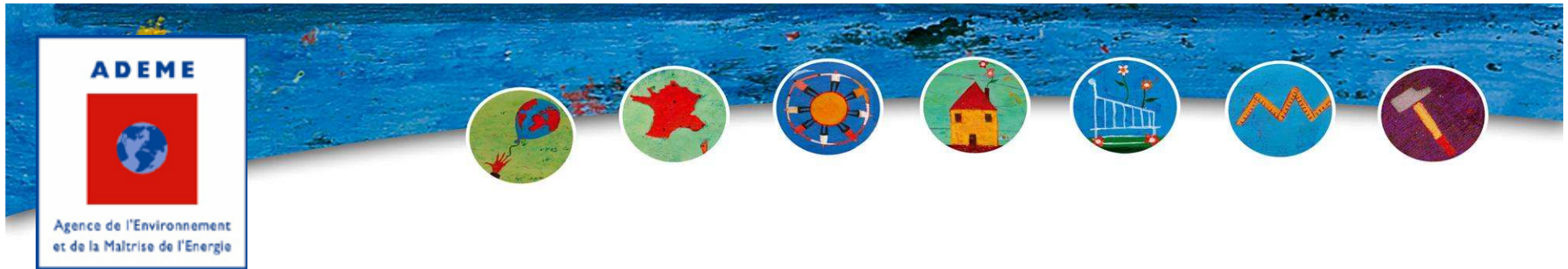




***1. Study for a simplified LCA methodology adapted to bioproducts***

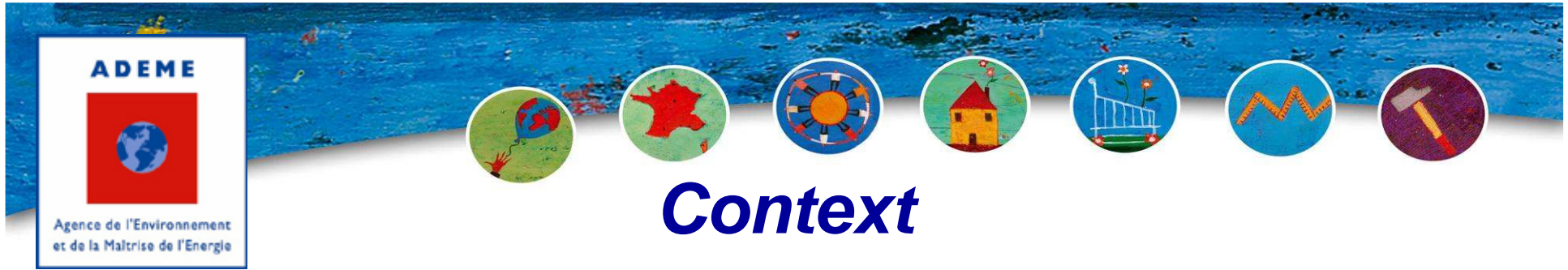
***2. Environmental information of mass market products***

