

Circular Economy and Ecodesign

Workshop - 22/11/21





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Engineering consultant - Life cycle management

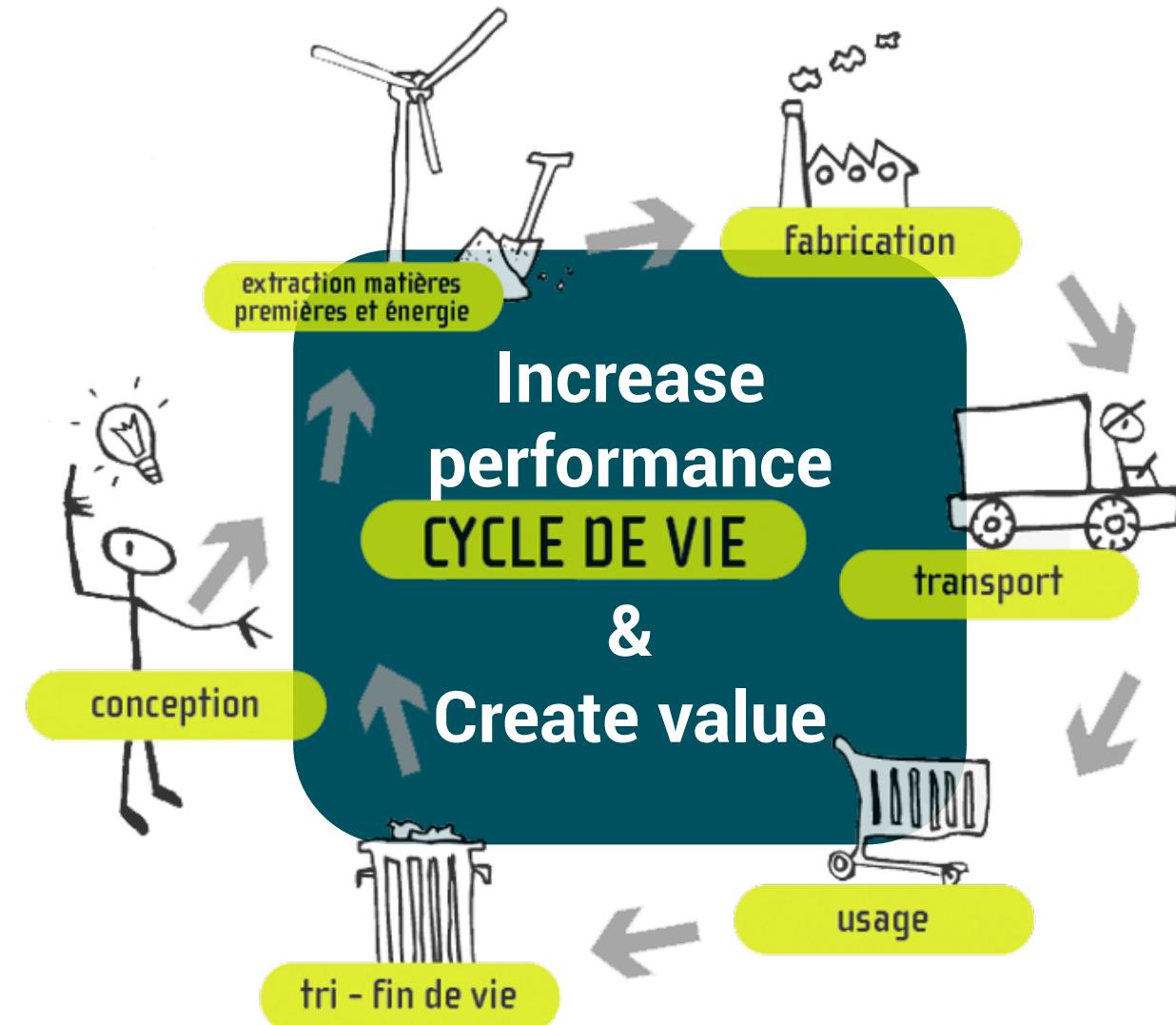


- Support and training in "environmental management, life cycle and eco-design" and structuring for eco-design
- Towards companies and consultants-auditors
 - Manual for ADEME *ISO 14001 et Cycle de vie - Augmentez votre performance environnementale*
- Biologist écologist, reconverted from environmental management and life cycle (MS-ME4 INSA-Lyon)
- Expert in ISO for ISO 14006:2020 'Environmental management systems - Guidelines for incorporating ecodesign'
- Management of the Pôle team
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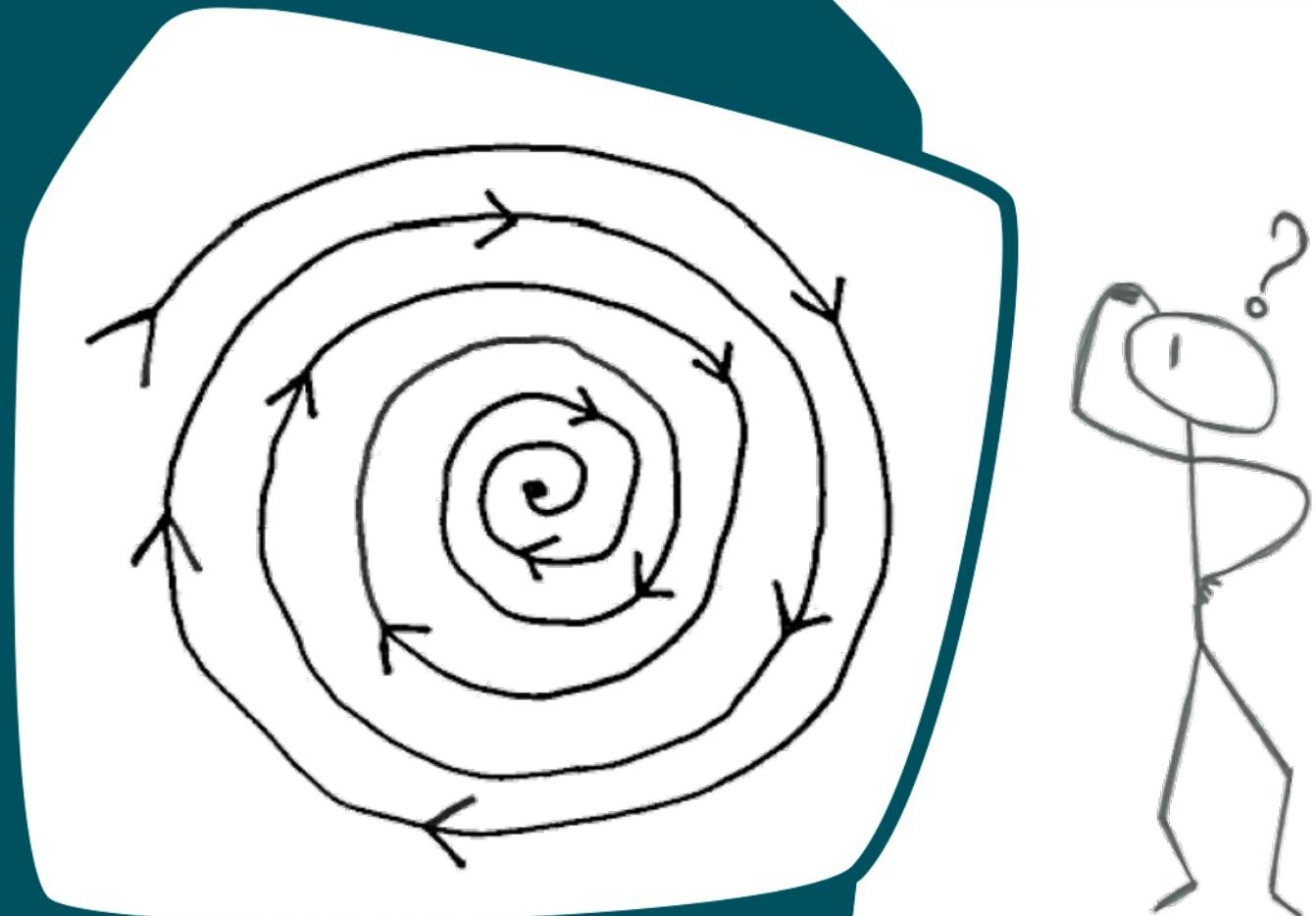


