental policy is as cost-effective as possible. Developing policy analysis (e.g., impact assessment) capabilities at national level should be a first step in that direction. National authorities and business also need to anticipate and plan for implementation of policies by taking advantage of the time between first launching a policy initiative at EU level and actual implementation.

Of course, it has to be recognised that good stewardship of the environment also safeguards jobs. For example, forest fires, land slides or floods can bring severe disruption to local economies and hence jobs. Preventative measures are likely to be less costly than remediation, and therefore to increase the overall efficiency of the economy.

Where there are risks then the social partners and social dialogue at all levels have a key role in ensuring that problems are anticipated and tackled. Participative foresight exercises can provide platforms for associating all concerned stakeholders to the definition of likely futures. Social dialogue developments also are in line with this need and the programme of the social partners seeks to make a contribution by addressing themes linked to, for instance, lifelong learning, anticipation and adaptation of change, job quality, attracting more people to the labour market, and sustainable development issues.

Key messages Chapter 3:

- Environment policy is not a job-killer overall but instead has a neutral or even mildly positive impact on the overall number of jobs.
- The ongoing shift in environmental policy away from prescriptive approaches and towards flexibility should be strengthened so as to minimise the risk for negative employment implications. Market-based instruments should play their part in this shift, and be designed so as to maximise the likelihood of realising a double dividend.
- Promotion of environmental technologies should contribute to more and better jobs as the global demand for sustainable solutions grows.
- The long term trends as regards structural change go in the direction of shifting resources from polluting to environmentally friendly sectors, which for certain sectors or regions may create difficulties over the short term, calling for measures to manage that transition.

4. THE LINKS BETWEEN ENVIRONMENTAL POLICY AND LABOUR MARKET RESTRUCTURING

As identified in Section 3, as environmental policy shifts resources from polluting products and processes towards environmentally-friendly ones it affects the composition of employment. However, there is a structural shift in the economy that is in any case ongoing towards the service sector. This shift, which is especially pronounced in the New Member States, will have environmental consequences that need to be anticipated.

4.1. The shift to a service economy

The trend decline of manufacturing's share of GDP and the consequent structural shift towards a service-orientated economy has implications for environmental policy. The EU-25 needs to create more than 22 million jobs by 2010 if it is to reach the Lisbon employment rate target of 70%. As most new jobs likely to emerge in the services sector, attention needs to be given to the environmental impacts that the shift to services may entail (land use, energy consumption etc).

One issue will be the use of Information and Communication Technology (ICT), which could lead to new environmental impacts (for example from the IT sector itself) or could be used as a means of making new service orientated jobs beneficial in economic, social and environmental terms in a knowledge-based society. New ways of working, like telework can benefit the environment via more efficient use of buildings and flexible working hours could help reduce congestion, and thereby vehicle emissions. Where such schemes have been introduced and backed up (e.g. by tackling new training needs), they tend to be perceived as leading to a higher quality of work (more autonomy, more control of one's work etc) and better possibilities to combine work/family life.[33]

The extent to which new ways of working have been introduced is, however, limited. In a survey of 800 European organisations only some 10% had introduced a consistent and comprehensive set of new forms of work organisations.[34] Thus there seems to be a case for examining obstacles to this development. In the case of telework, for example, in July 2002 the European Social Partners entered a voluntary Framework Agreement on Telework including provisions on the voluntary character of telework, the equality of rights vis-à-vis other workers with respect to employment conditions, collective rights, training, etc.

Having said this, the shift to the service economy also imposes burdens on the environment. Offices are to be heated, cooled and lightened. The energy consumption stemming from these activities depends very much on the quality of the building stock.