Léonard BONIFACE - ADEME  
*IEA Task42 – Lille March 3d, 2010*



# ***1. Study for a simplified LCA methodology adapted to bioproducts***

**ADEME – BIO-IS**



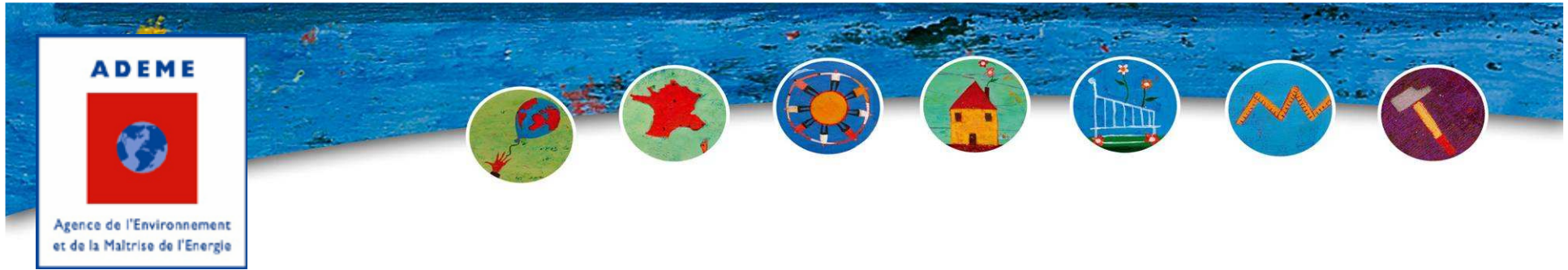
- Renewable raw materials can be used for various purposes :
  - food,
  - energy, (wood fuel, biofuels, biogas...)
  - non-food biobased products,
  - construction materials
- Biobased products are expected to contribute to GHG mitigation, primary energy savings and other Environmental advantages.
  - How to prove it?
- In 2004, ADEME / EPFL / BG made a review : LCA of biobased products for materials, chemicals and energy (2004) – State of LCA knowledge :
  - Main results:
    - Low reliability of data,
    - Many different functional units used,
    - Many different methodologies used,
    - ► **Almost impossible to compare 2 biobased products or a biobased to a petrobased product**



## Objectives

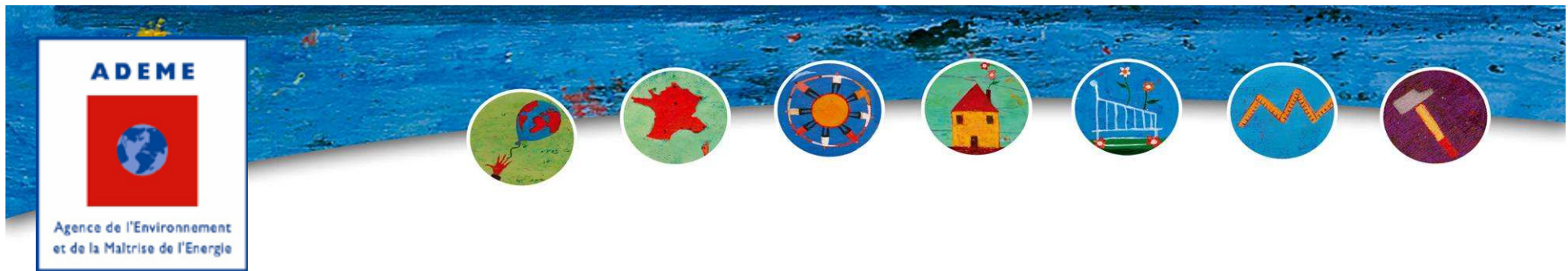
- Update the review of existing LCA of biobased products.
- Study each methodological issue in the evaluation of bioproducts
- Develop a methodological framework to evaluate the environmental impact of bioproducts in taking into account the specificities of the raw materials
- Specify recommendations depending on the objective of the LCA:
  - Comparative LCA
  - Eco Design
  - Environmental labeling
- Pay attention to the consistency with other methodological frameworks being developed
  - Biofuels repository
  - PAS 2050
  - ADEME/ AFNOR platform
  - ...





## ***First Step: New review of existing LCA***

- Since 2004, LCA of biobased products are still very heterogeneous in their :
  - Methodology
  - Choice of functional unit
  - Cut-off criteria
  - Data Inventory
  - Lack of detail & Transparency



## *First Step: New review of existing LCA*

Impact Categories	Geographic scale	Reliability	Frequency in LCA
Non Renewable Energy consumption	Global/regional	++++	high
Climate change	Global	+++	high
Stratosphéric ozone depletion	Global	++	medium
Ecotoxicity	Regional/Local	+	Low
Photo-oxidation	Regional/Local	++	Low
Air acidification	Regional/Local	++	medium
Eutrophication	Regional/Local	++	medium
Human Toxicity	Global/Regional/Local	+	Low
Land Use	Regional/Local	++	medium



## ***Second Step: methodological issues***

Special focus on the agricultural upstream

- **1 methodological issue = 1 Factsheet :**
  - The field (cradle to gate or grave?)
  - The Functionnal Unit
  - Impact Categories
  - Impact indicator – ex : Toxicity (CML, Impact2002+, USETox, VCD TReCiPe...)
  - Data Inventory and reliability of data
  - Cut-Off Rules
  - Allocations (Eco, Mass or Energy prorata ; avoided burden approach)
  - Time scale & biogenic carbon storage
  - Agricultural stage (N<sub>2</sub>O, NH<sub>3</sub>, toxicity, Photo-oxidation, eutrophication, fertilizers, water consumption...)