Pôle Eco-conception

- Life Cycle Thinking
→ To innovate
- Life Cycle assessment
→ To measure
- Life Cycle Management
→ To implement



Circular Economy

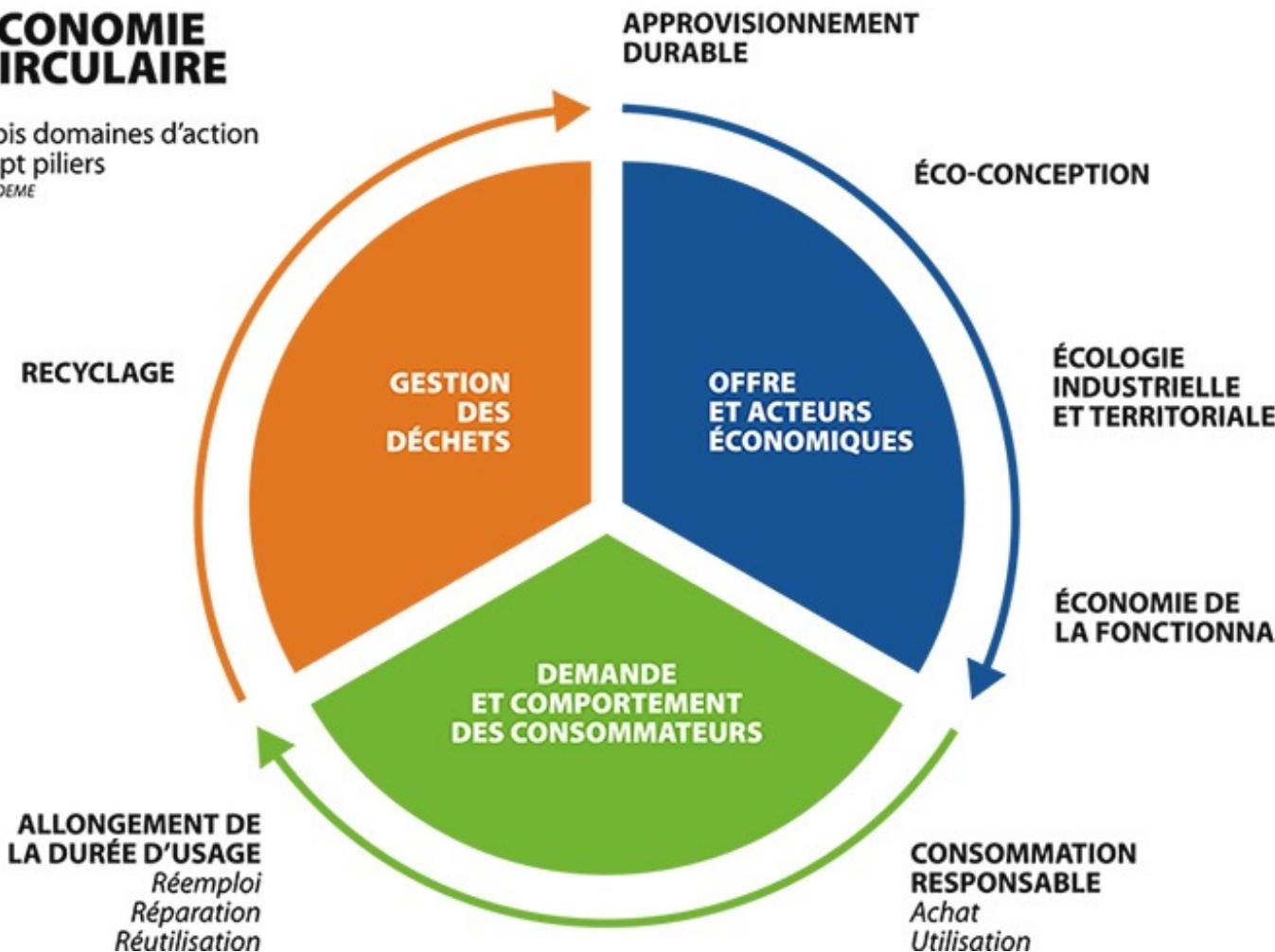




Circular Economy by ADEME

ÉCONOMIE CIRCULAIRE

Trois domaines d'action
Sept piliers
© ADEME



Offer and economical actors

- Sustainable supply
- Ecodesign
- Industrial and territorial ecology
- Product service system

