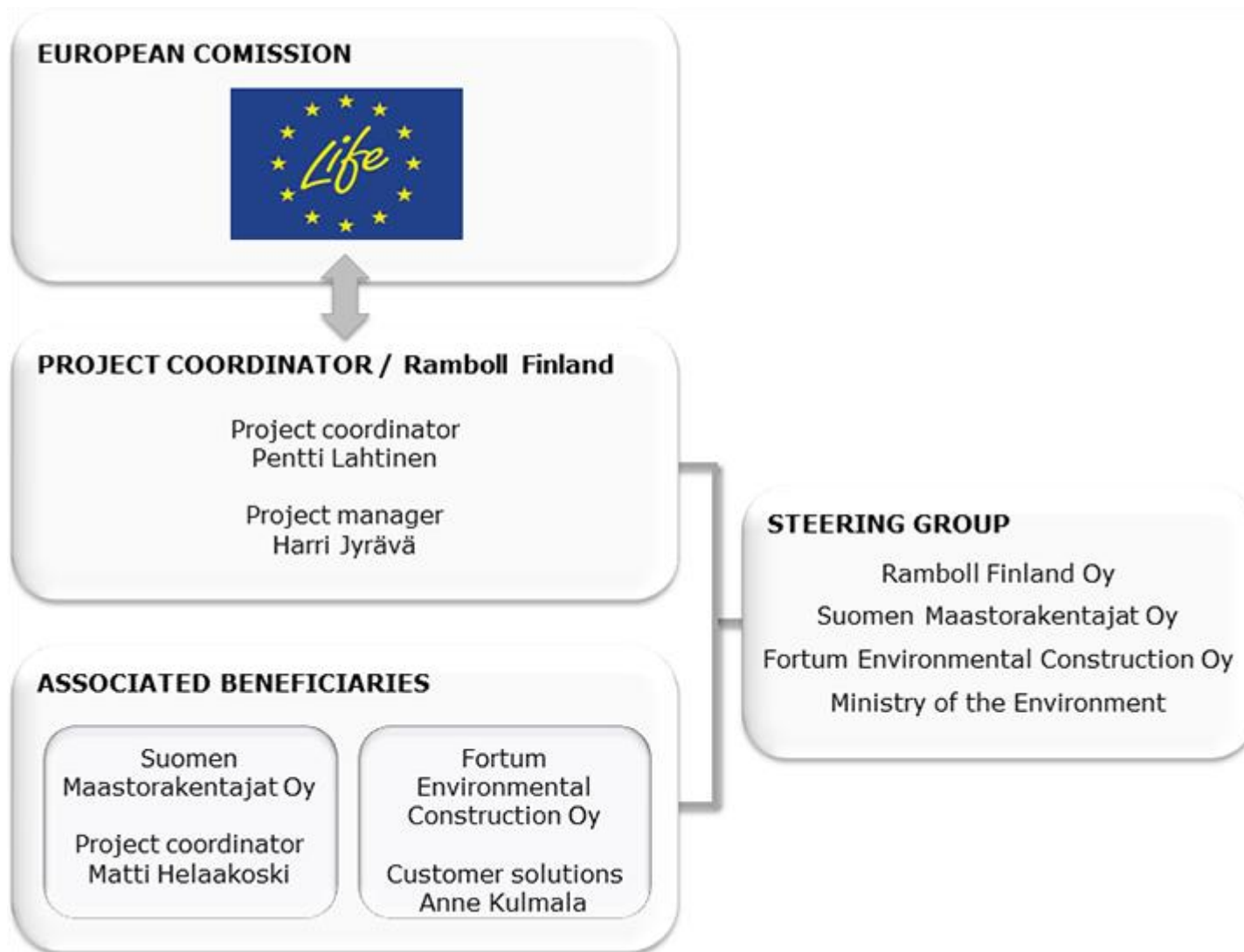


# UTILIZATION OF BY-PRODUCTS AND ALTERNATIVE CONSTRUCTION MATERIALS IN NEW MINE CONSTRUCTION – UPACMIC LIFE12 ENV/FI/000592



