

Environmental impact/assessment

Kostas Andreou

Department of Chemical Engineering
Cyprus University of Technology, Cyprus

Interreg
*M*editerranean



Project co-financed by the European
Regional Development Fund



RE-LIVE WASTE

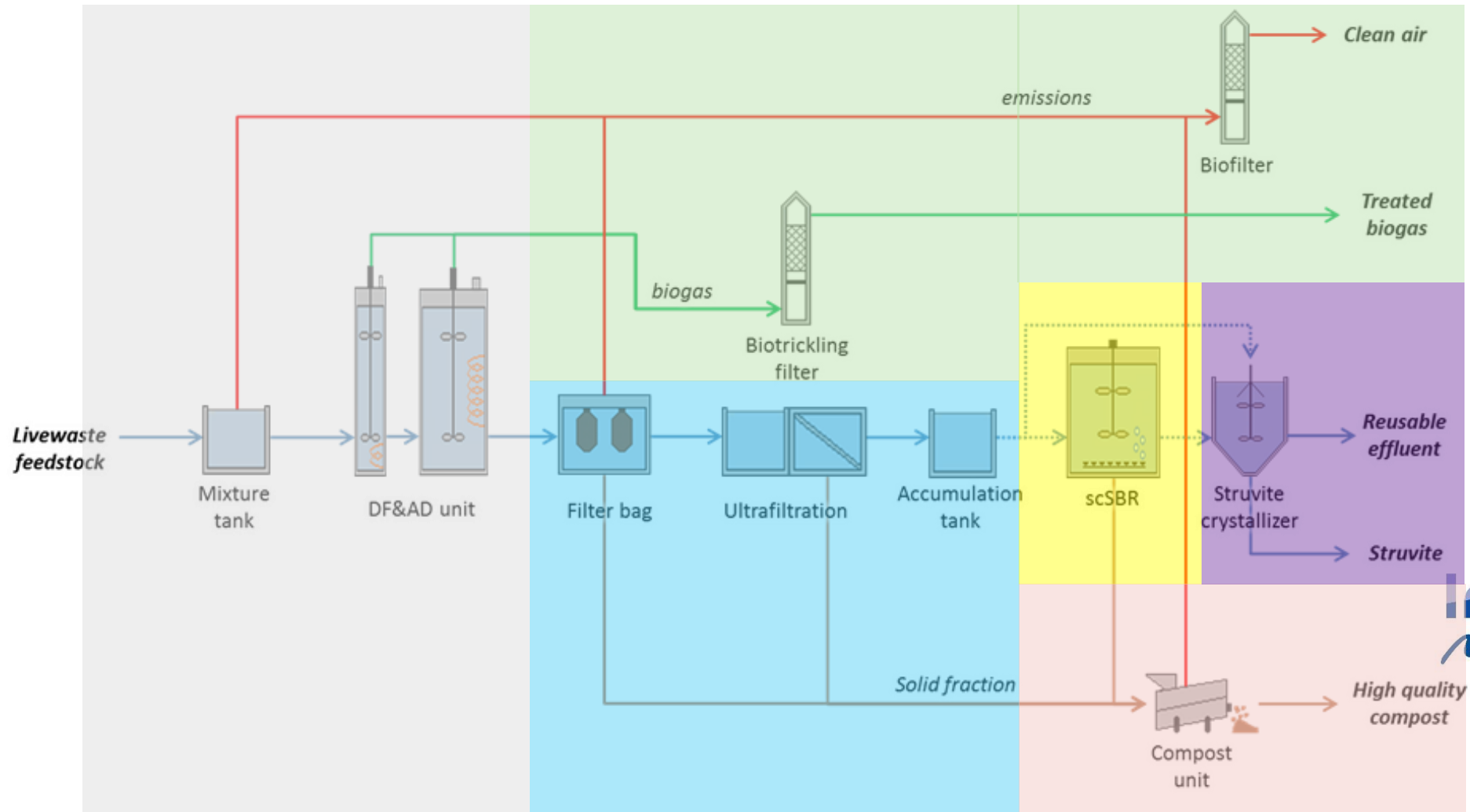
Life Cycle Analysis (LCA) on Struvite production

- Addressing environmental burdens from the production of struvite
- Holistic and systematic assessment of the environmental impacts
- Allocation of environmental burdens to all products of the Livewaste pilot (biogas, compost, effluent and struvite)
- The methodology for an LCA is described in international standards -**ISO 14040**

and **ISO 14044**
LCA facilitates:

- Identifying opportunities to improve the environmental aspects of products at various points in their life cycle;
- Decision making in industry, governmental or non-governmental organizations(e.g. strategic planning, priority setting, product and process design or redesign);
- Selection of relevant indicators of environmental performance, including measurement techniques; and
- Marketing (e.g., an environmental claim, eco-labeling scheme or environmental product declarations).

