

Colloquium on "Sustainable Degrowth" (Décroissance Soutenable)

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Growth and Rebound Effect

Degrowth and rebound effect

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Soutenable www.decroissance.org

Sustainable Europe

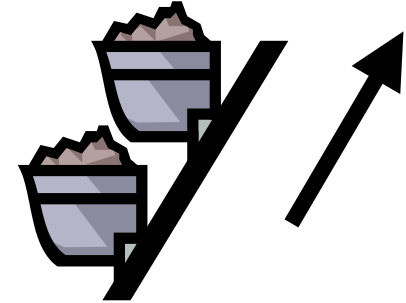
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Plan

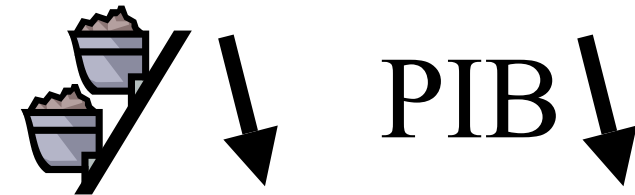
1- Physical/material growth



**2- Economic growth and
"Rebound effect"**



3- Sustainable Degrowth



*Free time for ourselves and others, equity,
health, nature, security, art, culture ...*



1- Physical/material growth

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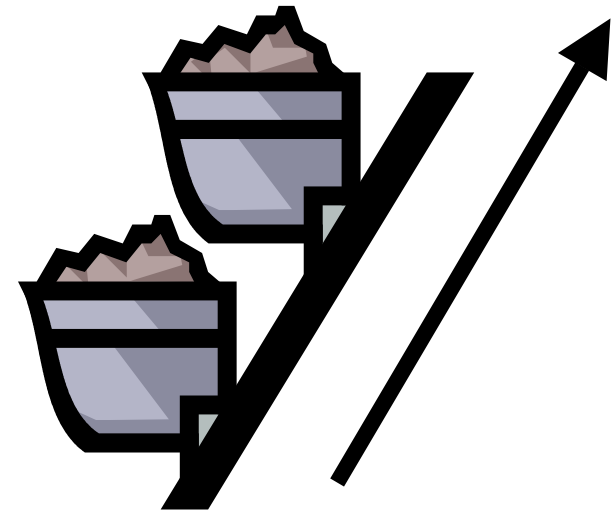
More cars, more houses,
more factories and mines...

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More petrol, more coal,
more electricity, more wood,
more urbanised areas...

