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Sustainability, climate protection and economy: three areas successfully combined through ECOPROFIT

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Abstract One of the main interesting areas where it is possible to work is in the applied sciences. This includes, in a wide perspective, also the work done as a mixture of knowledge transfer and further development of research in a very pragmatic basis. As an example of this kind of work you can read here some basic information about the method ECOPROFIT, successfully applied in several countries in Europe and Asia. ECOPROFIT bases in the framework of Public–Private–Partnership (PPP) projects and it is dedicated to reach a sustainable awareness on climate protection, both at municipal administrations and at private companies. The method ECOPROFIT aims both economic and environmental aspects and also doesn't ignore the added social value of the developed climate protection measures. This enables ECOPROFIT to comply with the three dimensions of sustainable development.

Keywords Ecology · Economy · Sustainability · Motivation

1 What is ECOPROFIT?

ECOPROFIT, the “ECOLOGICAL PROJECT FOR INTEGRATED ENVIRONMENTAL TECHNOLOGY”, is a program for sustainable economic development that strengthens both local authorities and companies, helping to secure the sustainable economic development of a region (http://www.cpc.at/oeko/oe_WasIst_e.htm and www.oekoprofit.com). The basic idea of the method ECOPROFIT is a win–win-model, using integrated environmental technologies to strengthen economic efficiency and to improve the local environment at the same time. ECOPROFIT was developed by the Environment Department of the City of Graz (Austria) in 1991.

In the development of this method the Administration of the City of Graz (especially the Environmental Department), the University of Graz and some private companies have worked together, developing a method that allows to transfer to private companies in an easy way the knowledge of University and consultants about the newest environmental ideas and systems. The free economy—and especially the Small and Medium Enterprises (SMEs)—profit from a continuous formation on the new developments (i.e., on LED lighting or depuration of used water, only to mention two examples), presented in a clear and easy understandable way, without the need to invest too much of their own capacities in research and specific training. On the other way, the trained personal that have participated at the project can

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improve the exchange with the participating research institutes. A synergy starts among the several actors and leads to an increase in the awareness on climate protection in a wide basis. The staffs of the companies learn that it is possible to combine more efficiency with environmental measures and that the word “ECOPROFIT” means “profit” both in an ecological as well as in an economical way. With the savings obtained through a higher efficiency it is possible to invest in new developments or in the formation of the personal capacities. The social aspect also comes into the process, a.o. due to the fact that only with the engagement of each participant person the method can be successful.

At the moment, ECOPROFIT is applied in Austria, Germany, The Netherlands, Hungary, Slovenia, Russia, Italy and China. An evaluation of the international data is not made until now. This could be used for an international comparison of the results, for instance for the development of new research activities, in the development of new products or at the optimization of the supply chain management.

2 How to start the ECOPROFIT method in a city?

The process starts with the decision of the municipality to improve the environmental situation of the city in a sustainable way while working together with the local companies. Local enterprises are consequently enabled to cut their costs through investments into operational environmental protection and to increase their eco-efficiency. The benefits in these aspects are also benefits for the city, due to less emissions and sustainable development of the enterprises (including the protection of the employees' occupation). Therefore ECOPROFIT contains an important social component. The economic, ecological and social value of ECOPROFIT perfectly complies with the same three dimensions of sustainable development.

An important factor in the success of ECOPROFIT is the special way local authorities, enterprises and consultants work together through common training programs and networking. This networking happens not only among the participating companies but also with the representatives of the city. This strong cooperation enables an effective flow of information



Fig. 1 The ECOPROFIT label

and considerable synergies (http://www.cpc.at/oeo/oe_WasIst_e.htm and www.oekoprofit.com).

ECOPROFIT is an international registered and copyrighted trademark (Fig.1). Trained project managers and consultants are allowed to use the trademark and the associated program through a license agreement (http://www.cpc.at/oeo/oe_WasIst_e.htm and www.oekoprofit.com).