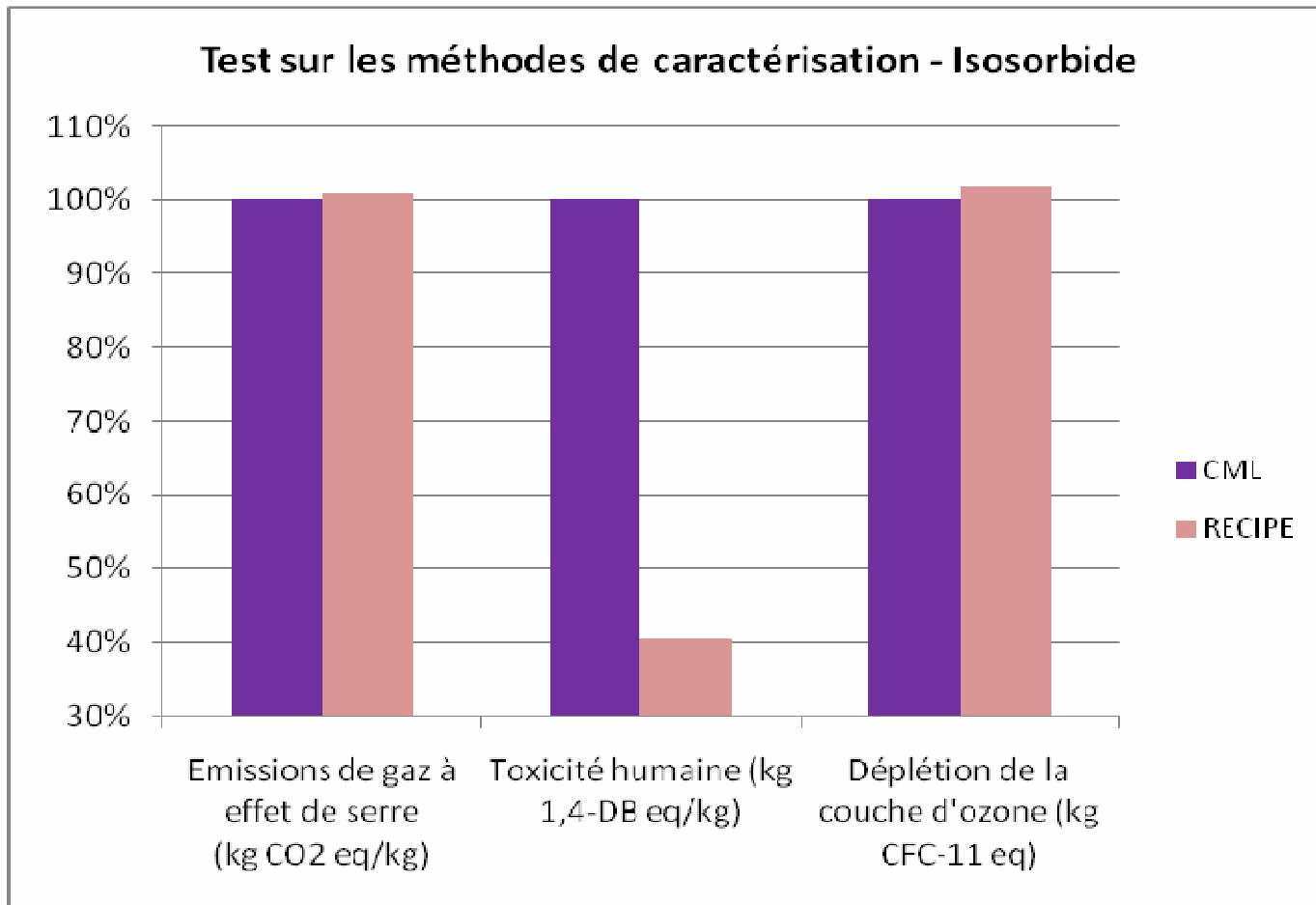


- For each methodological issue :
  - Sensitivity test for 3 products:
    - 1 chemical Intermediate
      - Isosorbide (Roquette)
    - 2 final products
      - Mater-bi (Novamont)
      - A biobased lubricant (Novance)