***LIFE+ Environment Policy and Governance***

# UPACMIC ORGANIGRAMME

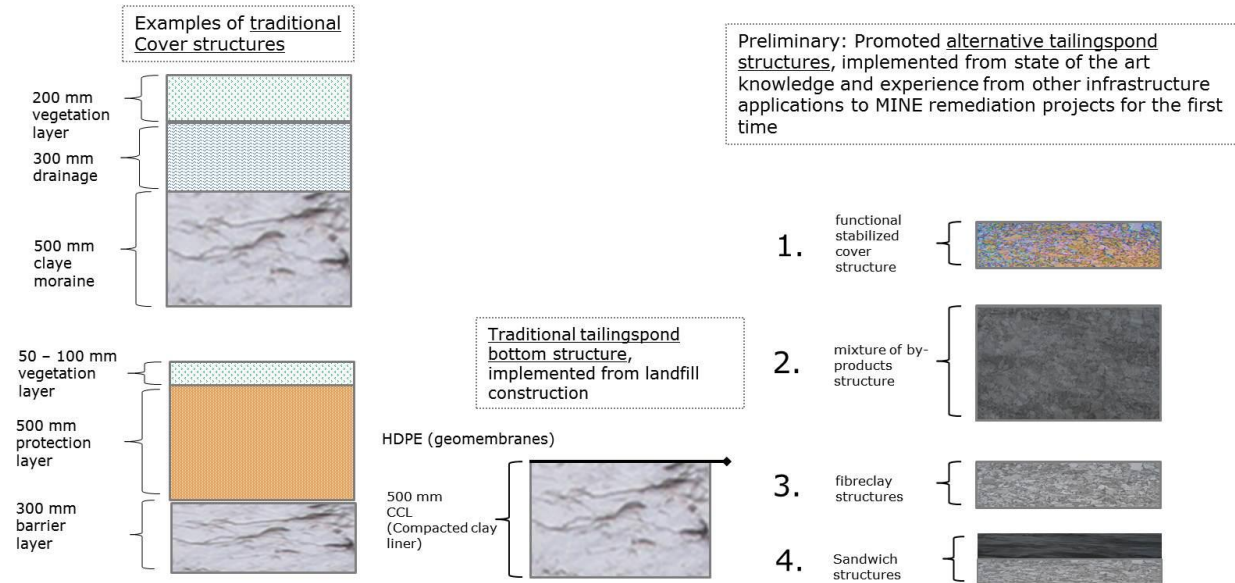


Co-financers:  
Yara Suomi Oy  
The Ministry of the Environment (Finland)

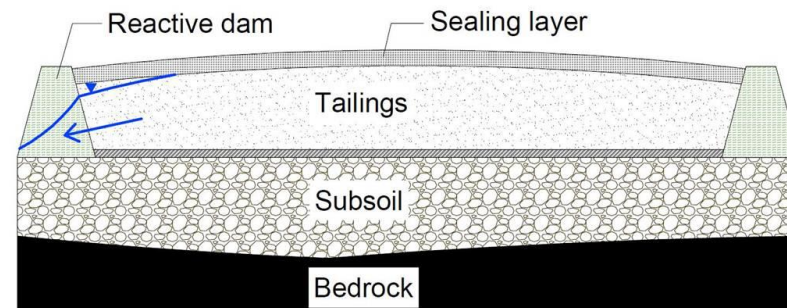


# TRADITIONAL STRUCTURES IN FINLAND AND PRELIMINARY IDEAS OF NEW PROMOTED STRUCTURES

## Traditional and promoted new applications in FINLAND



### Preliminary idea of reactive dam structure



# POSSIBLE BY-PRODUCTS FOR REPLACING AGGREGATE MATERIALS

## What?

UPACMIC (Utilisation of by-products and alternative construction materials in new mine Construction, LIFE12 ENV/FI/000592) aims to utilize alternative construction materials in new mining facilities and remediating the existing ones.

## How?

The approach proposed by the project derives from waste material mixture methods applied in various infrastructure development projects. Owing to the UPACMIC project this technology will be implemented in the mining industry for the first time.

## Why?

Alternative construction materials will replace non-renewable natural materials such as eskers and moraines, as well as commercial sealing products like bentonite mattes and geosynthetic geomembranes.

## Who?

The UPACMIC project is coordinated by Ramboll Finland Oy and associated beneficiaries are Suomen Maastorakentajat Oy and Fortum Environmental Construction Oy (former Ekokem Oy).

The project is financed by the EU LIFE+ Environmental Policy & Governance programme and Ministry of the Environment.

## When?

1.7.2013-30.06.2020



# PLANNED PILOTS IN UPACMIC

## Cover structures:

In Pyhäsalmi Mine by utilising especially fly ash and gypsum. The construction will take place in 2017-2018.

In Hitura Mine by utilising approximately 100 000 tons of fibre clay. The construction will take place in 2017-2018.

## Bottom structures:

In Orivesi Mine by utilising fibre clay. The construction will take place in 2017-2018.

## Reactive dam structure:

No pilot site yet.

# Lysimeter installations in Pyhäsalmi mine in spring 2016



# PROJECT ACTIONS

## **A. Preparatory actions**

- A1 Signing Consortium Agreement and Steering Group Launch
- A2 Plans for Preliminary Materials and Methods and Equipment Development
- A3 Materials
- A4 Applications

## **B. Implementation actions**

- B1 Piloting
- B2 Logistical Model
- B3 Quality control and verification

## **C. Monitoring of the impact of the project actions**

- C1 Monitoring of the impact on the target audience
- C2 Monitoring of the project actions impact on the environmental problem targeted and assessment of the socio-economic impact

## **D. Communication and dissemination actions**

- D1 Presentation Materials, Layman's report, Media work
- D2 Life+ Information Boards
- D3 Project Website
- D4 Participation in and Organisation of National and International events, workshops, seminars
- D5 Guidelines and Technical publications on the project

## **E. Project management and monitoring of the project progress**

- E1 Management and Monitoring
- E2 Networking with other projects
- E3 After-Life Communication plan
- E4 External audit