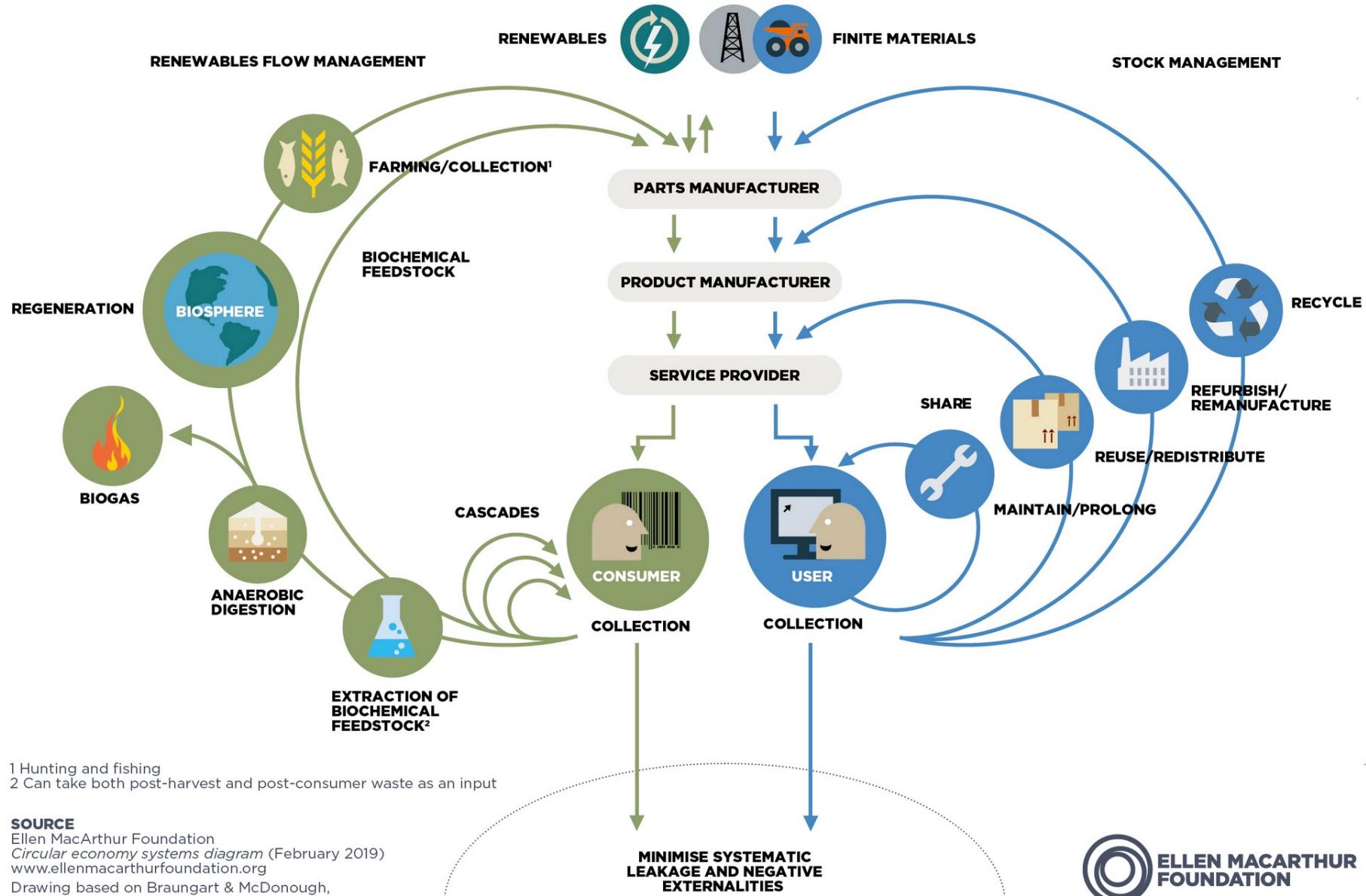
Consumers behaviour and demand

- Responsible consumption
- Lengthening use time

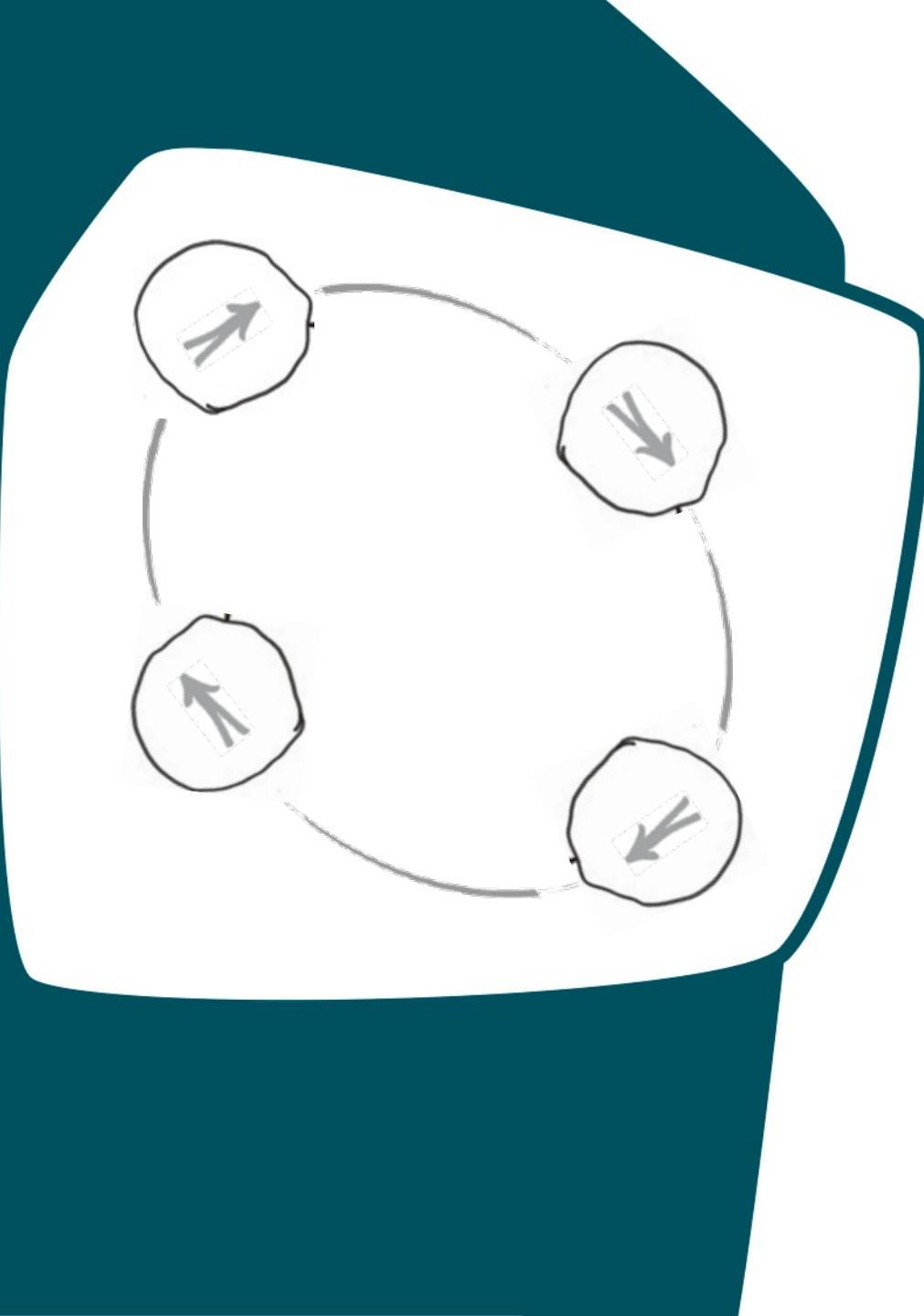
Waste management

- Recycling

Ellen MacArthur Fondation : definition



Ecodesign : a method for circular economy





Ecodesign - definition

- ✓ ISO 14006 :2020 « *Systematic approach that considers environmental aspects in design and development with the aim to reduce adverse environmental impacts throughout the life cycle of a product* »

Ecodesign Strategy wheel

Ecodesign



Recycling

**Lengthening
use time**

**Responsible
consumption**

7 Optimization of end-of-life system

Remise à niveau / refabrication
Réutilisation / upcycling
Recyclage closed-loop
Désassemblage facilité
Biodégradation
Incinération moins polluante



tri - fin de vie

6 Optimization of initial lifetime

Durabilité et fiabilité du produit
Faciliter la maintenance et l'évolution
Structure modulaire
Penser au design (effets de mode, renouvellement)
Renforcer le lien Produit / utilisateur



usage

5 Reduction of impact during use

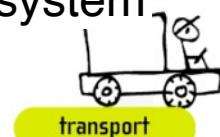
Diminuer la consommation d'énergie
Utiliser de l'énergie moins polluante / renouvelable
Réduire la consommation de consommables
Consommables moins polluants
Réduire la production de déchets
Minimiser les pertes et les gaspillages



usage

4 Optimization of distribution system

Emballages réduits
Emballages adaptés
Emballages moins polluants
Emballages réutilisables /recyclables
Modes de transports
Logistique optimisée, approvisionnements locaux



transport

0 New concept development

Repenser la façon de fournir le service
Dématérialisation
Utilisation partagée
Intégration de nouvelles fonctions
Optimisation fonctionnelle du produit
Biomimétisme

Product Service System



conception

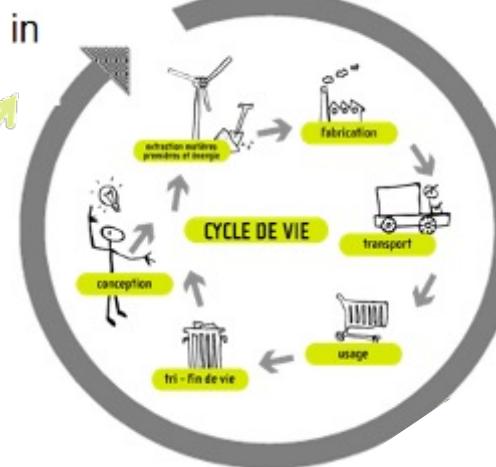
1 Selection of low-impact materials

Matériaux moins toxiques
Matériaux renouvelables
Matériaux recyclés
Matériaux recyclables
À contenu énergétique moindre
Naturels

Sustainable supply

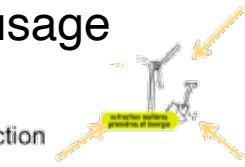


extraction matières premières et énergie



2 Reduction of material usage

Réduction en masse
Réduction en volume
Re-design des pièces pour optimiser la fonction
Rationalisation / Diversité