***Exemple of sensitivity test for 3 impact categories  
 between 2 characterization methods :***

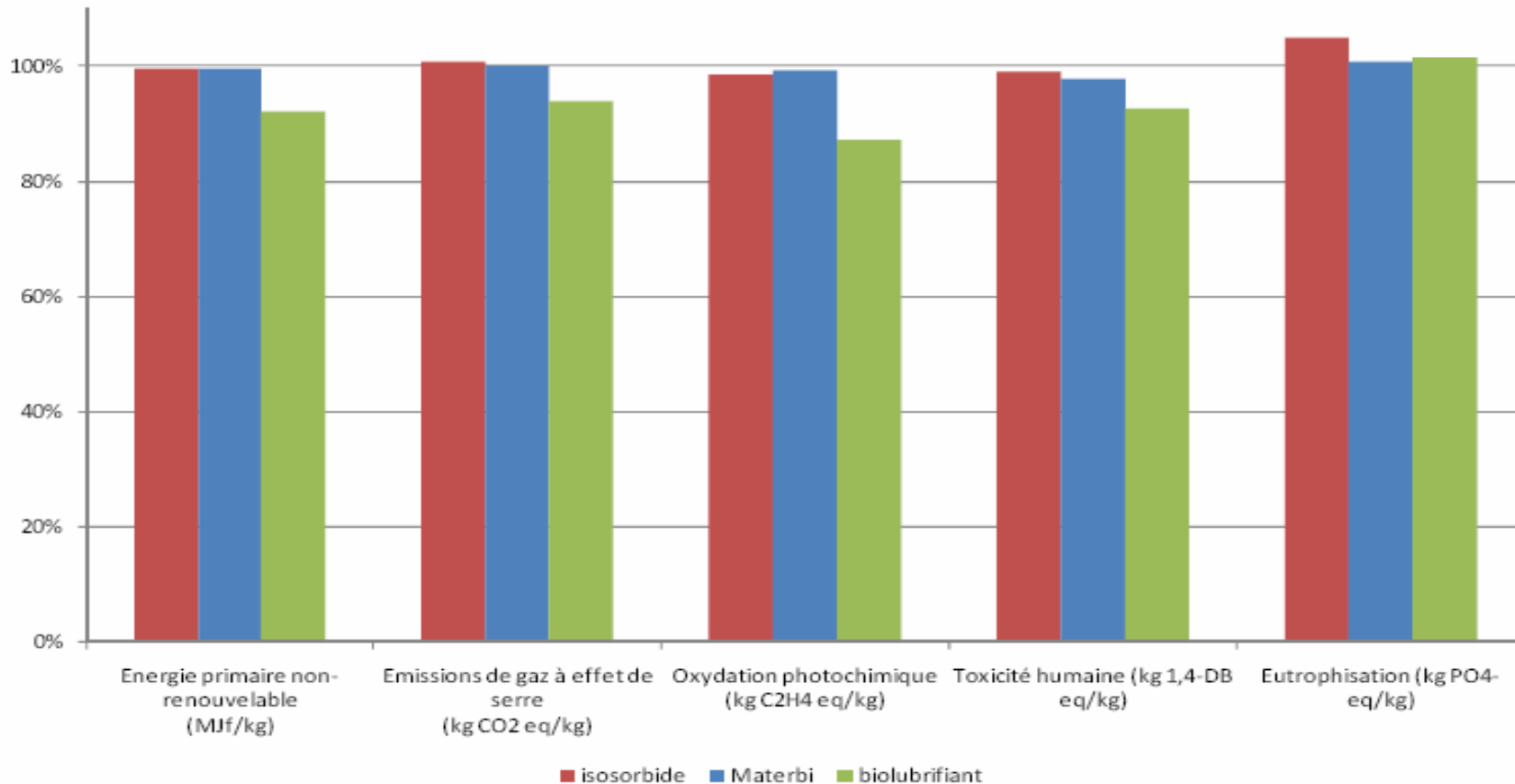


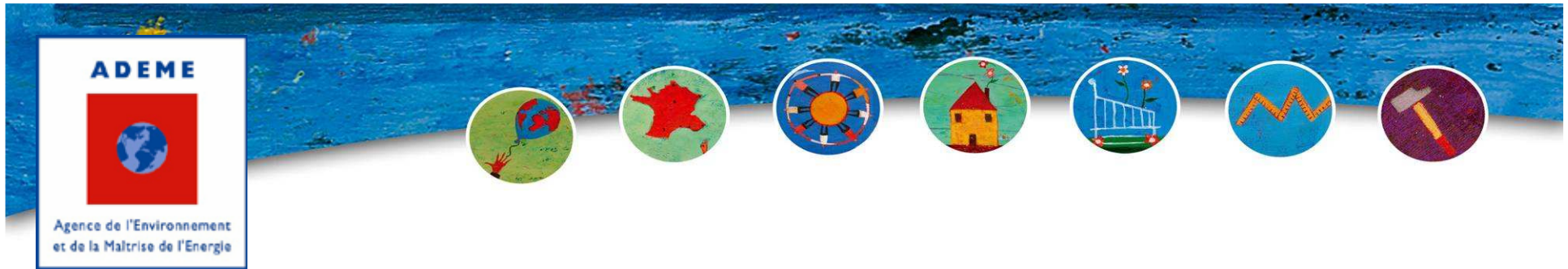
***CML or  
 RECIPE ??***



# Sensitivity study for the simplifications proposed

écart entre ACV complète et ACV avec méthodologie simplifiée





## ***2. Environmental information of mass market products***

### ***French Approach***

***ADEME***



## ***Context and objectives***

1. Legal requirement to have environmental indicators on products January, 2011, 1st
2. Allow the consumer to use the information concerning the environmental impacts of a product throughout its life cycle as a choice criterion (purchase).
3. Allow comparison of products belonging to the same category and, when relevant, between product categories.
4. Ensure comparability of the information.
5. Harmonize the environmental communication practices.