3 How does ECOPROFIT works?

The ECOPROFIT idea is based on the introduction of environmental modules for more operational environmental protection and more eco-efficiency (Booklet OEKOPROFIT 2005/2006). The enterprises start the implementation of the ECOPROFIT method with the participation at the ECOPROFIT Basic Program. Due to his modular configuration, the different departments of the company have the possibility to get involved in the development of the method inside of the enterprise. Through the creation of an ECOPROFIT-Team in the participating company, it is aimed that all the areas of the organization will be involved in the development of the ECOPROFIT measures. On the one hand this ensures that all the important aspects of the company's work will take into account. On the other hand the ECOPROFIT-Team members will operate as disseminators and inform all employees about the project. This also enables the team to collect the ideas and let the employees take part in the discussions inside of the enterprise.

A series of thematic workshops are held by ECOPROFIT consultants and local authority representatives along a year. Employees of the participating companies are trained on various aspects of integrated environmental protection. The main themes

are: energy, water, material flow management, production- and process-analysis, waste-management, environmental controlling and environment-related legislation. The several subjects are demonstrated and compiled through practical manuals and worksheets (http://www.cpc.at/oeko/oe_WasIst_e.htm and www.oekoprofit.com).

Parallel to the workshops the consultants visit the enterprises. The participating companies are analysed on potential savings through state-of-the-art methods and an individual implementations program is developed conjointly with the ECOPROFIT-Teams on-site. The implemented measures support an increase of the eco-efficiency of the company. Through the combination of workshops and individual consultation the acquired know-how remains within the company (http://www.cpc.at/oeko/oe_WasIst_e.htm and www.oekoprofit.com).

4 Aims of the method ECOPROFIT

Effectiveness and efficiency are the main central themes of this method. It checks the use of resources, identifying possibilities to optimize their use and efficiency—especially to reduce the energy and water consumption. Other aspects of sustainability are also integrated in this method: reduction of toxic components in their application or in the production, green purchase, compliance with environmental laws and regulations, and stimulation of the participation of the company's staff in the process. Therefore all three aspects of sustainability (environment, economy and society) are included and geared among each other.

The successful implementation of the measures is evaluated and reviewed by a qualified independent commission in situ (http://www.cpc.at/oeko/oe_WasIst_e.htm and www.oekoprofit.com). The commission consists of the contracting authority and representatives from economy and science. After the positive evaluation of the company through the commission, the certification of the 'ECOPROFIT companies' signifies the successful conclusion of the project. The award is delivered by representatives of the city authority and from politics, i.e., the Minister of Environment in the case of North Rhine-Westphalia, Germany. Afterwards, the enterprises have the possibility to strengthen their environmental activities and prepare themselves for a certification under the

international norms EU Eco-Management and Audit Scheme (EMAS) or the Environmental Management System DIN EN ISO 14001 (Booklet OEKOPROFIT 2005/2006). ECOPROFIT prepares for the first steps that should be done to organize an environmental management system or to integrate environmental aspects into existing quality management.

At the end of the ECOPROFIT Basic Program a project's documentation is published, including the main savings in energy and water as well as the reduction of waste formation and of costs (Booklet OEKOPROFIT 2005/2006, 2003/2004, 2007/2008; <http://www.wageningen.nl/content.jsp?objectid=46690>).

5 How the sustainability comes in the ECOPROFIT Basic Program?

The sustainability of the process is guaranteed through the ECOPROFIT-Club Program. This ensures the continuous development and implementation of new measures in the participating companies and promote forward co-operation between companies, consultants and authorities. Workshops, events and consultations will be tailored to the individual requirements of the enterprises (http://www.cpc.at/oeko/oe_WasIst_e.htm and www.oekoprofit.com).

A company that continues improving their environmental and economic framework can be re-examined and therefore re-certificated with the new enterprises that have finalized the next Basic Program.

6 Sustainability in the ECOPROFIT cities—first conclusions

The experience of the Programs carried out in Germany (OEKOPROFIT Deutschland 1998–2008; MUNLV NRW 2005; OEKOPROFIT MUNLV NRW 2006; <http://www.oekoprofit-nrw.de/>) shown that the main number of certified companies changes their relationship to the environmental aspects inside their organizations, developing a strong interest for environmental aspects and increasing the commitment of their employees in the development of new ideas in this area.

The main aims reached are:

- A change in the awareness for more environmental sustainability at the participating companies, at

all levels, from each individual until the organizational structures.