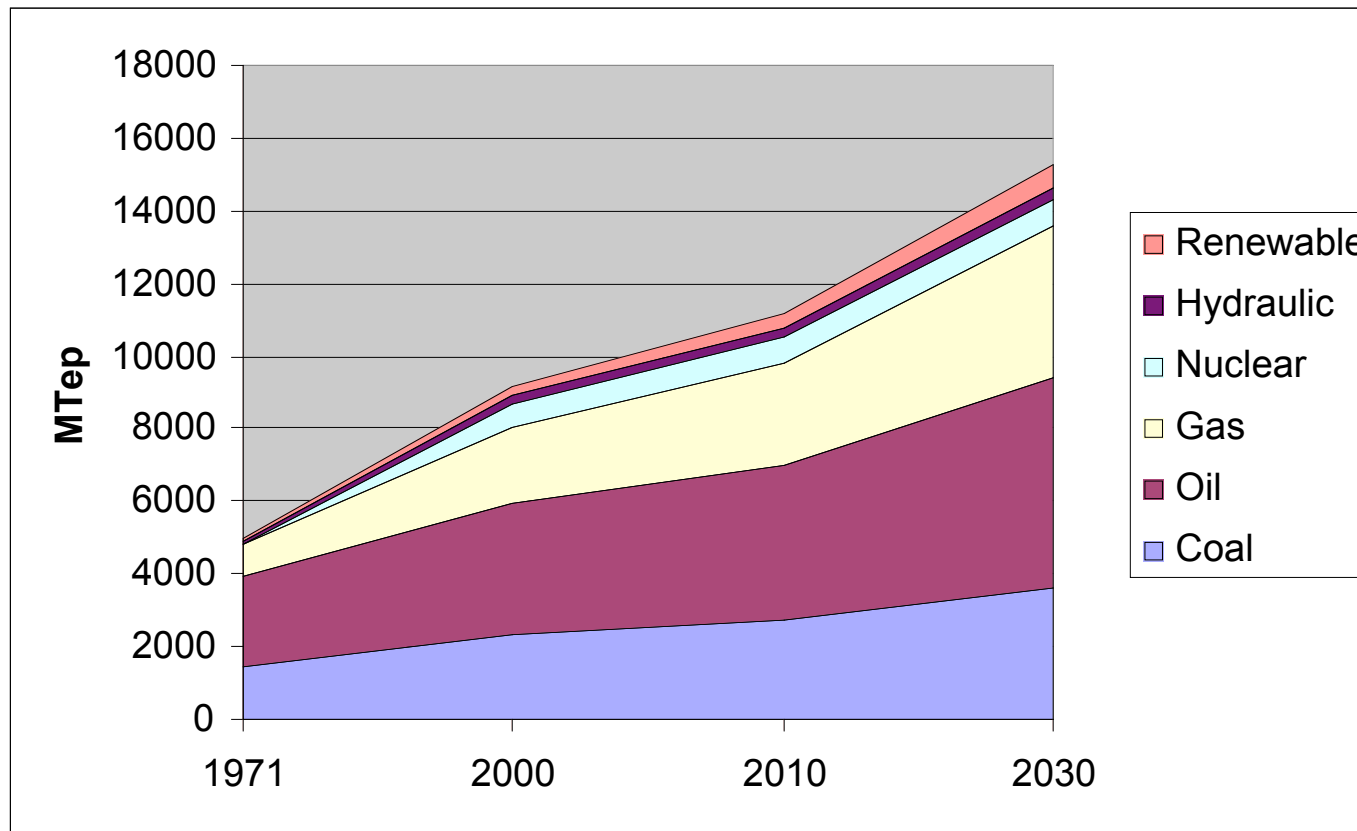
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Increased extraction of natural resources



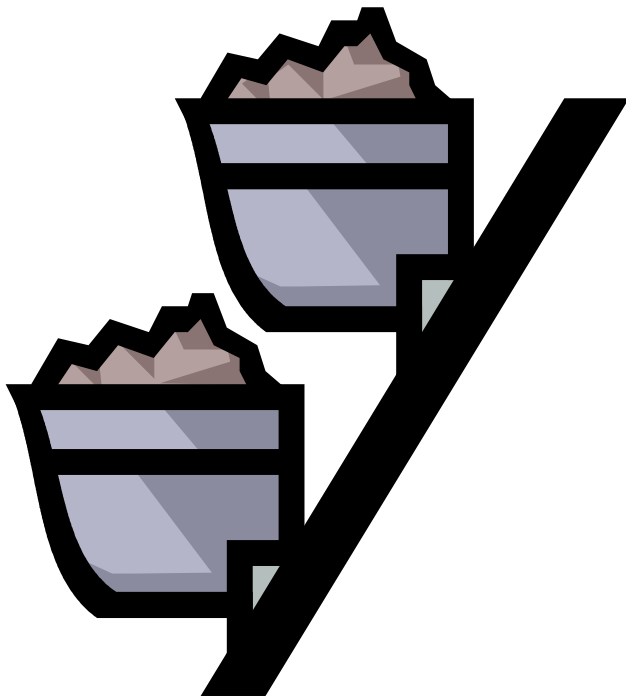
Forecast of energetic growth in the world

International Energy Agency - 2002



Nothing is created; an equal quantity of matter exists both before and after...