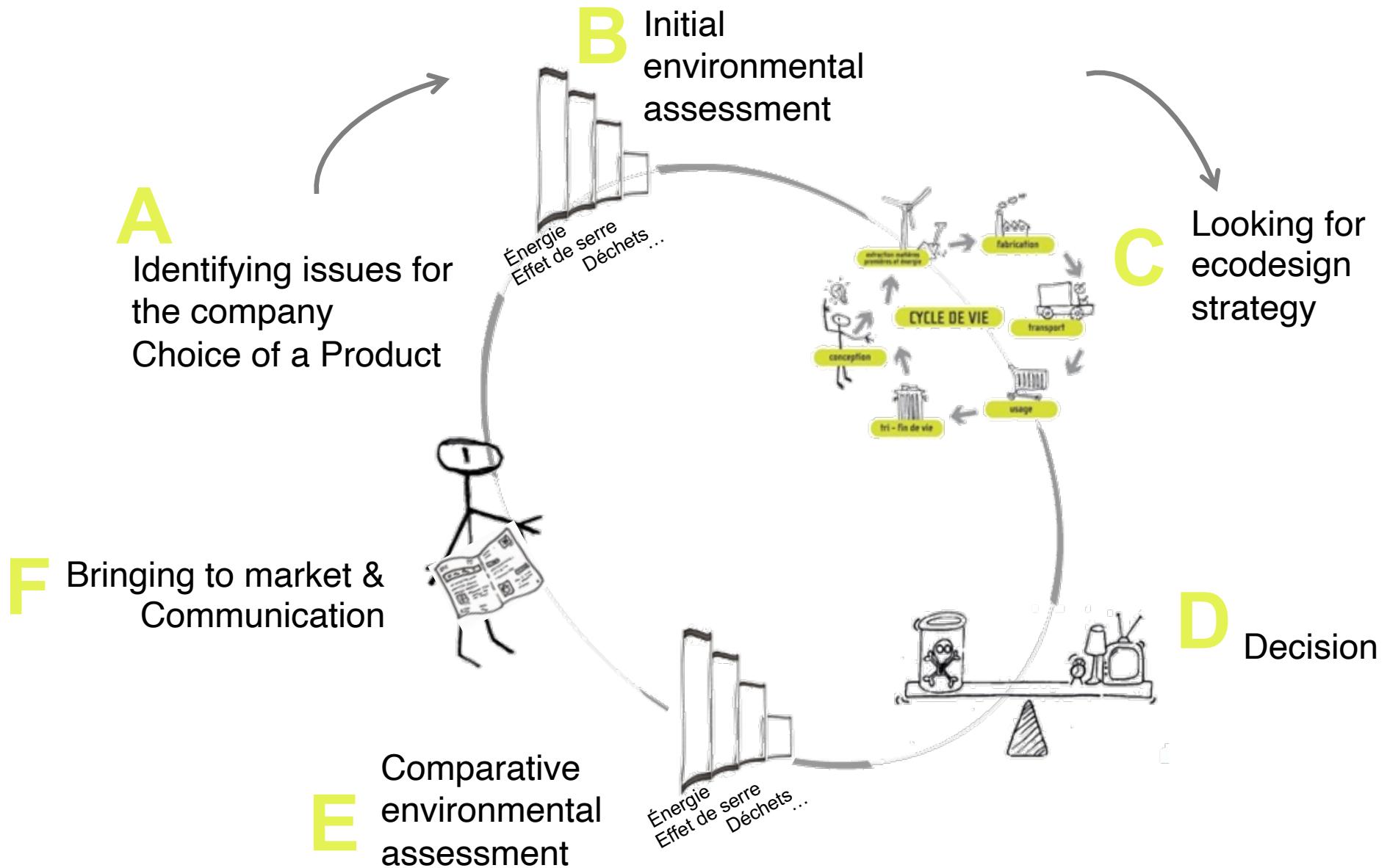
3 Optimization of production techniques

Best Available Technologies (BREF)
Réduire les étapes de production
Diminuer la consommation d'énergie
Choisir des technologies propres
Réduire les déchets
Diminuer l'utilisation de consommables
Choisir des consommables moins polluants