Operational units of the Livewaste System



Data collection

- Follow the data template for ALL the processes in your pilot!

Description of unit process: (attach additional sheet if required)

| Chemicals and Material inputs | Units | Quantity/ year |
|-------------------------------|-------|----------------|
| (insert lines if required) | | |
| | | |
| Water consumption | Units | Quantity/ year |
| (insert lines if required) | | |
| | | |
| Energy inputs | Units | Quantity/ year |
| (insert lines if required) | | |
| | | |
| Transport | Units | Quantity/ year |
| (insert lines if required) | | |
| | | |
| Material outputs | Units | Quantity/ year |
| (insert lines if required) | | |
| | | |

Anaerobic digestion

Biogas production

Filtration and Ultrafiltration

Sequencing batch reactors (SBR)

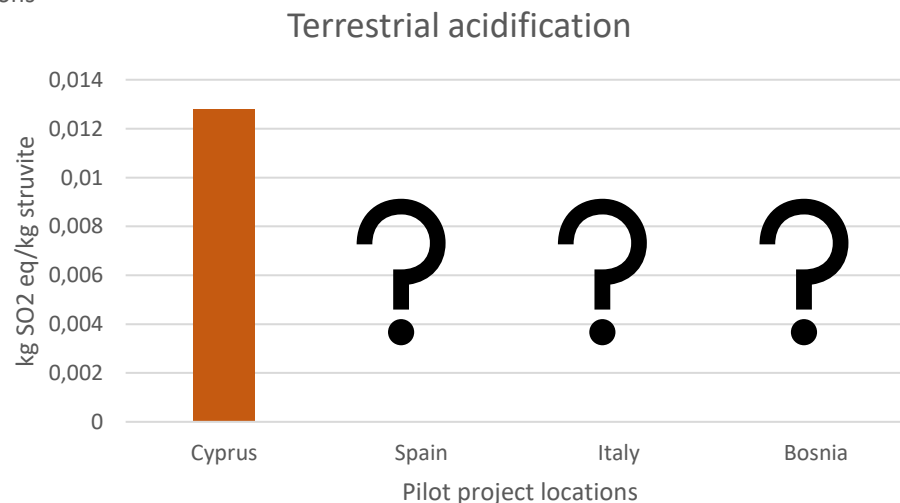
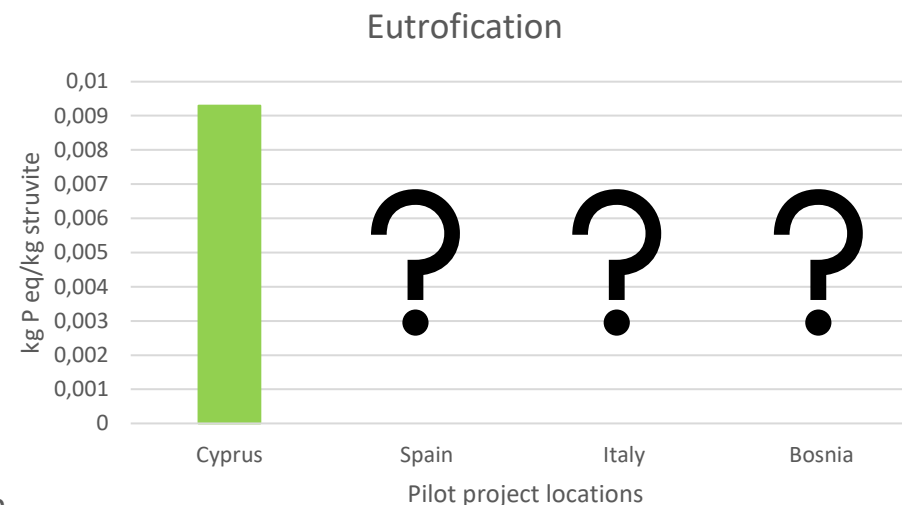
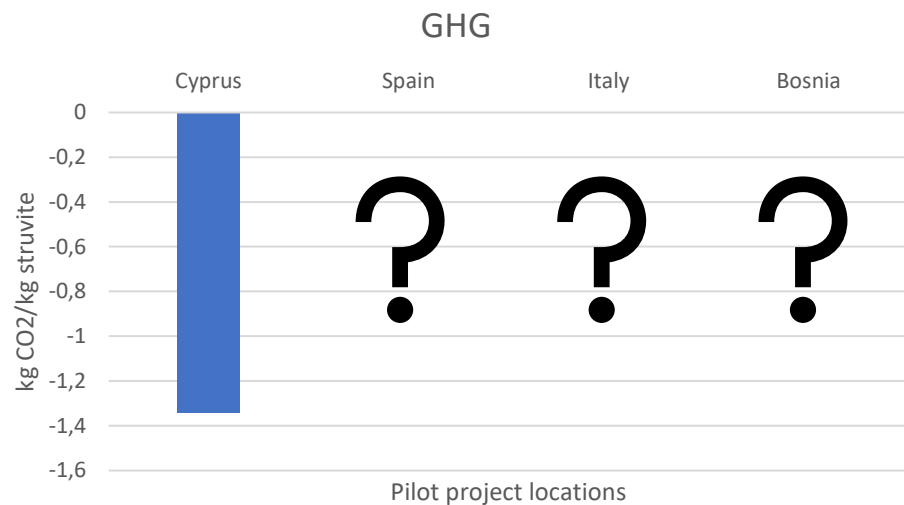
Struvite crystalizer

