



WASCON 2015

SANTANDER, SPAIN

IMPROVED LEGISLATION, INFORMATION DISSEMINATION AND ADEQUATE EDUCATIONAL MATERIALS AS PREREQUISITES OF ATTITUDE CHANGE REQUIRED FOR IMPROVED RESOURCE EFFICIENCY PERFORMANCE

LIFE12 ENV/FI/000592 UPACMIC

RAMBOLL

Marjo Ronkainen

Tarja Niemelin

Kata Kreft-Burman

LIFE12 ENV/FI/000592 UPACMIC IN A NUTSHELL

UTILIZATION OF BY-PRODUCTS AND ALTERNATIVE CONSTRUCTION MATERIALS IN NEW MINE CONSTRUCTION

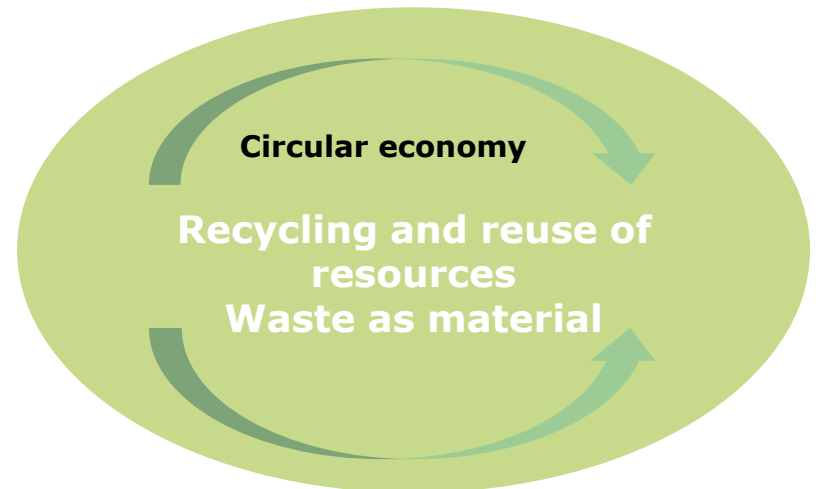
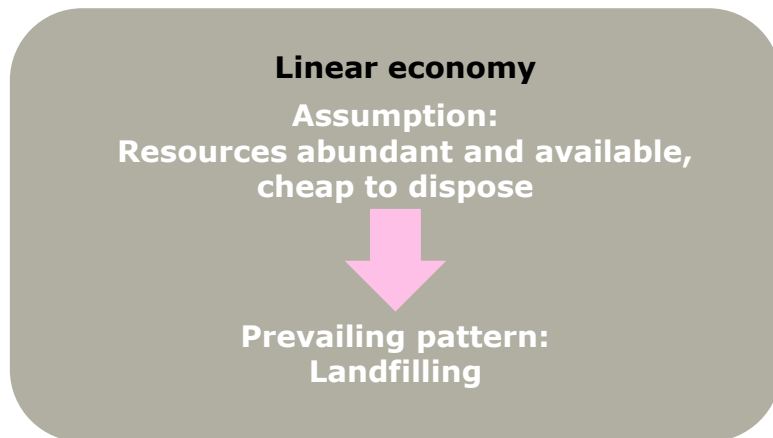
- start – July 2012; end – August 2018
- co-ordinated by Ramboll Finland
- other partners: Belvedere Mining, Ekokem, Suomen Maastorakentajat
- area: secondary materials in mining sector





BASELINE STUDY RESULTS

- Based on desk research and focus group discussions carried out during the duration of the project
- Focus on poor quality soils, tailings, industrial by-products
- Continuous economic growth results in increased demand for finite resources bearing also negative impact on the environment
- Europe's competitiveness partially depends on its success in making better use of resources
- Challenge: change of a linear model into more circular economic patterns



EXAMPLES OF HINDERING FACTORS / OPINIONS FROM FINLAND AND ESTONIA

- Psychological barrier when waste as potential material is considered as an option
- In spite of the EU recycling and material efficiency targets legislation does not directly support the use of secondary materials
- Environmental permit process duration
- Differences in interpretation among environmental permit authorities
- Lack of confidence and capacity among the decision makers, planners, designers and constructors
- Variations in quality of secondary materials

- Lack of sufficient data on durability of the secondary materials' solutions (long-term performance data)
- Difficulties in synchronising secondary materials' supply and demand (Logistic chain)
- Lack of dimensioning tools that take into consideration secondary materials
- Lack/ or not sufficient instructions, manuals, guidelines concerning secondary materials use in construction
- Lack of educational materials on secondary materials
- Production of e-learning tools is expensive
- LCA/LCC as supportive tools –
 - EU standard not very specific – space for freedom of interpretation
 - Time consuming and pricy
 - LCC – for longer than 20 years span too much uncertainty in financial data

STAKEHOLDERS' SUGGESTIONS: LEGISLATION AND TECHNICAL ISSUES

- Development of national legislation that enables the use of secondary materials as alternatives to virgin materials
- Some EU countries more advanced in the process of developing legal acts and using wastes as construction materials (e.g. Netherlands, UK: national end-of-waste quality protocols) – there is a need to actively take this experience and practice on-board
- Harmonization of technical standards
- Take measures to provide constant quality of secondary materials
- Secondary materials application methodologies should be developed as workable, straightforward and efficient solutions
- The application of secondary materials should be made economically competitive in comparison to traditional solutions

ATTITUDE, KNOWLEDGE AND AWARENESS

- There is a need for reliable records and reports on the application of secondary materials in construction projects – as reference data in permitting process and knowledge and experience sharing
- Demonstration projects should include follow-up activities providing information on the long-term technical and environmental performance of structures constructed with secondary materials
- Collaboration between producer and end-user should be intensified
- More research and development on secondary materials utilisation options
- Creation of guidance and incorporation of new guidance into existing constructions guidance and instruction documents

EDUCATION

- Education and information dissemination play an important role in the process attitude change
- Early started education that promotes material efficiency would have a positive impact on the attitude and awareness of the stakeholders involved and the whole society (waste utilised as materials seen not as dumping but reuse)
- Technical universities need good quality and reliable educational material – international project?

PLEASE ANSWER OUR PROJECT QUESTIONNAIRE ON AWARENESS AND ATTITUDE ISSUES

- <https://www.webpolsurveys.com/Answer/SurveyParticipation.aspx?SDID=Fin795344&SID=c042636e-bc74-4b30-90f0-428e235747a8&dy=743007863>

THANK YOU



**WITH THE CONTRIBUTION OF THE LIFE FINANCIAL
INSTRUMENT OF THE EUROPEAN UNION
LIFE+2012 DEMONSTRATION PROJECT**

**IF YOU HAVE ANY QUESTIONS PLEASE CONTACT
KATA.KREFT-BURMAN@RAMBOLL.FI**