4.2. Environmental policy in the New Member States and restructuring

The Central and Eastern European New Member States are undergoing rapid structural change. High unemployment rates (on average 14% compared to 8% in EU-15[35]) illustrate the existing strain on labour markets. Even more than in the EU-15, in the New Member States environmental policy can therefore be expected to be a driver for structural change. Opportunities exist in such a context such as the scope to improve energy efficiency, with the NMS using on average twice as much energy for the same unit of GDP as in the EU-15. In Slovakia alone, selected energy efficiency measures could create up to 10,000 new jobs[36].

According to Commission estimates the cost of compliance with the environmental 'acquis' will amount to approximately 100 billion euros. It has been argued that some of this spending

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33 See for example "Partners at Work?" (2002), Report of the Hi-Res Project, P. Totterdill, S. Dhondt, S. Milsome, (funded by DG Research of the European Commission).

34 "New Forms of Work Organisation: The Obstacles to Wider Diffusion", Business Decisions Limited, European Commission, DG Employment, October 2002. "System" users are organisations which have introduced "a group of inter-related and internally consistent work practices and HR management policies".

35 Source: Eurostat 2004

36 "Ending wasteful energy use in Central and Eastern Europe", World Wildlife Fund, 2004

will be diverted from other possible uses and in view of the already strained labour market situations, the tensions this will lead to must be adequately addressed.

Reflecting this, the EU started to support the process of adaptation even before accession through the Instrument for Structural Policies for Pre-Accession and the Phare Programme. Between 2004 and 2006 24 billion euros in structural and cohesion funding for the New Member States is reserved in the EU budget. Apart from providing continued financial support, the EU is playing a role in improving the management of change, by helping to identify and spread best practices, supporting capacity building etc.

Key messages Chapter 4:

- The ongoing structural change towards the service economy will have environmental impacts that need to be anticipated and managed.
- The ten New Member States provide a high potential to improve the efficiency of energy us and linked to these improvements could be the creation of a considerable number of jobs.

5. ENVIRONMENTAL POLICIES AND THE QUALITY OF JOBS

The above mentioned study by AK Wien was among the first to also examine the impact on quality of work. It came to the unambiguous conclusion that "*overall, integrated environmental protection results in clear positive effects with regard to employment quality. Apart from a significant increase in skills levels, there is an improvement in physical working conditions*"[37].

However, the skills profile of nature protection, biodiversity conservation and natural hazards prevention is not well known and has to be further analysed. The main evidence currently available comes from the eco-industry sector. In addition, the quality of environmental jobs is directly related to investment in education and training for environmental protection and the management of natural resources.

5.1. Skills requirements in the eco-industry

The skills profile of the environmental goods and services sector tends to be relatively polarised. Jobs in operating integrated processes or environmental consulting tend to be relatively high-skill whilst jobs in waste collection and sorting tend to be relatively low-skill. For example, eco-consulting employs more technicians and crafts people than the economy average, while the sector as a whole is relatively biased towards helpers and labourers. Perhaps linked to this, the sector tends to be underweight in science input, suggesting that it may not be fulfilling its innovation potential[38].

The Environmental Technology Action Plan aims to promote integrated rather than end-of-pipe solutions, and so high-skill jobs at the expense of low-quality jobs. The AK Wien study

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37 "Environment and employment: sustainability strategies and their impact on employment", Institut für Wirtschaft und Umwelt & AK Wien (2000); and, OECD "Survey on environment-related employment effects in 1998", 2002

38 idem

suggests that step-wise upgrades of existing processes and machinery are often associated with in-firm training and hence with an increase in the skills of workers and the quality of their jobs.

However, some of the people who worked in the low-tech waste management jobs will not be suited automatically to any higher-tech jobs created. Attention therefore needs to be paid to continuous training in the context of the move towards integrated technologies – in line with the current focus on fostering the adaptability of both workers and companies.

5.2. Lifelong learning and training systems

Skills need upgrading for the workforce to be able to respond to the new job opportunities associated with the complex set of environmental challenges our society is confronted with such as tackling climate change, nature management etc. Appropriate training programmes will help European economies to re-deploy workers who are currently difficult-to-place. A well trained, environmentally aware workforce is also better able to develop innovative new techniques that improve resource efficiency. This requires comprehensive lifelong learning and training systems, which integrate sustainable development concerns and ensure that the right skills are supplied.