Composting unit

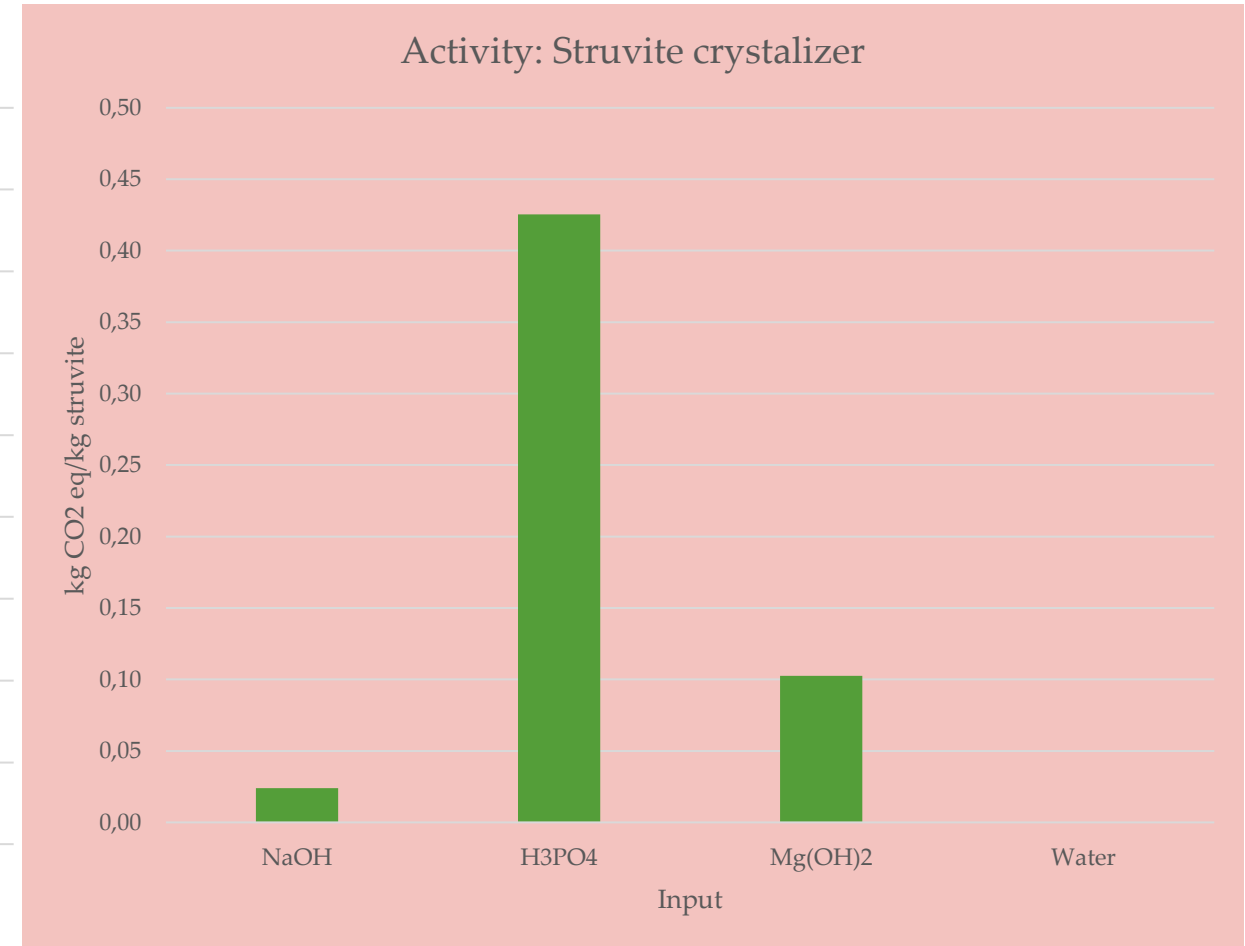
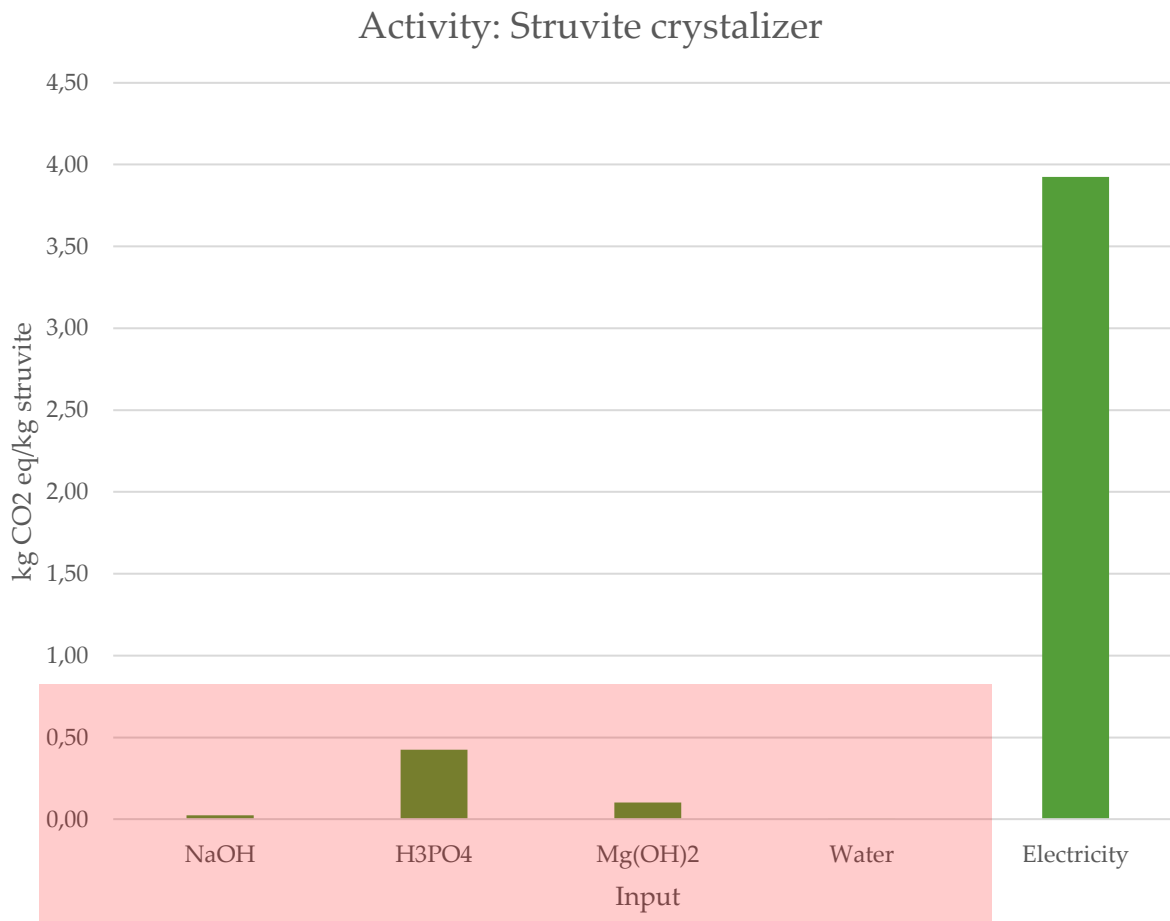
Interreg 
Mediterranean

 **RE-LIVE WASTE**

Preliminary results-Cyprus pilot plan



Struvite crystalizer



LCA results

- Results per process/activity
- Sensitivity analysis also to be performed. Variables to be agreed in a later stage
- Emission factors for electricity for the various regions
- Emission factors for water usage (?) for the various regions
- Emission factors for transport if applicable

Further steps

- Data collection. Please return the data sheet as soon as your pilot is up and running.
- Please include all the processes
- Do not send each processes individually if possible
- As soon as we receive the data will be reviewed and we will acknowledge any gaps asap.

Thank you

