

From Waste Management to Materials Management

François Grosse

**OECD Global Forum on Environment
Mechelen, Belgium
October 26, 2010**



Support achieving political priorities

- 📄 Minimize waste
- 📄 Build a circular economy
- 📄 Develop industry



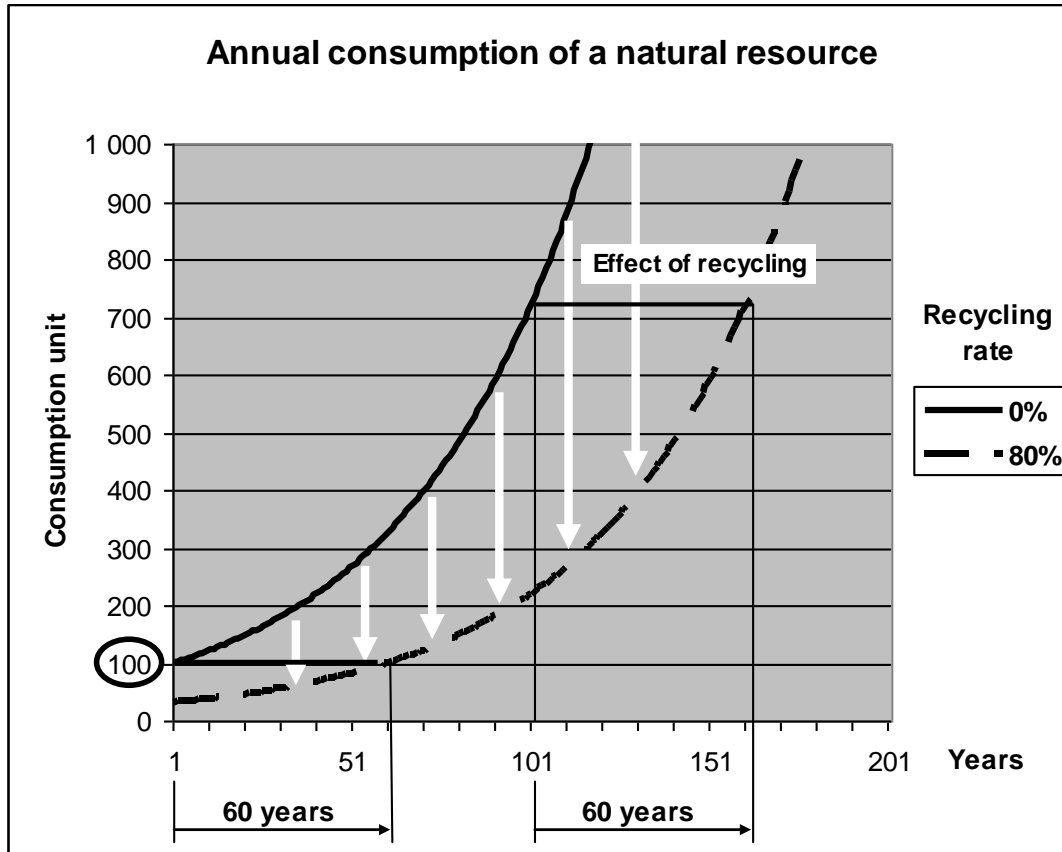
‘A good waste is an avoided waste’
‘Waste from today is the resource of tomorrow’
Based on input from recycling

→ Understand the dynamic material lifecycle
in a growing economy

Understand dynamic lifecycle & resource depletion

- 📄 Resource depletion: because of time frame reduction resulting from current steady growth of material consumption
 - 📄 Is an indicator of those environmental impacts of the material chain which are global and cumulative and due to primary prod^{on}
 - 📄 Ultimate targets should be expressed in terms of **time gain**, not volume reduction
 - 📄 For most metals: exponential trend over several decades in a row
- ➔ How far does recycling contribute to mitigate resource depletion? Under which conditions?

Is recycling the solution?