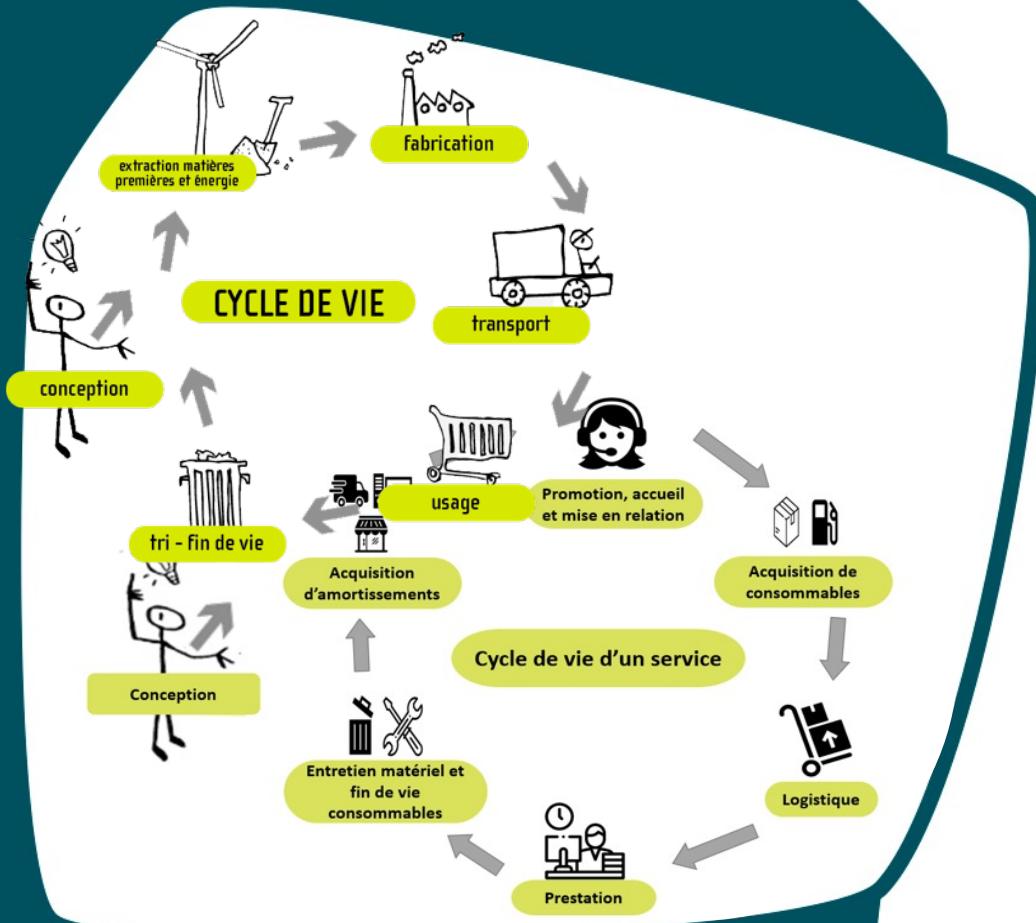
Industrial and territorial ecology

fabrication

The steps of Ecodesign method

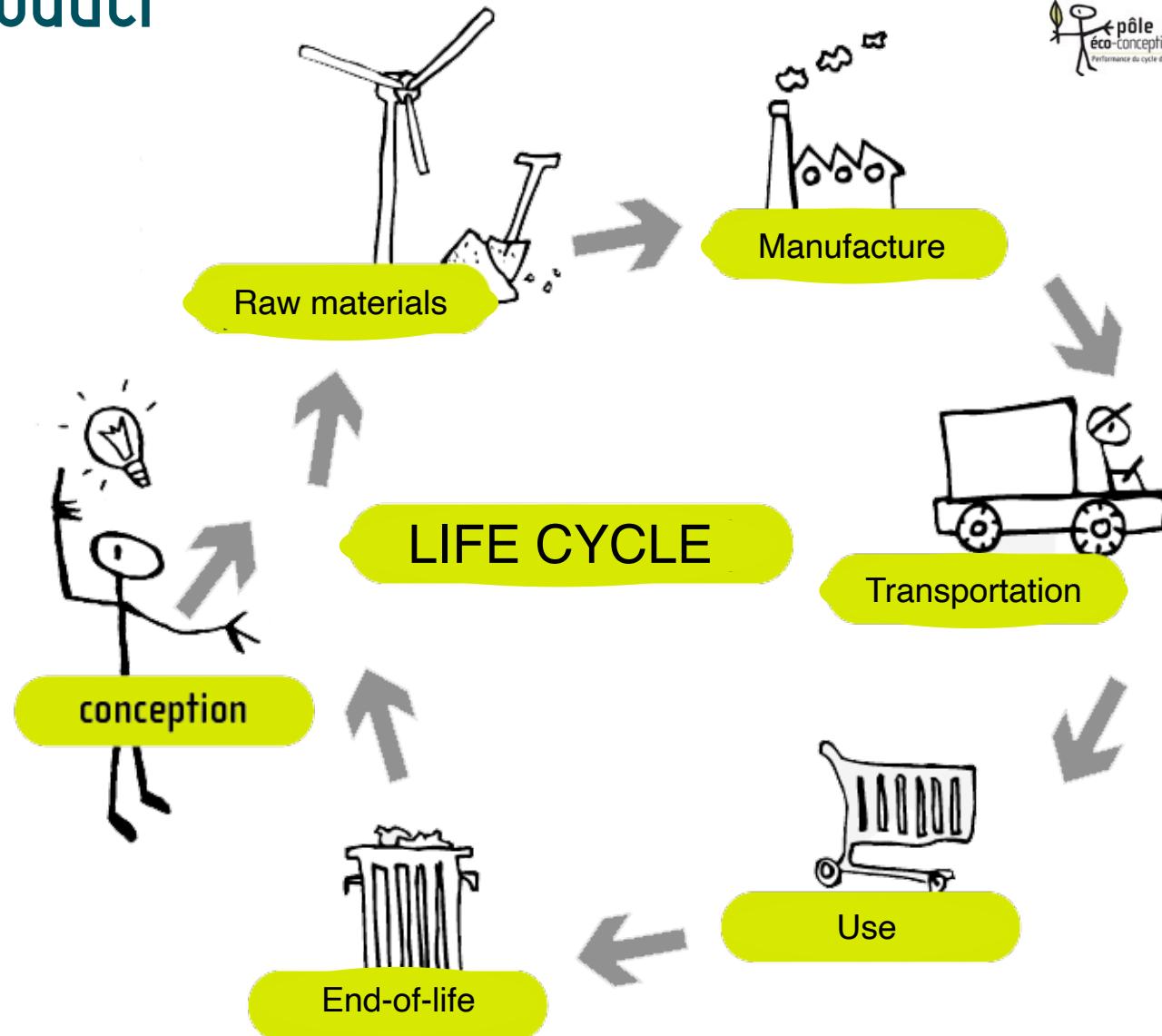


Life Cycle Thinking



