

Experiences during capacity building for Recycling of Industrial Waste and Building Rubble for the Construction Industry in Slovenia

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Waste and its value as a resource are an issue which has been recently addressed intensively in the EU. This is reflected both in the environmental strategies for future years and in the goals set in the waste directive 2008/98/EC for waste material streams, including construction and demolition wastes, subsequently referred to as C&D waste. C&D waste is recognized the most voluminous waste stream in most EU countries, representing on average roughly between 25-30 % of the total quantity of waste produced annually. This waste has a high potential to be transformed into excellent raw materials for construction and has already been identified as waste which could greatly benefit from the introduction of End-of-Waste criteria, also launched by waste directive 2008/98/EC. Similarly certain inert industrial waste streams, currently being landfilled, display properties which make them promising raw materials for construction purposes. While some EU members already exploit both material sources, others do not, though knowledge and good practice exist concerning waste usage as raw materials for construction purposes. As Slovenia is one of the countries, where this usage needs to be promoted to professionals and also the general public in order to decrease the need to landfill and to steer common business practice towards the 2020 waste directive goal of 70% re-use, recycling and other material recovery of non-hazardous construction and demolition waste, by weight.

Slovenian National Civil and Building Engineering Institute (ZAG) is a lead partner of the project ReBirth (www.re-birth.eu). Aim of the project is disseminating best practice through practical demonstrations of existing technical possibilities, information on successful administrative measures and tools, such as green public procurement, environmental taxes and charges from other EU countries, through channels of communication open to professionals, state and local authorities and the general public, stimulating the necessary trends towards an increase of recycled industrial waste and building rubble and creating awareness of the beneficial use of recycled industrial waste and building rubble in the construction industry. To this date, more than 350 stakeholders (public administrators, construction workers, architects) participated in practical workshops and demonstration events. It was agreed among stakeholders that:

- Construction and demolition, together with industrial wastes are excellent substitutes for natural materials which are used in construction and can be even advantageous in comparison with natural materials.
- Waste materials are lost resources which burden the landscape through disposal either at legal landfills or at illegal dump sites, leading to adverse effects on biodiversity and landscape deterioration.
- Natural resources need to be conserved. Fresh materials are being used unsustainably, leaving dents and scars in the natural landscape, and disrupting biodiversity.
- The technical procedures used to process C&D wastes and industrial non-hazardous waste are well established and have been verified practically, whereas the legal requirements for waste used as recycled material for construction products need to become more easily to understand, more comprehensive and more compatible.

- Successful examples of market instruments, such as green public procurement, taxes and charges supporting material sustainability, exist and can be substantiated through life cycle assessment.
- The requalification of waste to raw materials is an opportunity for the development and growth of new environmental goods and services. These messages will be passed to target audiences through various activities promoting increased application of the identified waste streams as sustainable construction materials. The target audiences are construction and demolition operators, professionals working in waste recycling and industrial facilities, local and public authorities, state, specialized, regional and local media, secondary schools, universities and the general public. Although the goals are common, each target audience requires a different set of information in order to contribute to shifting society to a more sustainable future.

Aim of the full paper is to present current state of the industrial and construction waste before the project and methodology and results when the project started with the activities. Implementing new approaches can trigger resistance towards change and experience during the project implementation on the national level are most valuable for knowledge sharing between countries and conference participants for easier implementation in other countries.