The Commission Communication on the mid-term review of the Lisbon Strategy underlines that "Europe needs more and better investments into education in training. By focusing at European and national level on skills and life-long learning it will be easier for people to move to new jobs"[39]. This is not least the case for emerging job opportunities in the eco-industry.

A number of good examples exist:

- The UK is to provide training to 70,000 construction workers on the energy efficiency of different technologies to ensure that knowledge is not confined to those who have just completed initial vocational training courses. To allow for such measures, qualified trainers are needed and this needs to be reflected in education and training curricula.

- In Spain, the Structural Funds Environmental Network has implemented environmental awareness raising modules in all training courses financed through the ESF. In this way, around 800.000 workers have benefited so far from this exercise, and it is estimated that by the end of 2006, the figure will be closer to 2.000.000 workers. In addition to these general courses, there has also been specific environmental training financed through the ESF in Spain, but also in countries as diverse as Finland or Greece.

- (In Germany, ESF programmes provide training and support on the spot initiatives (e.g. in difficult urban areas) which promote also the environmental dimension of sustainable development. In the Objective 1 areas, co-financing is provided for the "voluntary ecological year" where young people not only practice environmental action but at the same time are prepared and motivated for future employment and personal development.

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[39] COM (2005) 24, "A New Start for the Lisbon Strategy"

5.3. Health and safety of workers

There are strong links between environmental pollution and human health. One study has estimated that around 20% of the burden of disease in industrialised countries can be attributed to environmental factors, with the bulk of this affecting children and vulnerable groups.[40]A significant portion of this health impact is likely to relate to occupational exposure to pollution or contaminants.

This link goes both ways. Health and Safety legislation contributes to a safer working place through better management of hazardous chemicals and thereby to a better environment. There are also strong synergies from those environmental policies which seek to mitigate the risk for industrial accidents and natural hazards (which can lead to losses in working days and temporary lay offs in affected areas…). Furthermore, the increasing focus of environmental policy on new and more environmentally-friendly technologies is likely to have positive impacts on workplace quality in term of noise, pollution, hazardous substances and physically demanding work.

Key messages Chapter 5:

- There is a clear positive link between environmental policies and the quality of jobs.
- Substantial investment in learning and training is required to ensure that the potential for environmentally related innovations is exploited overall and that emerging eco-job opportunities (in all skills ranges) can be met.
- Policy should support the shift towards integrated environmental technologies and away from end-of-pipe solutions.
- Efforts at integrated policy development embracing simultaneously health & safety, environmental, and public health aspects should be strengthened.

6. SOCIAL INCLUSION AND PROGRESS TOWARDS A BETTER ENVIRONMENT

Whereas this working document mainly focuses on the link between employment policies and environmental policies, social inclusion is also considered due to its strong correlation with labour market inclusion, and the potential synergies with environmental policies, as explained below.

A 2003 OECD study on "Towards Sustainable Development: the Role of Social Protection" commented on the strong link between social and environmental policies: "*Relations between social and environmental factors can (...) be significant. On the one hand, well-functioning social systems may facilitate environmental progress, as unattended social problems will make societies less willing to accept the structural adjustment associated to a policy shift towards more environmentally sustainable patterns of consumption and production. Indeed, concerns about social impacts have on occasions blocked progress in the environmental dimension. On the other hand, environmental degradation may translate into higher health*

[40] "How Much Global Ill Health Is Attributable to Environmental Factors?", K.R. Smith *et al.*, Epidemiology 1999

*and other social risks for the population, which often disproportionately affect more vulnerable groups such as the elderly and children. Overcoming the resistance to reforms that these social effects may induce will be easier when social protection systems are effective in protecting against a range of contingencies: for example, where training programmes assist the re-deployment of difficult-to-place workers, and where low-income households are protected against the higher prices of necessities (e.g. water, energy) that could follow more ambitious environmental policie*s."