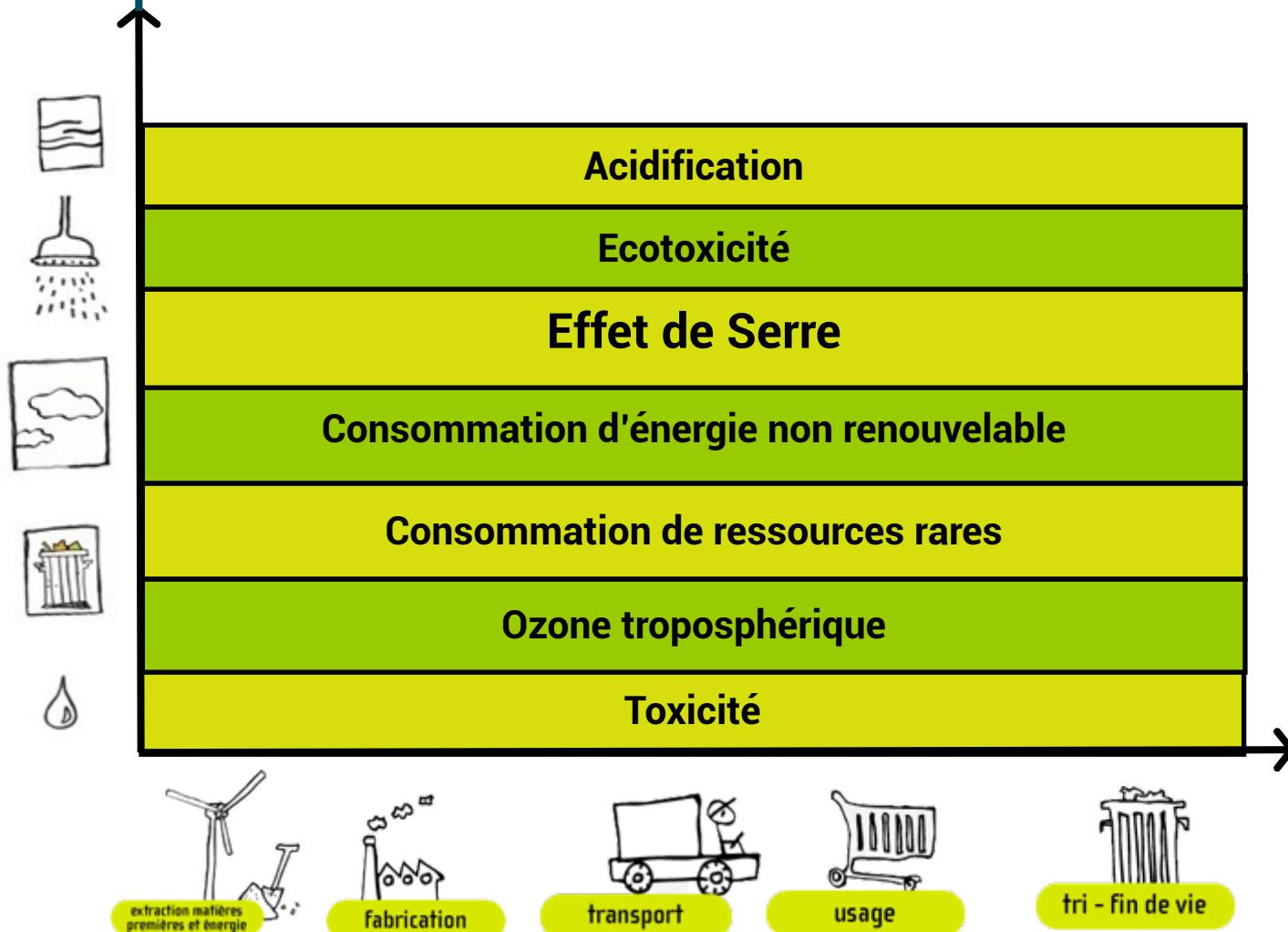


Life cycle of a product





Multi-steps and multi-criteria

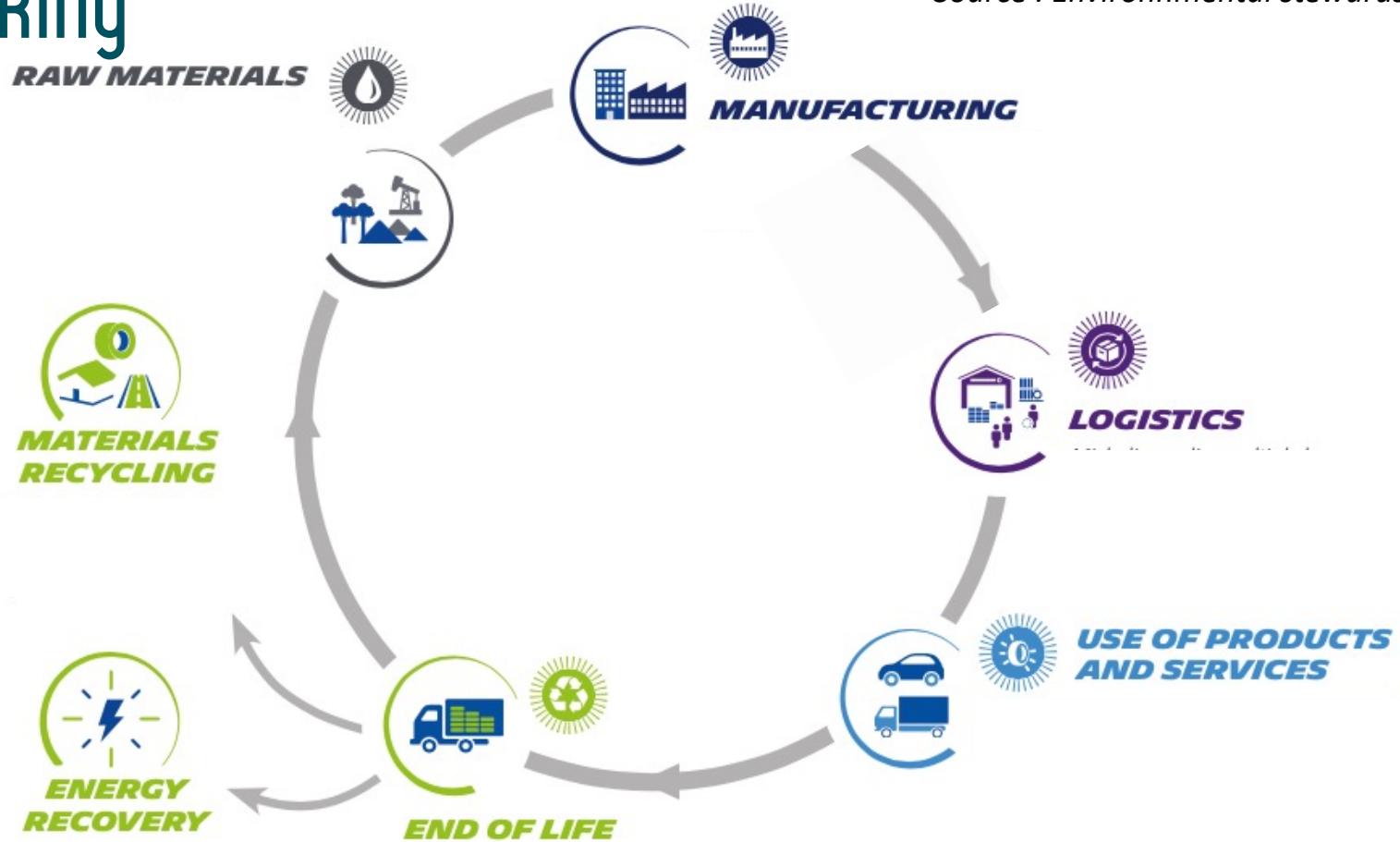


Représentation visuelle du champ d'évaluation