Lavoisier



Extraction

=



Waste and pollution

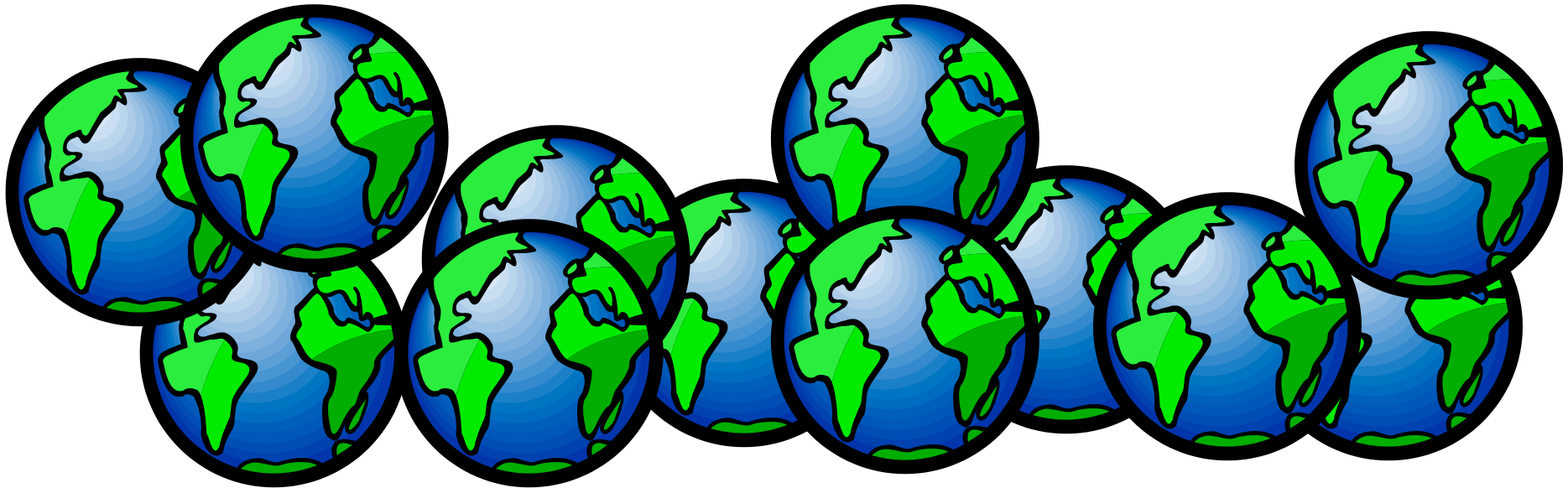
“The true defence of the environment should be centered on the global rate of resource exhaustion (and on the pollution rate linked to it).”

Nicholas Georgescu-Roegen



Realistic hypothesis :
in today's world, we extract
twice two much

- With a fair right to world consumption,
 - and considering demographic growth,
- we will extract 12 times two much in 2050.



With a material growth of 2% per year,
we will extract 30 times two much in 2050.



At an institutional level

- A **factor 2 or 4 reduction** has been mentioned in some political programs e.g. in Austria, Germany, Japan, Sweden and the Netherlands.
- A “**net reduction** of the exploitation of natural resources” is part of the program of the EU.
- **Indicators** of natural resource extraction are developed by Eurostat, UNEP.

2- Economic growth and Rebound Effect

I=PAT (I = ecological impact)

Ehrlich & Holdren (1971)

3 solutions for the material :

- (act on **P** (*Population*) => lower birth rate)
- act on **A** (**Affluence**) => frugality
- act on **T** (**Technology**) => efficiency

A few words of advertising

Faster!! **Cheaper!!**

Safer!!

No effort !!

Ecological!!

Smaller!!
Lighter!!

Better for health

We consume always more :

- more flights,
- more cars, heavier and more powerful, travelling longer distances,
- more heating and more air conditioning in larger living space,
- more exotic products,
- more sealed spaces underneath concrete or asphalt,
- more products and services in economic terms.

