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TAB

Consequences of environmental protection and resource conservation for education, qualification and employment

Summary



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SUMMARY

For a long time environmental protection was under pressure as an economic cost factor and »job killer« to justify its existence. Recently, however, the thesis of a dual dividend from environmental protection has been gaining ground, according to which it is possible to achieve better environmental quality while at the same time increasing employment. In this light, environmental protection can make a significant contribution to solving current labour market problems. In response to a motion by the »Education and research« working group of the SPD parliamentary group, TAB was commissioned by the Committee for Education, Research and Technology Assessment to carry out a study on the relationship between environmental policy and employment. In the first phase of the project which the present report concludes, the aim was to establish in a preliminary study the state of research into this topic and develop a comparative overview of approaches, methodologies and results of existing studies what impact environmental policy measures and measures which conserve resources and protect the environment have on employment.

ENVIRONMENTAL POLICY AS INNOVATION POLICY

The debate on sustainability has also resulted in a lasting change in the perception of the economic importance of environmental protection, after a long period in which it was regarded as an obstacle to economic competitiveness. Promoting innovation in the form of more eco-friendly products and processes is increasingly being recognised as a core element of a policy for sustainability. Environmental policy is increasingly being regarded as a significant factor in the pace of innovation, which is seen as strategically decisive in the context of globalisation.

This puts the focus in the economic debate on how the competitive position of a country can be improved in the international markets generally and environmental markets specifically through an appropriate policy framework. The decisive elements here for creating incentives to economically desirable innovative activities by companies are seen as an appropriate mix of various instruments from a range of policy sectors (e.g. coordination of technology and environmental policy, economic incentives), networking regulators and the regulated and creating a binding environment through long-term strategic planning and defining long term environmental policy goals (for example by developing and implementing national environmental plans).



ENVIRONMENTAL PROTECTION AS AN ECONOMIC FACTOR

There can be no doubt that environmental protection and resource conservation are a significant economic factor in Germany. In 1998 sales of environmental goods and services in Germany totalled around DM 112 billion, and as the second-largest exporter in the environmental protection market Germany exported environmental protection goods to a value of just under DM 41 billion in 1997. This means that environmental technology accounted for 5% of German industrial exports. A significant number of jobs depend directly or indirectly on environmental protection. The 1994 estimate that around one million people are employed in and around environmental protection in Germany is still regarded as a realistic approximation.

One basic problem with statements about the impact on employment of environmental policy measures is that we are forced to rely on estimates. Since it is impossible to identify the share of environmental protection in GDP with statistical accuracy, we cannot determine exactly the impact of environmental policy measures in terms of creating (or destroying) jobs. Reasons include the successful implementation of integrated environmental protection. Environmental policy measures which aim at preventing negative environmental impacts altogether rather than dealing with them after the event result in an integrated approach to ecological aspects in industrial plant, production processes, products and even forms of consumption. In other words, environmental protection (as a sector, industry, activity or individual measure) can no longer be separated out from economic activities generally. The growing success of environmental protection leads, as it were, to decreasing visibility in economic statistics.

EMPLOYMENT IMPACT OF ENVIRONMENTAL PROTECTION

These and other methodological problems also affect studies of possible (future) impacts on the quality and number of jobs of various environmental policy measures which are prominent subjects of debate – e.g. ecology taxes or various climate protection measures. A lot of such studies have appeared in the last few years which were also important for the political debate about the so-called »double dividend«. The following general conclusions can be drawn from these studies regarding the effect of environmental policy on employment (although caution is required, given the existing methodological problems):

- > Most of the studies of quantitative impacts based on economic models show slight positive employment effects or a neutral impact of environmental policy.

To this extent the possible contribution of environmental protection towards solving the current labour market crisis seems relatively modest – conversely, however, achieving environmental policy goals seems to be entirely compatible with employment policy objectives.

- > Environmental technology as a whole shows economic impacts comparable with those of technological change generally. Other future technologies also create new jobs in the innovative industries while at the same time rolling back employment in other sectors. However, the question of jobs destroyed by innovations plays a far smaller role in the public debate about future technologies (e.g. I&C technologies).
- > With regard to the quality of jobs and the qualifications required environmental technology innovations have an effect in line with the general trend in the labour market. In other words, demand for qualified and highly qualified employees is increasing, while demand for employees with low qualifications is declining on balance. Integrated environmental protection in particular involves a clear trend in demand towards higher qualifications, so contributing to improving the quality of jobs (in terms of health, safety at work and income). Without alternative employment or further qualification, employees with low qualifications are likely to be the first victims of an active innovation policy in environmental protection as well, while skilled workers and particularly university graduates are more likely to benefit from environmental innovations.

MODELLING EMPLOYMENT IMPACTS

Calculating the effects on employment of environmental policy measures can only be done with the help of economic models of the current situation and future economic trends. There are a number of arguments against the instrumentalisation of such calculations as evidence of positive or negative effects on employment of environmental protection, which is standard practice in political debate: Econometric modelling does not predict economic trends and as a matter of principle cannot exactly capture the complexities of economic reality.