en Multi-Critères - Multi-Etapes



Life cycle thinking

Source : Environmental stewardship_V21

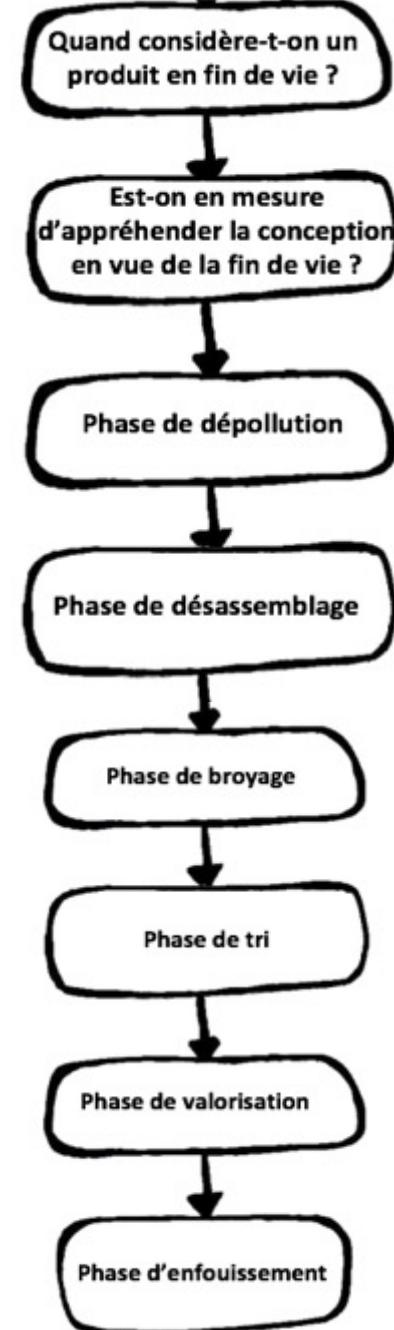
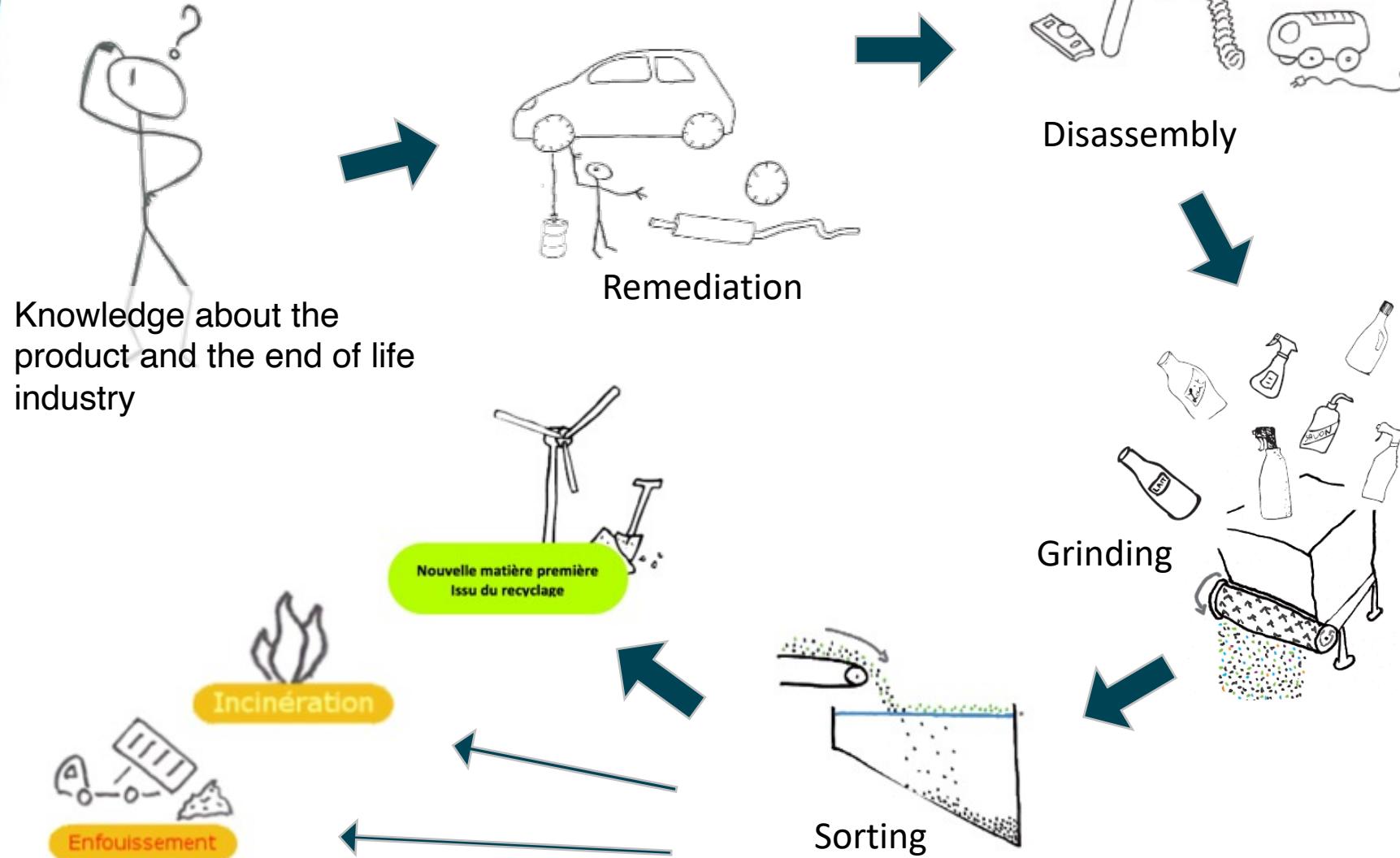