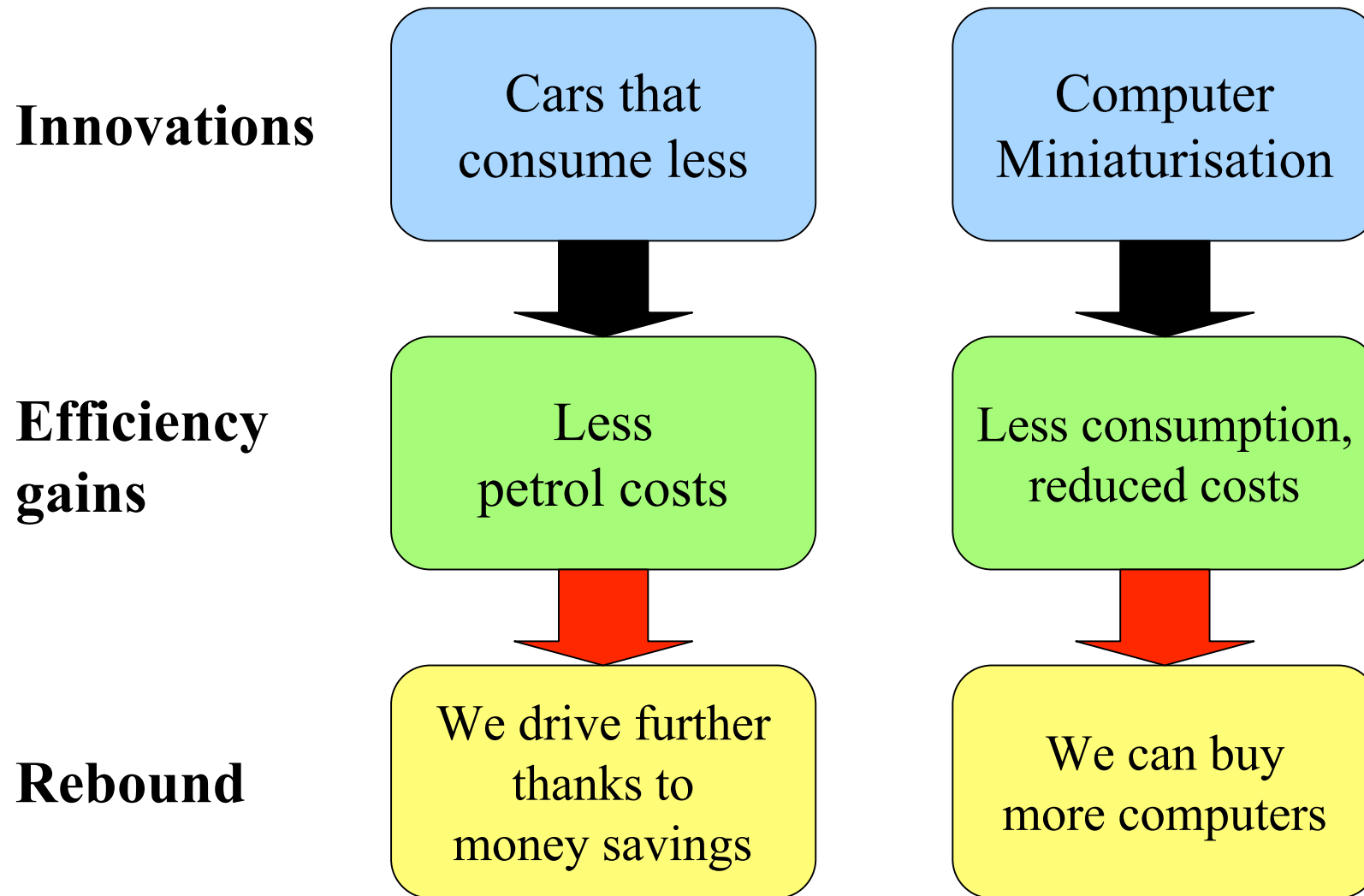
... and impacts increase :

- increase of CO₂ emissions,
- air pollution unresolved,
- decrease of biological diversity,
- higher consumption of
 - spaces
 - materials
 - energies
- cultural standardisation,
- increasing social imbalance.