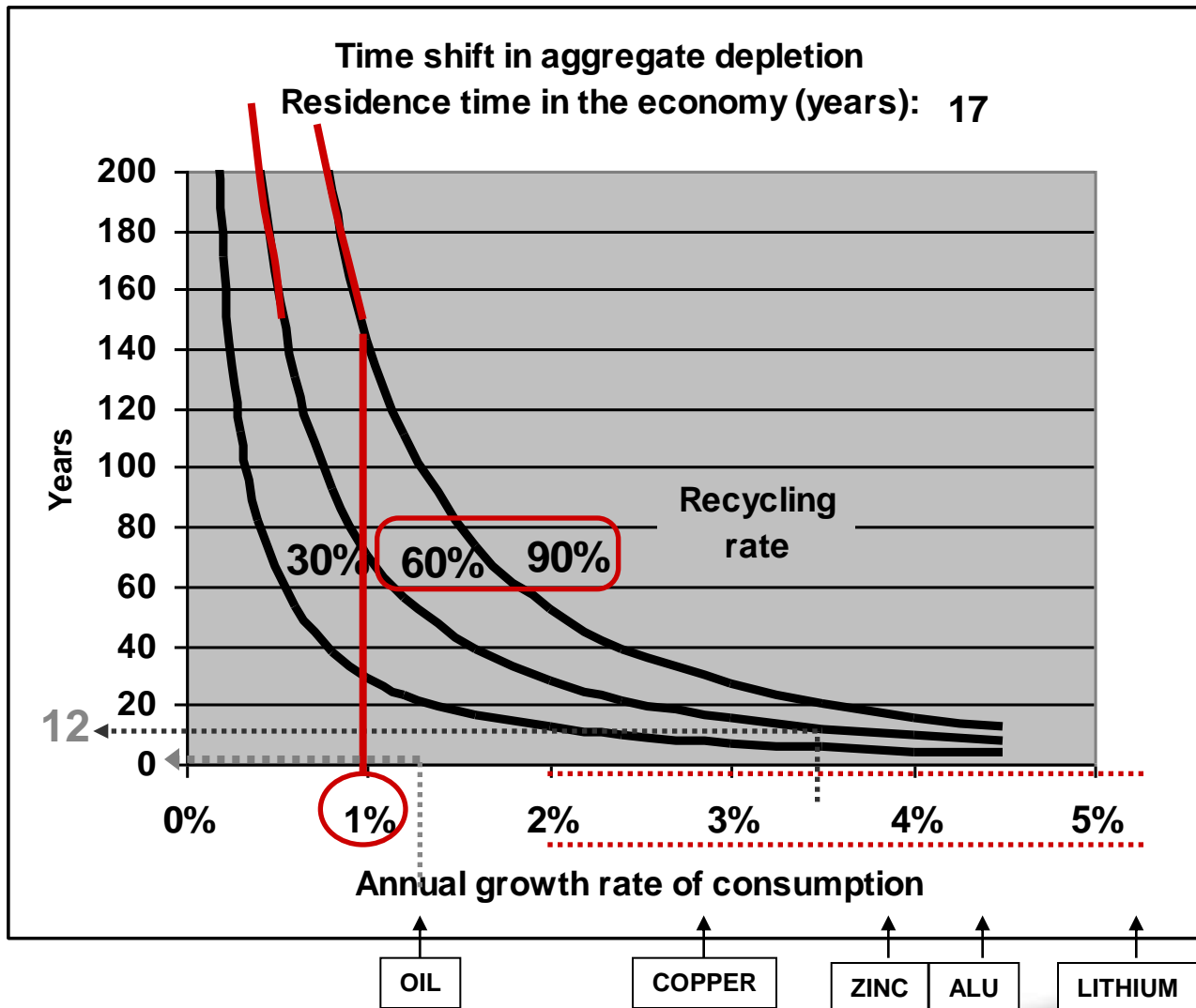
The annual consumption curve of virgin material is flattened by the effect of recycling. But when, after 60 years*, consumption with recycling also overtakes the 100 value point, the dashed curve becomes identical to the other curve, except for a shift of 60 years.

Recycling delays by a given time shift the depletion of the natural resource. Once and for all. **For how long?**

* In this example

Is recycling the solution?

How long do we gain ?



→ Conclusion #1:

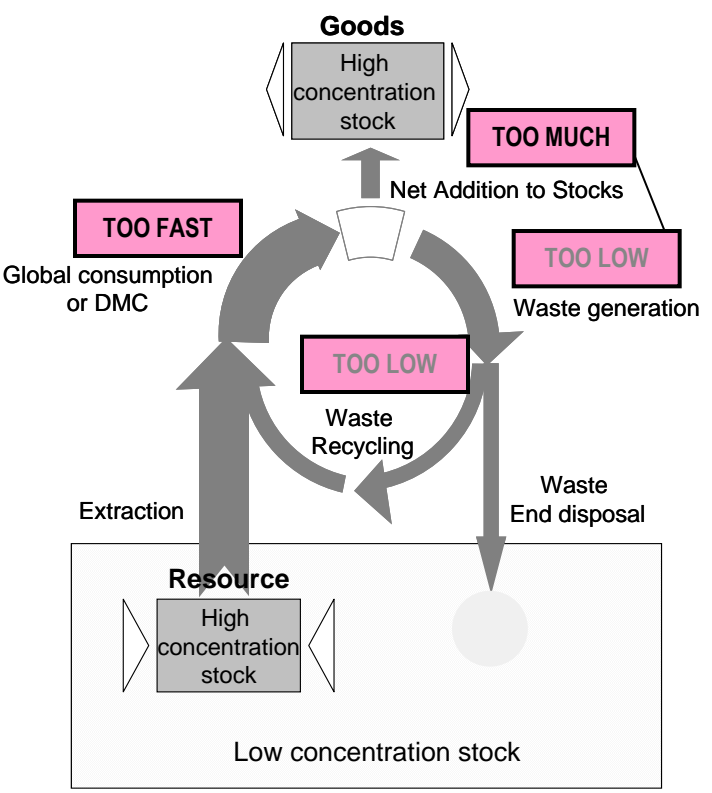
We cannot gain more than 50 years against resource depletion if the consumption growth rate of any given material is **above 2% per year**.

→ Iron / Steel :

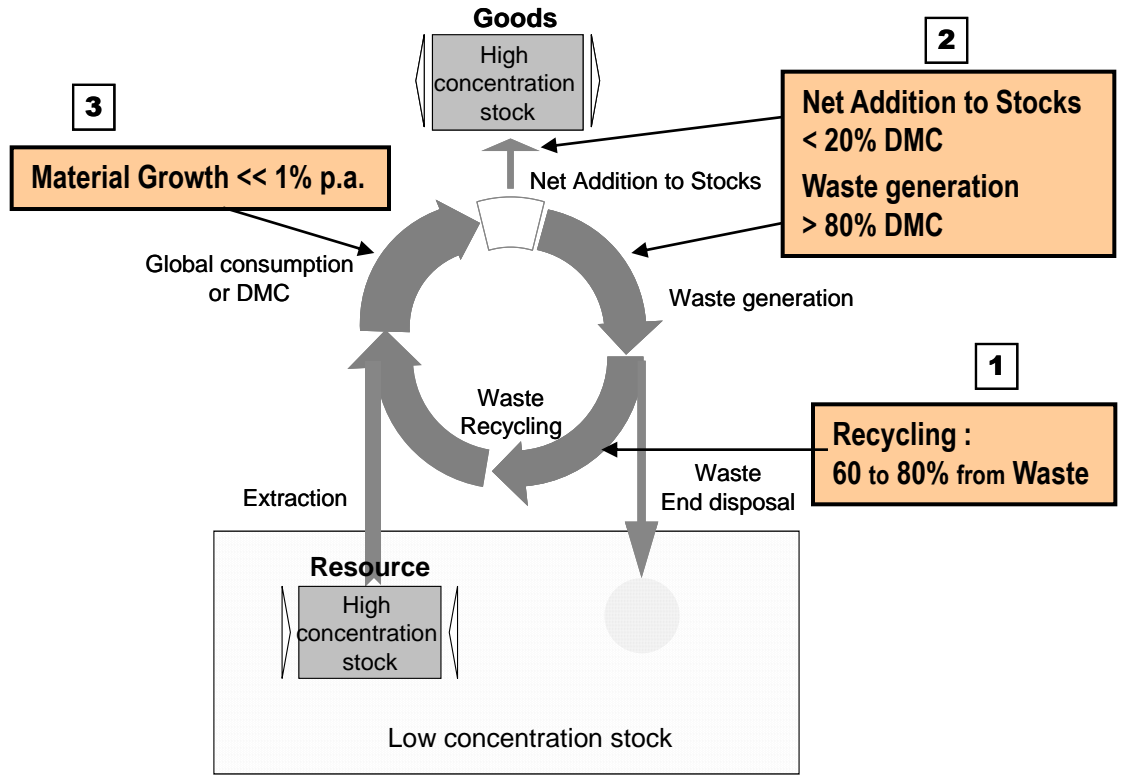
3.5% annual growth rate
62% recycling efficiency rate
offers a **12 year time shift** against depletion
in comparison with no recycling at all.

