Greening hotel laundry services by Life Cycle Approach

2017 Global INSTO Meeting
Madrid, Spain, 13/14 December 2017
One word about Betterfly Tourism

One mission

« As software editor, we create additional benefits for hotel and restaurant and promote Environmental and sustainable engagement »

3 Additional values

Cost savings  Environmental savings  Responsible image

3 solutions

Winggy Environmental footprint of hotels and restaurants

Food waste reduction

Local territories: sustainable tourism strategy monitoring
Why working of hotel’s laundry?

**Jeopardy time**

From 1 € to 10 € per guest night

470 000 tons of CO2 per year in France

110 000 tons of chemicals in Europe

30 g of waste of coton and PET per guest night

10 million tons of water per year

*Source: environmental footprint of French hotels (2011 – 2013)*
The problematic to reduce impact

- Materials
  - Life span
  - Provenance
  - Quality
  - Management system
  - Sustances
  - Chemicals
  - Industrial process
  - Costs for each actor of the value chain
  - Logistics
  - ….

Too many connected parameters!

→ need for systemic assessment and innovation with life cycle stakeholders
The working groupe

Life cycle working group:
- 1 linen supplier
- 7 Laundries
- 1 chemical supplier
- 6 Hotels and 1 hotel association
- 2 Technical centers (textile and laundry)
- 2 consultancy companies
First step : impact assessment

4 LCA indicators :

- Non renewable ressources
- Primary energy
- Greenhouse Gases
- Water consumption (in life cycle)

+ On specific focus on chemicals
What are the most risky chemicals used during the towel/linen life cycle ?

The functional unit :
Offer clean towel and linen for one client (including bedlinen and bath towels)
Main results – linen importation scenario

**CYCLE DE VIE DU LINGE HÔTELIER**

- **Extraction des matières premières**
  - Coton
  - Polyester
  - Balle de coton

- **Fabrication du linge**

- **Livraison du linge neuf**

- **Nettoyage et traitement**

- **Distribution quotidienne**

- **Hôtel**

**DOÙ VIENNENT LES IMPACTS ENVIRONNEMENTAUX DE LA LOCATION DE LINGE ?**
(chiffres clés pour une nuitée, scénario linge d'import)

- **1 KG de CO₂ émis sur l'ensemble du cycle de vie**
  - 52% liés à l'extraction des matières premières et à la fabrication du linge
  - 24% issus du nettoyage et séchage

- **8.6 kWh d'énergie primaire consommée au total**
  - 52% pour l'extraction des matières premières et la fabrication du linge
  - 13% pour le nettoyage et le séchage
  - 10% pour la distribution quotidienne entre l'hôtel et la blanchisserie

- **144 L sont consommés**
  - pour l'extraction et la production du linge

- **109 L sont consommés**
  - pour le nettoyage des draps et des serviettes

- **9,1 E−7 kg SB sont consommés**
  - pour la distribution quotidienne entre l'hôtel et la blanchisserie

- **75%**
  - consommation de ressources

**Chemicals**

**Daily transportation**

**Cleaning**

**Linen extraction and production**
2 days of innovation meeting

Step 1: stakeholder list and decision tree to understand the system and relationship between actors, prescriptors,...
Step 2: creativity More than proposed 90 solutions: short term, long term. Identification of potential difficulties
Step 3: classification of the solutions
Final result: selection of short term solutions

Impacts could be divided by 3!
Conclusion

Life cycle approach are really powerfull tool because :

✓ Systemic approach, including all stakeholders
✓ Give figures and proofs
✓ Allow collective innovation with real environmental savings
✓ Give possibilty to speak together with a common goal: reduce impacts and life cycle costs
✓ Decrease tension between actors who are often in opposition and costs
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