Two main reasons

- Rebound effect that create an increase of consumptions
- Pollution export

Rebound effect linked to economic efficiency



Growth logics

Innovations

Efficiency gains

Rebound

Acceptable travelling time does not decrease

Acceptable pollution does not decrease

Faster transportation

Recycled paper

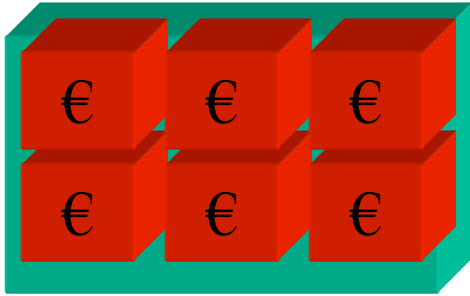
Less time spent per km

Less pollution per sheet

The saved time enables us to travel further

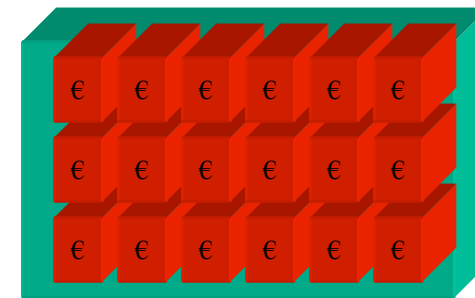
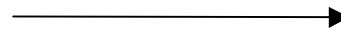
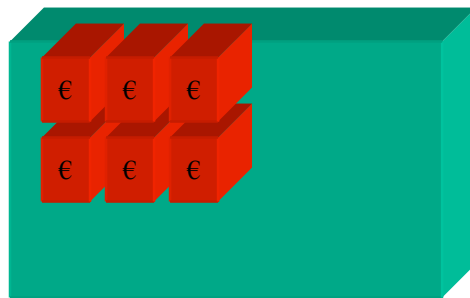
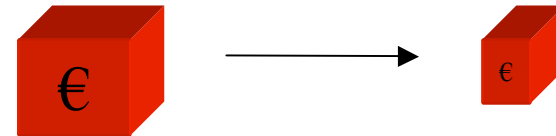
We can consume more paper

Rebound effect



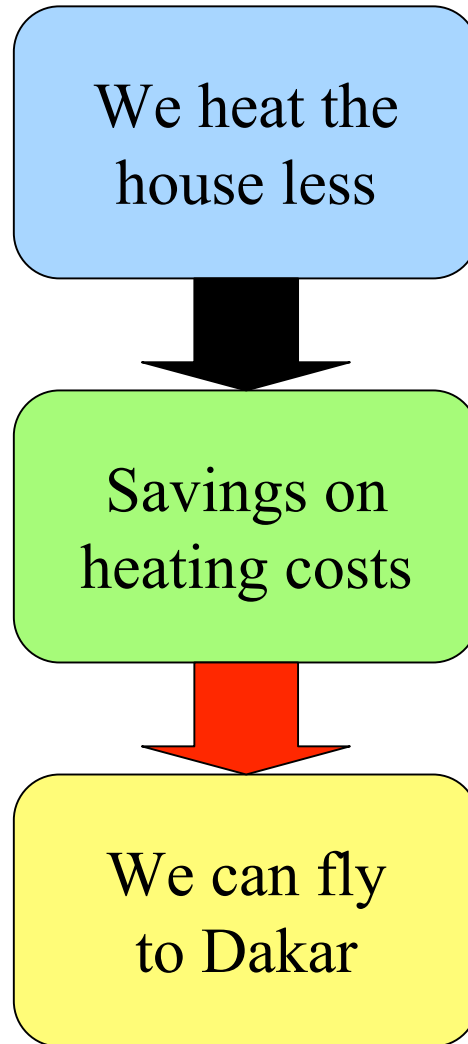
We do not want to consume more because our limits are reached

Product (or service) innovation



Rebound effect: product (or service) innovation enables us to increase our consumption.

Rebound effect linked to frugality



3- Sustainable degrowth

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material *and* economic degrowth

Reducing what reduces our well-being

Solutions for the Sustainable Degrowth

Individual actions:

- Progressive adjusting of consumption limits: "frugal innovation" of lifestyles
- Information research

Collective actions:

- Reduction of primary material extractions at the origin
- Setting consumption limits democratically
- Information on rebound effect on ecological product

« Frugal innovation » of lifestyle

- *adjusting* **revenues** by adjusting paid working hours,
- *adjusting* **living space** to true needs,
- *adjusting* the **time** linked to consumption: taking back our time,
- *adjusting* **ecological consciousness**,
- *adjusting* the acceptable **danger** for ourselves and others,
- *adjusting* the acceptable **noxious** for ourselves and others.



