

1. Why is this worth doing?

In the 20th century the world population grew 4 times and economic output 40 times. We multiplied our fossil fuel use by 16, our fishing activities by 35 and our water use by 9.

Every year economic activity in the OECD requires the extraction of more than 20 tonnes of material per capita and this amount is continuing to increase with GDP (even though some relative decoupling appears to have occurred) – the rest of the world is on an even steeper growth path, albeit starting from a lower base (about 7 tons per capita).

About 4 billion tons of waste are being collected every year – but this does not include some of the heaviest stuff, ie construction, agricultural and mining wastes). At the minimum, there is thus one ton of waste generated for every inhabitant, but probably this is closer to 2 or 3, and this needs to be either reused, recycled or disposed in a way that is safe for people and the environment.

But the amount of material is not necessarily a problem in itself. Many of the heaviest materials, such as sand, gravel, limestone, are not particularly worrisome as they are inert. But some materials either are a concern because they are toxic if dumped into the environment, or because significant resources need to be used and emissions generated to produce them. Accidental spills, such as in the Gulf of Mexico, the scale of which was unprecedented, or the terrible recent spill of red mud in Hungary, remind us of this reality.

But most impacts of material production are less publicized. For example, the carbon footprint of a ton of primary copper can be as high as 7 tons – ie seven tons of CO₂ is emitted for every ton of copper that is produced¹, and the water footprint in some mines is 70m³ per ton of primary copper².

It is clear: with population projected to increase to 9 billion by 2050 (almost a 50% increase over current levels), all aspiring to ‘middle class’ consumption levels, we have to find new ways to grow and work towards the decoupling of environmental impacts in order to avert the depletion of resource stocks and the degradation of environmental quality.

2. What should we be avoiding?

- In many ways, SMM seeks to be a grand unifying theory of materials, trying to encompass within its folds a whole raft of paradigms that policy makers have used to address separate parts or segments of the production and consumption cycles (eg life cycle analysis, 3Rs, etc).

¹ http://www.minecost.com/GHG_Web.pdf

² Codelco, 2009 Sustainability Report (<http://www.codelco.cl/english/desarrollo/reporte/2009/pdf/report.pdf>)

- This is both a strength and a weakness from a public policy perspective. While it is always important to take a holistic approach to policy development and implementation, expanding SMM to be so very broad can reduce the ability to make it practical.
- Hence we do not want to stay in the realm of general statements and admonitions to do better, and repeated calls for an integrated approach to materials management do not really take us further in the policy world.
- However moving from the broad to the specific is challenging when we think about the range of public policies that are already in place to manage almost all environmental aspects of the supply chain. What is the role of further public policy intervention that we think is required to move us towards SMM?

3. What is the value-added of SMM in terms of public policy?

- SMM makes huge sense in the business world where such issues make a difference to the bottom line. But what about for public policy? It is less clear where and how public policy interventions can implement SMM as a practical policy tool, beyond the policy interventions we already have in place.
- One way to think about this is through the supply chain and how incentives for consumers and producers to behave sustainably are passed up and down the chain. In a first best world, the environmental externalities of production and consumption would be correctly priced, or corrected through command and control regulation, and the system would work fluidly to ensure that materials are sustainably managed.
- But we live in a world of second best where incentives may not necessarily be passed effectively along the supply chain and there are breaks in the chain. This is especially the case, for example, when we think about the opposite ends of the supply chain – product development and manufacture and end-of-life management of products. It is only relatively recently that cradle to grave concepts have been regarded as a key component of company responsibilities. And what about when the supply chain is globalised?
- So the challenge in ensuring that SMM provides value-added to policy makers is to identify where in the supply chain interventions need to be made to correct market and regulatory failures, and how best to intervene (ensuring environmental effectiveness and economic efficiency). All this in a globalised world where supply chains stretch across continents.
- So, do we need an SMM framework and why? Do the existing policy mixes need to be supplemented? How is this to be achieved and what are the net benefits to society from such interventions? What can the OECD do to provide guidance on how to operationalise the SMM concept. Answers to these questions will be explored in this Global Forum and they will help ensure that policy makers in OECD and non-OECD countries focus on developing, refining and implementing policies that address concerns over environmental sustainability from materials use.