- The recognition of the chances offered by the know-how transfer during and after the Basic Program, including image advantages for the participant companies.
- The consideration of concrete sustainable and environmental aspects at the organization of new activities.
- The consideration at the purchase of new objects and infrastructures on their ecologically friendly maintenance.
- The maintenance of the local network beyond the ECOPROFIT-related contacts, not only for the exchange of services but also to get support from the ECOPROFIT companies to develop municipal actions to furthermore improve the environmental situation of the city (see i.e. www.klimaschutz-mh.de).
- The development of new structures at the municipality level for more interdisciplinary work.

Therefore, ECOPROFIT is a reliable project for more climate protection. It is a licensed method and its aim is not to develop concrete solutions for a concrete kind of company or branch.

Nevertheless, there is a plurality of data from the successfully finished projects that could be evaluated for research purposes. These project data are coming from different branches, company sizes and enterprise cultures, from the experiences of both finished Basic Programs and running ECOPROFIT-Clubs. The evaluation of these data could offer new and concrete climate protection activities—i.e., in terms of development of new methods for sustainable enterprise for specific branches—or to support the development of sustainability at the companies through the dissemination of Best-Practice cases.

It stills a challenge to help companies and academia to interact more among each others. This gap is worth to be closed as soon as possible, especially in the case of small and medium-sized enterprises (SME's). They have normally less monetary and personal capacities to start medium to big projects. The companies could give an added value to the knowledge of first developments at the research institutes and universities with the experience gained through development of innovative ideas and technologies. Thereby, another challenge is to get a common working philosophy that helps

research and fits the expectation of the enterprises, more influenced by time and budget constraints.

Another challenge that is still open is to get more official acknowledgement for the ECOPROFIT-Certificate. It should become easier to get official support for SME's that after the Basic Program still re-examining and getting actualized certificates as ECOPROFIT-Company, even if they do not strength their environmental management through EMAS or ISO 14001. A study of the German Ministry of Environment (Umweltpolitik 2005) presents the comparison among the existing environmental management systems in Germany. In this study a comparison among EMAS, ISO 14.001 and ECOPROFIT shows that the implementation grade of climate protection measures in the frame of ECOPROFIT projects is very high. The interviewed companies explained that the high investments (not only economical but also in working time) realized to implement the ECOPROFIT method is directly related to high benefits, some of them clearly of economic nature (see study Figures 10, 12, 15 and 16). Compared to ISO 14.001 and EMAS, ECOPROFIT is a low level introduction in the environmental management systems (see study Tables 1, 6 and 7). Therefore, the application of ISO 14.001 or EMAS can facilitate through a start in the environmental management systems using ECOPROFIT. Nevertheless, some companies applying ISO 14.001 receive also new ideas through their participation in ECOPROFIT projects, both from the input of the individual consultation and due to the networking activities. These networking activities at local and regional level are one of the main strengths of the ECOPROFIT method that supports synergies among the participants in the process.

7 ECOPROFIT: a tool for young researchers to bridge SMEs and research institutes

ECOPROFIT has proved to be a very good tool, not only in aspects like saving resources but also for the social and human resources areas. The sustainability of this process into the participating companies is closely related to the engagement of concrete individuals at the company, both employees and management staff. They keep the ideas obtained during

the participation in the Basis Program alive and develop new ones, even years after completion of the project and also in the cases where no more re-examinations are done. This work is often also a platform for the employees to get more interesting tasks and to actively participate at the development of the enterprise where they are working.

The increase of contact among SMEs and Universities offer also a possibility to increase the training of students at the companies and to develop research even if the company has no research laboratories.

The possibility as former researcher to work (since 2003) with such a method as ECOPROFIT means for me as consultant have a lot of profit. It is a very good opportunity to enhance the contact among SMEs and research institutions, because the “language” of both is known. It is also a good way to learn about new developments on environmental techniques. Since I worked with this method I have assessed more than 50 companies (most of them SMEs), only in the framework of these projects. They are from different branches as hospitals and metal producers, banks and theatre/cultural institutions. This has opened my mind and allowed me to transfer ideas and technology among the enterprises. I thank hereby the Marie Curie Fellows Association (MCFA), which helps me to still in contact with research institutions.

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