Economical debound effect

Innovation

Reducing our
money needs,
increasing our free
time by working less

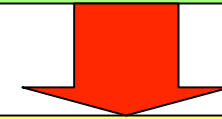
Transportation
that consume
less

**Efficiency
gains**

Less costs

Debound

We need to
work less



Ecological debound effect

Innovation

Reducing
acceptable
pollution

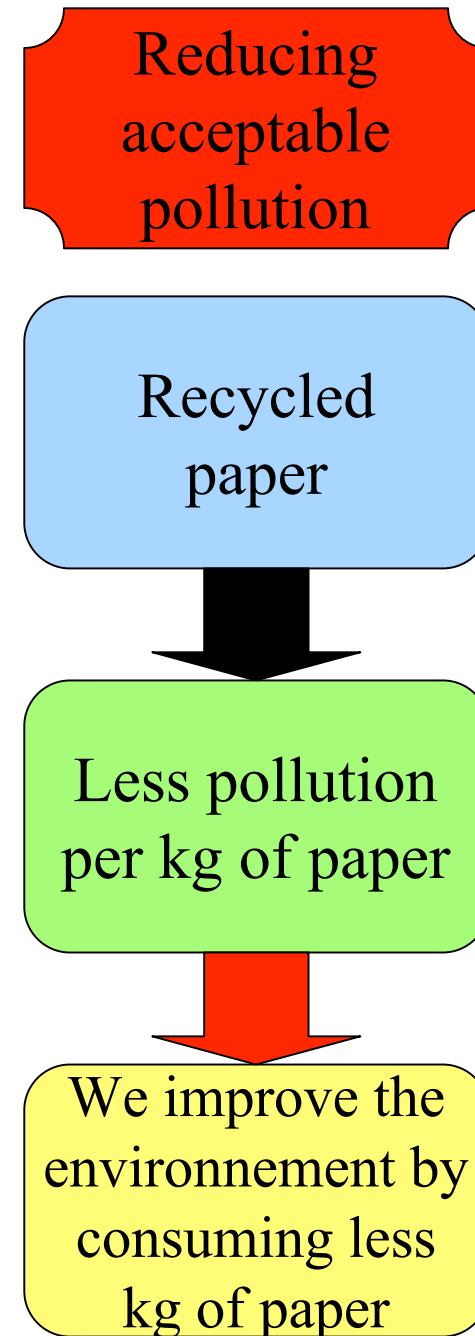
Recycled
paper

**Efficiency
gains**

Less pollution
per kg of paper

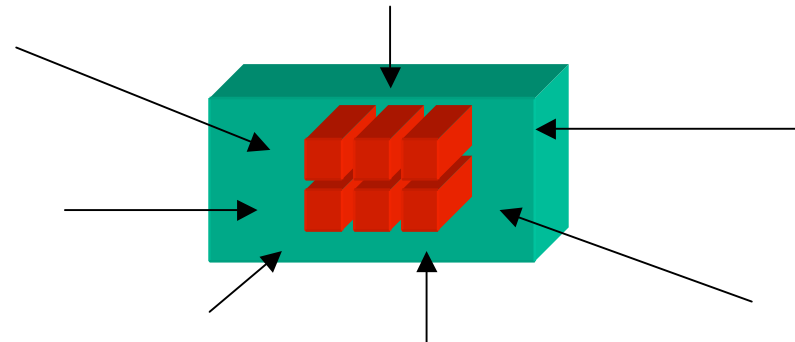
Debound

We improve the
environnement by
consuming less
kg of paper



Limiting extraction at the origin

- Setting of progressive extraction quotas: material input certificate
- Setting progressive importation quotas
- Taxes and removal of subsidies to extraction
- Setting areas protected from extractions or further destructions
- Less excavators
- Less explosives



« Frugal innovation » of products and services

- Designing technical limits to consumption
 - technical limitation of speed ; limitation of roads capacity ; favoring proximity with the internet...
- Favoring the products and activities leading to rebound
 - utilitarian cycling, gardening, hiking, train travelling, sharing of goods, solar heating, packaging with deposit...
- Limiting the products leading to rebound
 - cars and trucks, one-way packaging, TGV, motorways...



Limiting buying capacity:

- redistribution of work (and free-time) as well as revenues,
- ecological taxes,
- reduction of paid working hours.

Degrowth is possible at the local level

Let us imagine and invent a new
economic and social system based
on economic degrowth.