# ***Environmental information on products: principles***

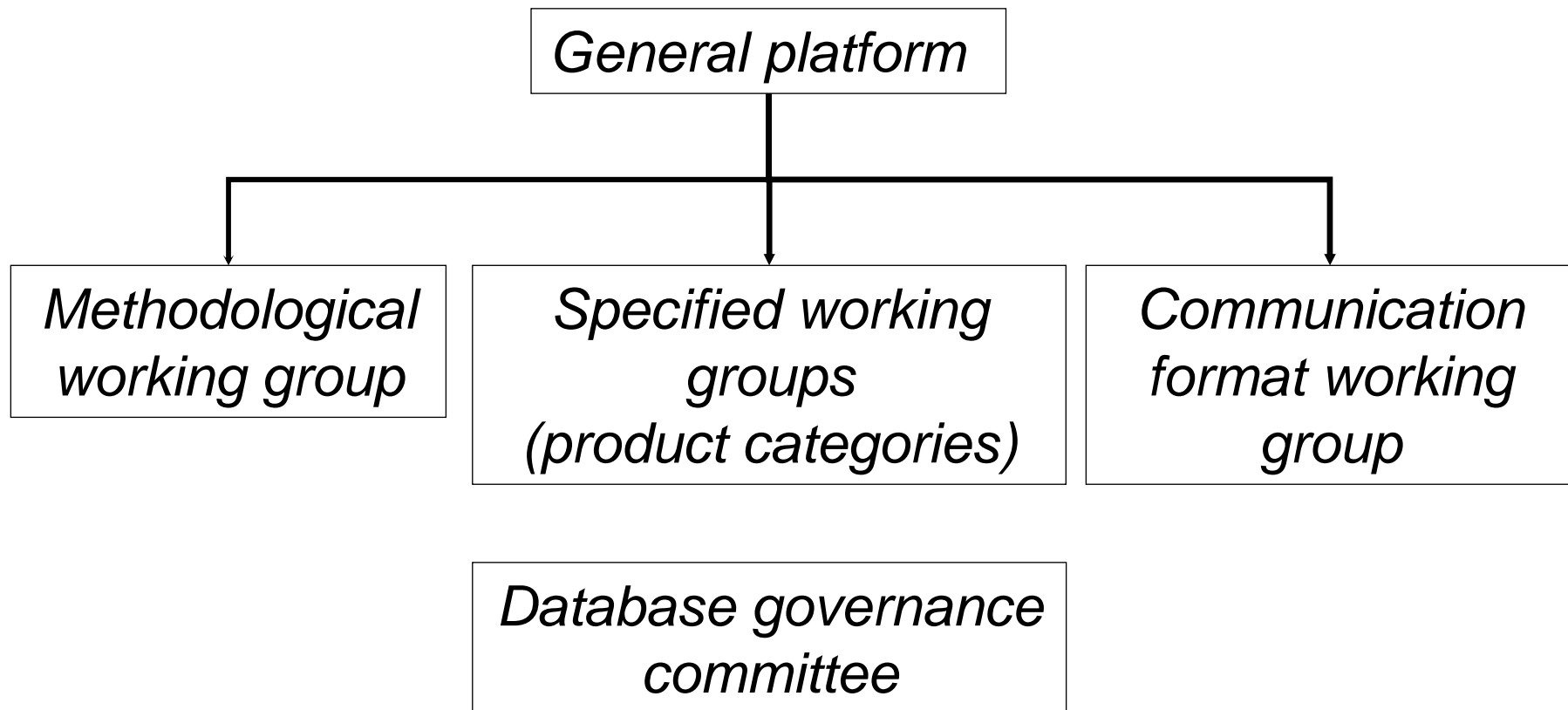
Environmental information has to take into account the following parameters :

1. Product and packaging
2. Life Cycle Thinking
3. Multicriteria approach

→ life cycle approach



## ***ADEME / AFNOR platform***





## ***General Platform***

1. Free access for anyone
2. Decision committee
3. Adopted in July 2008 a repository of good practices for environmental communication on mass market products (BP X 30-323 / AFNOR)



## ***Repository of good practices – BP X 30-323***

1. LCA approach (ISO 14040 and ISO 14044)
2. Carbon footprint is required whatever the category
3. Indicators are the same within a category (same functional unit)
4. Limited number of indicators per category
5. Harmonised communication format
6. Public secondary database





## ***Methodological working group***

1. General methodological frame for the quantification of environmental impacts of mass market products
2. Recommendations on key methodological issues (end of life, carbon storage, allocations, cut-off criteria ...)
3. Schedule
  1. July 2009 : adoption of the general methodology
  2. September 2009 : publication of BP X30-323 with methodological annex (<http://www.boutique.afnor.org>)
  3. This methodological annex is available in English.



## ***Specified working groups***

1. Food and pet food
2. Electric and electronic equipment
3. Cleaning products, products for garden
4. Body care
5. Clothes, textile, shoes, bags
6. Products for buildings, paintings...
7. Furniture
8. Cultural products, office products (papers, pens...)
9. Plates and dishes, cooking products
10. Sport equipment, camping material, games
11. Non electric equipment, ironmongery
12. Finance service



## ***Specified working groups***

- 13. Automobile
- 14. Jewellery
- 15. Spare parts for automotive industry
- 16. Music instruments

These working groups are not yet launched and will be in a second priority time schedule.