The resource issue: Three criteria for a sustainable life-cycle

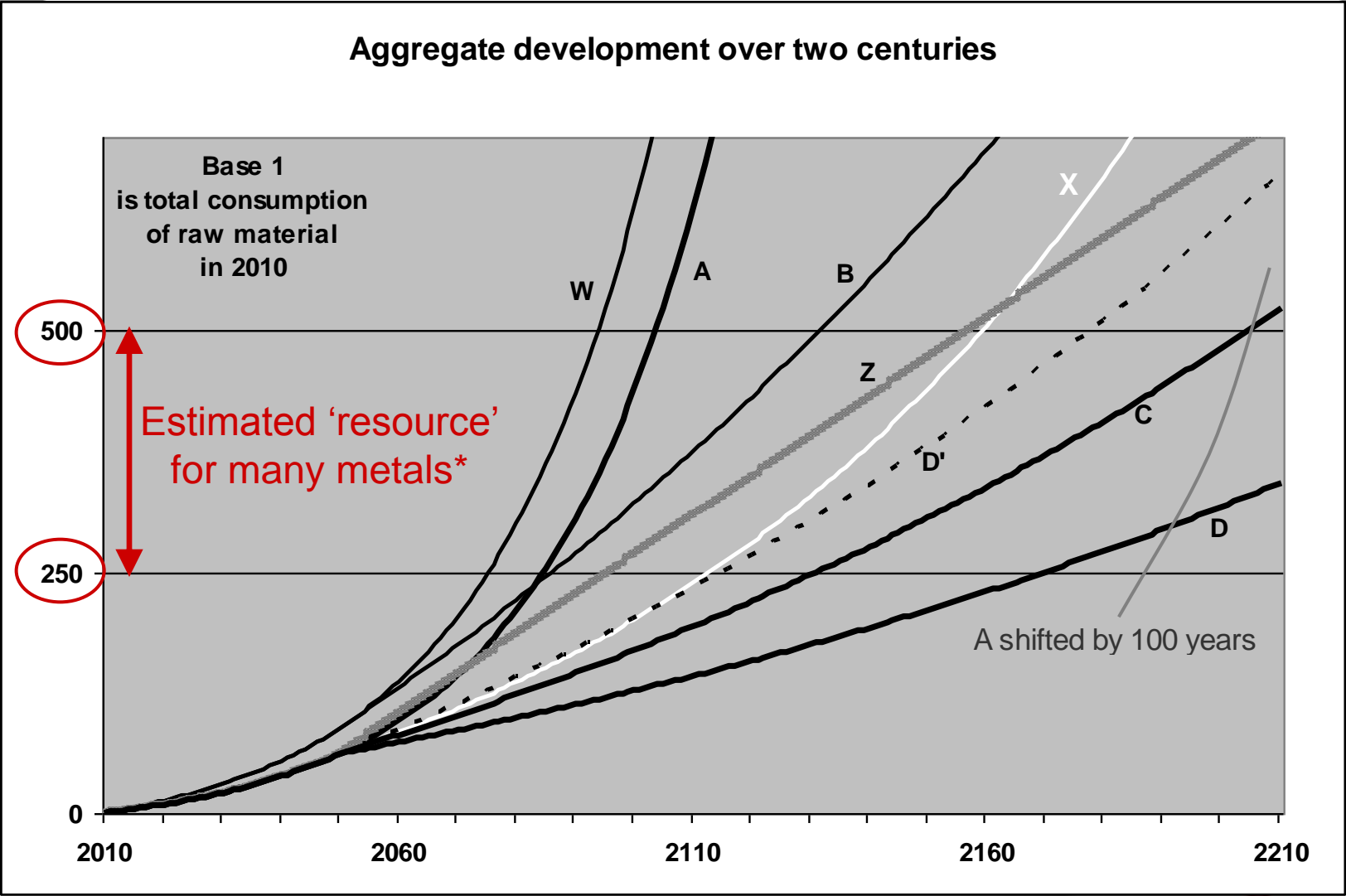
Non-Sustainable



Sustainable life-cycle



The resource issue: Material growth scenarii



* Source: USGS

Change on the long term

Setting proper goals – Some suggestions

- ❏ Offer a vision (see IPCC):
 - ❏ What are the global effects we seek to mitigate?
 - ❏ How do look like alternative scenarios on the long run?
 - ❏ What do we want to achieve at global scale?
- ❏ Goals, priorities and indicators based on LCA, for every material
- ❏ Global and national permanent dashboard, material by material, including evaluating and monitoring the resource sustainability:
 - ❏ DMC growth
 - ❏ NAS to DMC / Waste to DMC
 - ❏ Recycling efficiency rate
- ❏ Clear and consistent policies related to a common vision
 - ❏ From waste policy to materials policy (EU Framework Directive)
 - ❏ Main global challenges do not rely first on waste but on production and consumption

Thank You

François Grosse

Resource: <http://sapiens.revue.org/index906.html>