6.1. The link between social inclusion and environmental quality

There is a link between environmental pollution and social deprivation, with Europe's poorest communities most exposed to environmental 'bads'. One recent study[41] found that deprived communities suffer the worst air quality, are more likely to be located near industrial sites and are more exposed to the risk of flooding. In the study, people in deprived communities were exposed to 41% higher than average concentrations of NO2. Another study[42] found that half of English municipal waste incinerators are located in the poorest 10% of communities. Other studies throughout Europe confirm these findings and also suggest a link between poverty and noise pollution[43].

The evidence on access to environmental services (parks, forests etc) is limited. However, what there is tends to suggest that poorer income groups have less access to such environmental 'goods'.

At the local level, environmental policies and social policies can be especially mutually supporting because living in a poor environment does not always encourage social cohesion, whilst living in problem communities does not encourage respect for the environment. For example, a poor local environment is perceived to lead to community problems such as crime and related problems[44].

Urban renewal policies need to consider the linkages and can benefit from advancing on both fronts simultaneously. Reflecting this, there are a considerable number of bottom-up (local level) initiatives to tackle problems of persistent long term unemployment and social exclusion in a coherent way with environmental concerns. Such projects typically try to bring key local actors together (communities, public authorities, businesses etc), and are often under the umbrella of Local Agenda 21[45]. Feedback shows a strong awareness of the interrelationships between social and environmental goals, and efforts to join-up the respective policies[46].

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41 "Environmental quality and social deprivation", English and Welsh Environment Agency, 2003

42 "Incineration and Deprivation", Friends of the Earth 2004

43 "The distribution of benefits and costs of environmental policies: analysis, evidence and policy implications", OECD, 2004 provides a review of the literature from throughout the OECD member countries.

44 Report commissioned by MEP Jean Lambert on "Integrating social inclusion and environment"

45 The main tool for achieving sustainable development at the local and regional level is the Local Agenda 21 process, launched at the Rio Summit in 1992. Over 4,000 European cities and local or regional authorities participate, often under the umbrella of the European Sustainable Cities and Towns Campaign.

46 "Local Authorities Self-Assessment of Local Agenda 21", International Council for Local Environmental Initiatives 2001

A good example of such activity is the Re-use and Recycling European Union Social Enterprises (RREUSE), which is a network of national and social economy federations with activities in re-use and recycling. The member organisations of RREUSE operate in labour-intensive and low profit activity that is of little interest to the private sector but important environmentally and has brought back into the labour force around 40.000 people. Cohesion Policy also plays a part with, for example, the URBAN Community Initiative recognising environmental regeneration as a key measure for the overall regeneration of deprived areas[47].

Synergies are not limited to urban areas. Measures such as the promotion of tourism, fisheries and agricultural activities have long integrated environmental, economic and social objectives so as to ensure that rural areas remain cohesive communities. For example, the Integrated Coastal Zone Management (ICZM) programme has stimulated a broad debate among the various actors involved in the planning, management or use of European coastal zones. In the local areas that benefited from the programme, social benefits have included the creation of an enhanced feeling of community along with the safeguarding of jobs as tourism has become more sustainable and environmental pressures relieved[48]. Other examples include the use of energy saving measures to cut energy consumption and the bills of the poorest groups in society.

Related to this, it is worth noting that empowering socially disadvantaged communities to engage in participatory decision-making should improve implementation of both environmental and social inclusion policies. This is recognised by the 1998 Århus Convention which established a number of rights of citizens (or their associations) and should enable EU citizens to assume responsibility for the environment.