## ***Specified working groups***

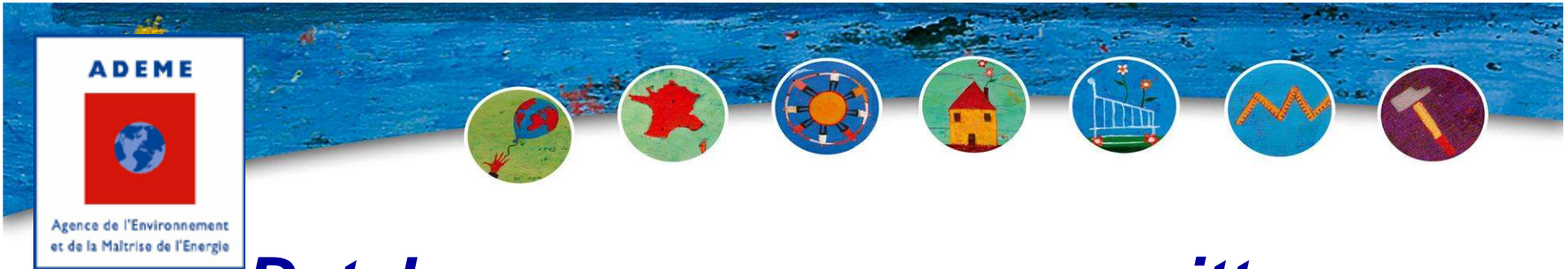
1. Define product category rules
  1. Categories
  2. Functional unit
  3. Environmental indicators
  4. Calculation methods
  5. End of life / co-products
  6. Primary Data / Secondary Data
  7. Validity of data





## ***Communication working group - Roadmap***

1. Number of indicators :
  - How many for the different product categories ?
  - Single score or multi criteria information ?
2. Common name for the impact categories ?
3. Normalized values ? Normalization factors ?
4. Absolute and/or relative values ?



## ***Database governance committee***

1. The public database is free to access and is available on the internet.
2. The public database includes the validated data from the ELCD community database.
3. The development plan of the generic database will be developed.



## ***Schedule***

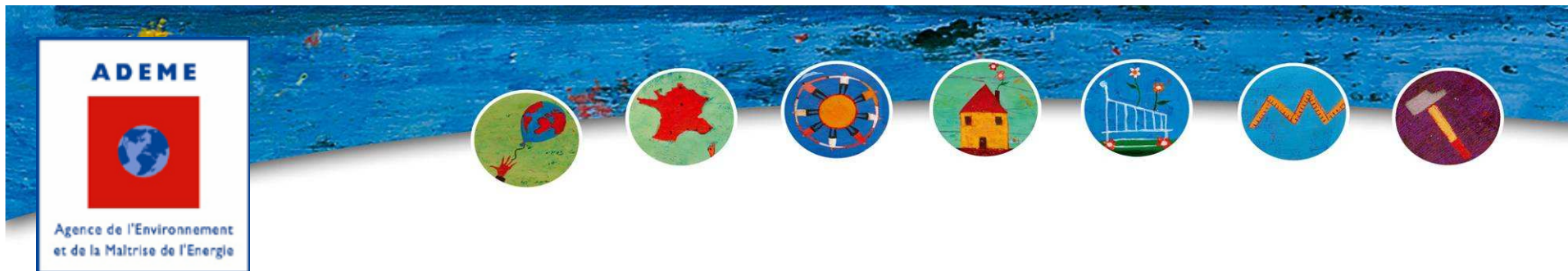
1. July 2008 : Repository of good practices
2. July 2009 : Methodological annex (quantification)
3. Beginning of 2010 : First product category rules
4. 2010 : Further work
  1. Product category rules
  2. Database (launched in March 2009)



# ***Carbon Footprint of Products - Harmonization***

1. International and european initiatives
2. European Commission : study on methods and initiatives
3. International standard ISO 14067 (work in progress)





***Thank You for your attention.***

***Leonard.boniface@ademe.fr***