- Black Cycle : work on recycling of tyres → end of life step
- To introduce and use recycled materials in tyres, keeping or enhancing the performance of tyres → use step
- create the value chains with economical and environmental viability

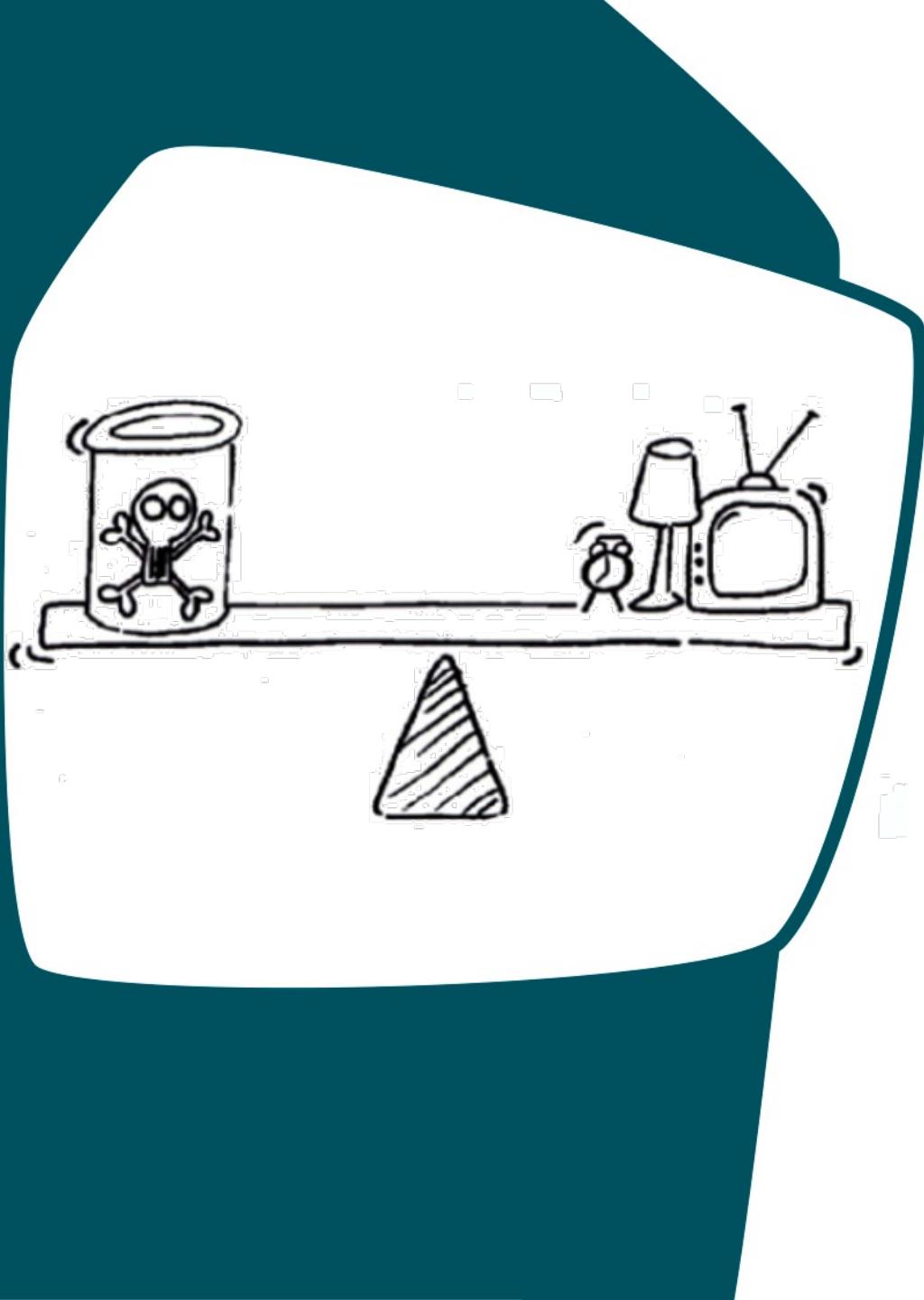


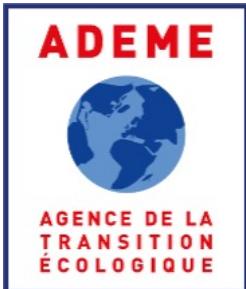
Issues for the recycled materials

Step by step :



Roadblocks and Key success factors





Rendez-vous sur le site du Pôle Eco-conception
pour découvrir notre offre de formations en ligne !

Pôle Eco-conception - Performance du cycle de vie
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#relanceverteformation

