Importance of strengthening Sustainable Consumption and Production strategies to build a material-efficient society

(seen through the lens of circular economies)

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SDGs and material efficiency

- Material efficiency is threaded through the SDGs, appearing in a number of targets:
 - > SDG 4: Substantially increase water-use efficiency across all sectors
 - > SDG 7: double the global rate of improvement in energy efficiency
 - SDG 8: Improve progressively global resource efficiency in consumption and production
 - >SDG 9: retrofit industries to make them sustainable, with increased resource-use efficiency
 - > SDG 12: Achieve the sustainable management and efficient use of natural resources

Why the stress on material efficiency in the SDGs?

Resource consumption closely tracks GDP growth



Source: International Resource Panel, *Decoupling Natural Resource Use and Environmental Impacts from Economic Growth,* United Nations Environment Programme (UNEP), Nairobi, 2011

The problem we face

- Wealth creation has increased the well-being of billions of us around the planet, and there are billions more waiting to be lifted out of poverty.
- But our model of wealth creation is creating us a series of environmental problems which are now verging on the disastrous.
- Globally, our use of resources is now so enormous that we are beginning to destroy the Earth's ecosystems.
- Climate change is the obvious example, but there are many other serious impacts on our ecosystems.
- Unless we change fundamentally the way we do things, all our efforts to raise the billions still in poverty out of that poverty will just make things worse.

The answer: we need to decouple

International Resource

Panel



Initial response: promote energy & material efficiency

- Governments have been pushing energy efficiency since the first oil crisis in 1973 and material efficiency since the 1990s.
- Many government have over the years established programmes to push, cajole, support companies to become more material and energy efficient. The international community has also been active.
- On the consumption side, many governments have also introduced programmes to make products more energy efficient but also to make them use less water, less detergent and so on.
- Hence the stress on material and energy efficiency in the SDGs.
- It's not been enough. Efficiency has managed to slow down the rate of growth in material consumption but not to stop growth completely.
- Which leads us to circular economies.



Current material flows through our economies

The fundamental flaw in our economic model: flows of material through economies are generally linear



Material flows in a Circular Economy

We should transition to circular economies, where the materials we use are recycled and reused over and over again. This would allow us to really decouple material consumption from growth.



The Four Strategies of a Circular Economy

- But circular economy is not just about recycling. There are really 4 distinct strategies underpinning a circular economy:
 - 1. "Narrowing flows"
 - 2. "Slowing flows down"
 - 3. "Intensifying use of flows"
 - 4. "Closing the loops"

Narrowing flows

- Have less materials circulating in the economy through efficiency improvements.
- Essentially the material and energy efficiency we've been pushing for the last 30-50 years.
- There is still much potential for us to be more efficient in our use of materials and energy.
- This is especially true in the developing countries.



Slowing flows down

Essentially, trying to extend the useful life of products.

We want our products to hang around longer in the economies and go on being used for a longer time.

- This is another form of efficiency: you are squeezing more use out of the same product.
- Net result: less new products would need to be made and so less materials would be circulating in the economy.

How to extend product lifetimes

- Companies (re)design products so that they last longer
- Repair products:
 - Classic repair: the repair shop around the corner (or now on the internet)
 - Preventive maintenance
 - ✓ Remanufacturing
- Second-hand markets









11 Categories



Electrical Apparatus	Preventive Maintenance	PM Frequency						
			West I	An	Every	Every	Change Ont	Pelinber
Battery Systems	Check Voltage Check Voltage Alarm Specific Gravity and Plates		•	•				
Emergency Transfer Schemes	Standby Generatorsrun up Complete Transfer	•	•					
Main Circuit Breakers	Operational Check Oil Inspection			•	•			
Main Substation Transformers	Temperature & Load Check Oil Inspection		•		•			

Intensifying use of flows

- Another form of efficiency, where we are trying to squeeze more use out of a product.
- This time we do it by sharing products.
 - > Many of the products we own are grossly under-utilized
- Two ways we can increase sharing:
 - True sharing: "I own something and we use it together or I lend it to you"
 - "product-service economy": "I own something and I lend out its service to you for a fee"



True sharing

- Sharing has always existed. But traditionally you only shared with people you knew and trusted.
- Now we have the online "sharing economy".
- The internet has created mechanisms which allow you to share with someone you don't know but you feel you can trust.
- Potentially, massively increases the pool of people each of us will accept to share with and so massively increases the positive environmental impacts of sharing.
- Car-pooling is a modern example of true sharing.



Product-Service Economy

- Again, this has always existed, e.g., taxis
- Like true sharing, the internet has massively increased the supply of such services and severely disrupted existing markets. e.g., internet has allowed different types of taxi services to spring up:
 - > Car sharing schemes you are your own taxi driver
 - Uber and Uber-like schemes where people who own a car and have spare time can use that time to be part-time taxi drivers.



Closing the loops

- When products do finally come to the end of their useful life, when you've wrung every last drop of use out of them, the materials locked up in them are recycled and reused to make new products.
- Note: this should be the last strategy applied to a product, when all the other four strategies – make it more efficiently and make it run more efficiently, intensify its use, and extend its lifetime – have been played out.





Promoting the 4 strategies at policy level

- Have governments been promoting the 4 strategies? Yes and No
- Governments have been pushing energy and material efficiency for 40 years or so.
- Governments have also been pushing recycling for perhaps 30 years.
- Only quite recently have governments started promoting the second strategy, extending product lifetimes.
 - Governments have encouraged the design of products with longer lifetimes through green procurement or ecolabels
 - There has been a recent spate of policy activity around repair, trying to make repair an easier option for consumers to choose.
 - > Recently, policies have also been adopted to push for longer product lifetimes.
 - > But, only limited government efforts to promote second-hand markets.
- Governments have done little to promote the third strategy, the shared economy to intensify
 product use. In fact, governments are currently struggling to regulate the shared economy rather
 than to promote it.

Transitioning to a circular economy

- Transitioning a country to a circular economy implies a radical overhaul of the economy.
- To make this transition possible, we need:
 - > A strategic decision by government to make the transition;
 - > The development of a whole-of-government plan to get there;
 - > Implementation of the plan across the whole of government.
- For those interested, the Ellen MacArthur Foundation devoted to the cause of circular economies – has produced a report entitled "A Toolkit for Policymakers": a step-by-step manual for any country wishing to transition to a circular economy.
- You can also study what the Netherlands is doing. The government there has committed to having a fully circular economy by the year 2050, and is in the process of implementing that commitment.



A Circular Economy in the Netherlands by 2050



THANK YOU FOR YOUR ATTENTION!

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