Econometric forecasts of the employment effects of environmental policy measures are fundamentally limited by the large number of economic factors and their interactions which have to be taken into account in the models, together with the (often contra-dictory) hypotheses about the behaviour of economic actors and economic (sub)systems depending on the theoretical approach. In econometric modelling a (theory-driven) decision inevitably has to be taken about what to include as relevant in the model and what not. In addition, there are several factors which are relevant in estimating long-term employment effects (time horizons of



up to 50 years are often used), such as trends in technological progress and the productivity of labour, and it is virtually impossible to model these realistically.

The results of econometric modelling should accordingly not be seen and used as evidence in the case for or against environmental protection, but rather treated with caution as information to assist political decision making. For environmental policy, making comparative econometric modelling can supply indications of which alternative paths or environmental policy instruments are more or less compatible with economic and employment policy goals, or which segments or industries are likely to face specific problems.

SUSTAINABLE DEVELOPMENT AND WORK

The evaluation in the preliminary study of concepts for operationalising the paradigm of sustainable development shows that although the social and economic dimensions of sustainability have now been intensively discussed, relationships between sustainable development on the one hand and work and employment on the other hand have so far been addressed only marginally at best. The discussion about a concrete sustainable concept of work is still in its infancy. However, there is a clear trend towards linking issues and concepts from the debate about the future of work that has been running since the Seventies (flexibilisation, breaking down the barriers between employment and self-employment, separating income and employment) with questions of sustainable work. While sustainability is defined primarily in ecological terms, efforts to give concrete form to sustainability will be unable to ignore the trends towards changes in the working world which are addressed in the debate about the future of work and which will be a decisive part of the general framework. It will also be necessary in future to explore the relationship between a sustainable paradigm for labour policy and current economic trends, such as the internationalisation of economic activities, the development of service economies and the emergence of the New Economy.

Something else that remains to be done is to estimate the effects on employment policy of comprehensive and integrated sustainability strategies. However, the generally far-reaching goals and complex packages of measures that would have to be investigated for their impact on the labour market would seem to push the limits of econometric models. The methodological problems (data, modelling complex interactions) which affect estimates of the effects of individual environmental policy measures really make themselves felt in this situation.

ENVIRONMENTAL PROTECTION AND VOCATIONAL TRAINING

It is clear that environmental policy requirements will result in some major changes in existing occupational structures, making necessary the integration of a wide range of new competencies and qualifications into vocational training. Besides additional technical knowledge, the craft trades for example require knowledge about project planning and coordination, together with social and communicative skills in customer support and cooperation with other occupations. We can expect that this trend will gather momentum, initiated by new technological developments, the changes in markets, as well as extensive requirements in terms of environmental protection.

The vocational training system has so far responded very flexibly to the requirements of environmental protection. Today, environmental protection is firmly established as an interdisciplinary qualification. Many specifically environmental training goals have been integrated into existing training and study courses, and further training opportunities have been created to permit a specific qualification for working in environmental protection. Initiatives which generally stem from craft chambers and chambers of industry and trade have also created a range of opportunities for specific vocational advanced training in environmental protection. Such initiatives, together with training courses and centres promoted by the Federal Institute for Vocational Training as projects or models, seem appropriate for adapting vocational training for newly-emerging qualification requirements related to environmental protection.

There is little information which can be generalised and no reliable data on how individuals with specific qualifications in environmental protection are faring in the labour market. This means that efforts to improve deliberately the potential for employment through qualification measures in environmental protection are largely dependent on plausible assumptions and trial-and-error methods. With regard to the possibilities for using basic training and advanced training in environmental protection to create employment potential for the problem group with minimal qualifications, it seems helpful to create stronger links between the environmental policy debate and those measures for qualifications for unemployed youths without vocational training which are currently under discussion in the Education Forum of the Federal Ministry of Science, Research and Technology and in the Bündnis für Arbeit («Alliance for Work, Training and Competitiveness»). So far, environmental protection as a prospective field of employment and qualification seems to have played only a minor role in these initiatives.



SUMMARY

The discussion surrounding the principle of sustainable development in vocational training has only just begun. It seems unlikely that it will be possible to specify the content of »sustainable« vocational training in terms of curricula for individual occupations. The crucial factor in rapid adjustment to new qualification requirements will probably be the ability of the vocational training system to create flexible opportunities to acquire additional and interdisciplinary qualifications, i.e. the implementation of principles which are currently shaping the debate about vocational training: flexible spreading of learning periods over the entire working life, giving modular structure to training, flexible transitions between training and advanced training.

EMPLOYMENT-ORIENTED ENVIRONMENTAL POLICY

The further evolution of an employment-oriented environmental policy will have to take place within the framework of the paradigm of sustainability, which has central importance extending beyond environmental policy. A number of questions remain to be resolved here, e.g.: How are strategies of sustainable development compatible in terms of employment policy with the general trends in economic development and the labour market? How can we identify the qualification requirements which will be relevant in future for the vocational training system in terms of sustainable development? How can the vocational training system respond to the challenges of sustainable development? It will be a matter of not sacrificing environmental policy on the altar of labour market problems, but rather taking a path which exploits available synergies and reconciles short-term employment goals with long-term sustainability goals. This – like the transformation of the paradigm into concrete goals and measures generally – is a task for society which will need cooperation between the relevant social actors.

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