

**Seminar on the implementation of C2C issues in food industrial processes**

**Conference Center of Sindos Thessaloniki Technical Educational Institute of Thessaloniki (Teithe)**

**April 1st and 2nd 2013.**

**The pilot training on C2C.**

**Number of participants: 35**

**Impressions by Rudolph G Bolsius projectmanager C2C.**

1. The agenda of the meeting

**Short term seminar:**

**Implementation of C2C issues in food industrial processes**

**Monday April 1<sup>st</sup>**

9.00-9.30	Registration
9.30-9.45	Welcome-short presentation by the Greek partner
9.45-10.00	R. Bolsius: The C2C concept: Why, What and How!
10.00-10.45	K. Webster: <i>Towards the Circular Economy</i> – Food and farming issues and opportunities (using the report based on McKinsey analysis– Vol 2) Ellen MacArthur Foundation. UK
10.45-11.15 Coffee break	
11.15-11.45	E. Karagiannidis: Best available technologies in food industries
11.45-12.15	A. Hatzianeou: A zero waste process for olive mill plants
12.15-12.45	S. Stavrou: Utilization of solid residues from peach processing plants
12.45-13.15	D. Floros: Energy conservation in dairy industries
13.15-14.15 Light lunch	
14.15-14.45	T. Panoras: Reclamation and reuse potential of wastewaters
14.45-15.15	E. Tsourgianni: Utilization of solid residues from grape industry
15.15-16.15	Discussion-End of 1 <sup>st</sup> session
16.15-16.30	Close of the first day

**Tuesday April 2<sup>nd</sup>**

9.00 -9.30	A. Rubos: Presentation of the C2C game
9.30-11.00	C2C game (all)

11.00-11.30 Coffee break

11.30-15.00 Visit in an olive mill plant-Potential for C2C issues implementation in the plant-light launch

15.00-15.30 Discussion-Conclusions

## 2. Impressions of the programme:

### **1 Presentation on Working and Living in the World of Cradle to Cradle:**

By Rudolph G.Bolsius projectmanager on the WHY,the WHAT and the HOW of C2C.

The basic principles/

### **2. Presentation of dr.Ken Webster from the Ellen MacArthurfoundation on The implementation of Circular Economy issues in the food sector.**

### **3 Presentation of prof.dr. E.Karagiannidis: On the best available technologies in food industry.**

He mentioned the standards and procedures for industrial biosystems.

The recent developments in industry working is about installing chains and cooperation in waste protection.

Some examples:

#### **Breweries**

1 In the industrial area of Thessaloniki the use of materials in breweries take care of energy neutralisation in various processes like reuse and recovery of dice of various substances in foodprocessing recovery of daily waste of water.

Warm proteine substancies of waste water in breweries is used in aquariums.

Seperation of gist from beer makes it possible to reuse of these gists into the production process of materials for animal breeding .

Inspired by the C2C philosophy linear thinking is changed to circular thinking:everything is used from the by products of the brewery and leads to real upcycling and not the usual downcycling.

Hot waste water contains proteine and that is used for pig food.

And digester produces biogas for algae pond.

2. Cutting of the potatoes produces waste water production of glue and animal food and again used for cleaning potatoes.

3 Diaries waste water of high mountain combined processes

Several industry producing proteins!!!!!!

Process now complicated process and expensive.

4 Energy utilisation of cotton seed plants can be used for energy demands in the same unit in neighbouring companies.

5 The use in chemical companies production of high chloride and this can be from iron acids can be turned into useful materials.

Recovery from waste water required organisation of industrial biosis and the aim is the best raw materials energy and waste water between the industries(chains)

THIS NOT EASY: it needs connection and networking in the chain of the producers and consumers.

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#### **4 Presentation of olive oil production by A. Hatzianandreu**

This way of producing is the result of C2C implementation techniques.

He is the owner of the mill land started in 2000.

In 2001 low temperature influenced the production and out of operation for 4 years.

Then he started to use cooking oils: 100 barrels of 50 liters distributed in several restaurants and first they had to contact people collect used oils put the oil into the barrels.

They had to take official permission for collection and storing used cooking oils for reusing.

After permission 15 people collected 500 tons of cooking oils :3000 tons from domestic use.

Collecting of used oils central point industrial plants for biodiesel.

Permission for cooking oils.

Olive mill: innovation into two phase production.

The two phase process leads to better quality and lower amount of water

For a more detailed version of this way of producing see the contribution of dr. Roubus on Change in olive production(website pilot Greece)

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#### **5. Prof. dr. Karagiabdis EFP EDU funded project**

**Supply chain management the bigger picture on Green Agri Chains.**

Innovation capacity building by strengthening expertise and research in design planning.

## **6.Prof.T.Panores Reclamation and reuse of potential wastewater**

1000 kg corn need 500 m<sup>3</sup> liters of water for 1 acre

60-80 % is used for irrigation.

We reserve water by this way of working: not water of high quality

160.000 m<sup>3</sup> per day (comp.to a river)

Great challenge to use this water.

Mistrust about the quality of the water is a problem.

Waste water for irrigation.

1st 1995 first attempts California:this has to be adapted to local conditions.

Guideliness for using also about quality trust.

Pilots 2007!!! After 12 year: sugarbeets in close coperations with a lot of partners.

Chemists biologist/local community

Also corn production/cotton/rice/wheat

Water station to measure the excaet amount of water needed.

Continue monitoring water mixed with water of the river to meet the criteria

Complex issues: not only irrigations/water conditions history etc

Waste water is brought into the soil to make a natural barrier for the salt water of the river

Farmers used salt water for their irrigation till then and now the situaton is far better

Also by products by mixing different substances for extra food for agriculture

Ken Webster gives his opinion on the relation with Circular economy.

And points out some intersting items.

After these intrductions and lectures the participants a mix of students and company people play the game with high intensity.

Result is a lively discussion on topics regarding how to make products in a C2C way.

After lunch we visit an olive mill where the owner presents in practice what he means with C2C approach.

Impressive how a culture of olive production can be changed by means of relatively simple steps: it is all about awareness.

After the olive oil mill we visit a tomato production unit where the heating is organised in a natural way: in fact more money is earned by the energy approach than by selling tomatoes.