Of course, all of the mechanisms examined in this Working Document apply to countries not just in the EU but also to those outside. Perhaps nowhere is this clearer than in this context of social cohesion. Seventy-five percent of the world's poor live in rural communities and depend directly on natural ecosystems for their livelihood. The co-existence of poverty and environmental degradation can hamper development in many countries, creating a vicious circle. Because of this, efforts to tackle poverty and the management of the environment are best considered together.

6.2. Distributive effects of environmental policies

Promoting social inclusion can be a way to combat environmental inequality, and vice versa. However, there is always a concern that poorer households might pay a disproportionate share of the costs. In fact, environmental policies can be either socially regressive or progressive[49], and this needs to be identified in the analysis of proposed policies.

One area of particular concern occurs where it is feared that vulnerable groups will respond in a way that would be socially undesirable. For example, with water metering it could be feared

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47 COM (2002)308 "The programming of the Structural Funds 2000-06 : an initial assessment of the Urban Initiative"

48 "An assessment of the socio-economic costs and benefits of integrated coastal zone management", Firn Crichton Roberts Ltd, 2000.

49 A policy can be seen as socially regressive if poorer households bear a disproportionately high share of the net benefits or of the net costs of the policy.

that poor households will cut back water consumption to a point where their health is put at risk[50] unless such concerns are addressed through the tariff design.

However, for the most part the impacts of environmental policies are evenly distributed and so the principal concern is one of 'efficiency'[51], and not of distributional aspects. Where analysis shows undue pressure on certain groups or sectors, it is usually possible to mitigate this in the design of the tax system. However, care needs to be taken to avoid undesirable environmental effects by blunting abatement incentives[52]. Tax reductions and exemptions are also de facto subsidies from other sectors in the economy, to the detriment of their competitiveness and employment prospects.

Nevertheless, analysis may be improved by considering the impact on different groups. Some Member States now do this systematically: for example, in Sweden the Environmental Protection Agency studies the effects on women and men respectively of different environmental policy instruments.

Key messages Chapter 6:

The link between social inclusion and environmental quality needs to be better understood so that policies can take advantage of positive interactions and avoid negative interactions.

- Distributive impacts should be analysed, not only as regards impact on sectors or regions but also in terms of, for example, households with different incomes, gender differences etc as this may lead to increased efficiency and legitimacy.

- The poor generally suffer most from environmental degradation and so may benefit most from environmental policy. At the same time, however, some environmental policies may cost them a higher percentage of their income than other groups unless potentially regressive impacts are identified and tackled from the outset.

7. CONCLUSIONS

This paper has aimed to improve the understanding of the interlinkages between the environment and employment policy areas. Notably, there is no evidence that environment policy is a job-killer overall but instead it seems to have a neutral or even mildly positive impact on the overall number of jobs. This is especially true if environmental policy is well-designed and hence is cost-efficient. Some environmental policies may be particularly favourable from the point-of-view of employment policies: for example, policies to promote environmental innovation or environmental tax reform. Broadly though, the biggest impact of environmental policy is likely to be on the composition of the labour market rather than its size.

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50 Health concerns are often expressed that energy taxes could lead vulnerable groups (especially the elderly or those with young children) not to use enough heating during cold spells. Wider social concerns over access to mobility are often expressed with regards to congestion charging on roads.

51 Whether the measure delivers the best possible solution in terms of overall benefits and costs.

52 This is why, in this area, the Commission is seeking to move towards a unified tax rate for heavy trucks to create equal competitive conditions and to an indexation of this rate in line with inflation.

Environmental policy can also contribute to social cohesion objectives as often the poorest communities live in a poor environment. Policies to tackle poverty and environmental degradation together can therefore be mutually supportive. Similarly, suitable training can allow the workforce to take advantage of the opportunities inherent in managing the environment.

Overall, there are good examples of policy issues and mechanisms that can deliver 'win-wins' and mitigate negative spillovers. There is scope for decision makers to take better account of these links, notably through improved impact assessment at EU and national levels.