



**Friends of
the Earth
Europe**

Transcript: Responsible or Irresponsible? Europe's resource use and its impacts

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European Parliament, Room P4B001

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DAY 1: 8th November 2011

Magda Stoczkiewicz – Director, Friends of the Earth Europe

Living among an abundance of resources is a privilege, but only a few of us are fortunate enough to live in such a way. Developed nations, including those in Europe, import most of the resources we consume. But are those resources being used responsibly and is it fair towards the other nations, and future generations? This conference of Friends of the Earth Europe, on resources, aims to be a forum for open discussion about the sustainability of our resource use and the impact it has outside European borders.

The Commission's Roadmap to Resource-efficient Europe has put the resource agenda prominently on the table. A few decades ago, Friends of the Earth Europe championed the term 'environmental space', a concept that embraces both planetary limitations and equity of sharing resources within, and between, generations. The concept is based on understanding and accepting that there are limits to the environmental pressure that the earth's ecosystem can handle without irreversible damage being caused. But it also limits the amount we can consume in Europe if we are to share the earth and its resources with other parts of the world.

But, what are those limits? And how can we design policies that ensure Europe does not live in excess of its environmental space? The overconsumption of developed nations, including those in Europe, is the major cause of many of the current environmental problems such as climate change, water scarcity, or biodiversity loss. We have policies that try to deal with the consequences of our overconsumption of resources but so far there has been no concrete policy aimed at tackling the root cause, and there has been little work done to develop a clear understanding of what Europe's environmental space is, and whether we are consuming the world's resources responsibly or irresponsibly.

Previous research by Friends of the Earth Europe has revealed that Europe is the continent that imports the largest quantities of resources from outside of its boundaries to satisfy our level of consumption. We have also researched the use of specific strategic resources such as land, and the result has always been that Europe is a net importer of resources with little or no consideration for what impact this has on local communities.

Last week we published a report on Europe's water footprint and how much water is used for the production of the goods that we consume. The water footprint of a t-shirt is 2,700 litres, yet many of us do not realise that discarding a t-shirt is actually throwing water away. Equally, a big industry, bottled water, brings benefits to few, but not many know that producing one litre of bottled water takes 9 litres of water in the bottling production. We still have bottled water here; many of you know that in Belgium, it is impossible to get tap water in restaurants.

On top of that, Europe is a wasteful society. In total, about 6 tonnes of waste are generated by an average European every year. To give you a magnitude, this room would not fit one tonne, and we are talking about six rooms like that per average citizen a year. So, origin changes in the way the economy manages resources are required. We have been operating above the carrying capacity of nature without safeguarding the services that ecosystems provide to us and to the future generations. We cannot continue consuming the way we do at the moment.

This conference aims to discuss the EU use of resources with the ultimate goal being to contribute to clear policy proposals. Improving Europe's resource use is not only a necessity, but also an opportunity to improve the state of the environment, have a positive social impact and boost the competitiveness of our economy.

SESSION 1: How responsible is Europe's resource consumption?

Janez Potočnik – European Commissioner for Environment

Over the last month, I undertook to hammering the message of resource efficiency. We have fought our way through labyrinths of economic and policy analysis, case studies, data, positions and oppositions, credible and

incredible testimonies of facts we have already felt in our bones; yet, we are not on a sustainable path and the resources underpinning our present and future wellbeing are endangered. That we have the choice, whether we change or, to be changed; that we need our generation awake to see the threats of unsustainable resource use and the opportunities the necessary transformation can bring; and, that we should not be deterred by the scale of the challenge.

Most of the time, when I speak to businesses, NGOs or public authorities, I am glad to find that the message of resource efficiency has actually arrived before the messenger. That we have a compelling story to tell and that we share the same sense of urgency. Many progressive businesses are already turning this pressure into opportunities.

What are the challenges? By 2050, demand for food, feed and fibre is forecast to increase by 70%. And yet, 60% of the ecosystems underpinning these resources are currently degraded. Increased resource price volatility threatens economic and social stability. 87% of European Union companies expect rising resource prices in the next 5 years and material costs making up more than 50% of total costs in manufacturing industries, compared to less than 20% for labour.

It is clear that we need to apply the same ingenuity and innovation to improving our resource productivity now as we did to improving our labour productivity in the past. We cannot reproduce the great acceleration of the 20th century, when our economic output and resources grew much faster than the population at the expense of our natural capital. The business as usual scenario tells us that we will need three times more resources by 2050, a base which threatens to break the boundaries of the planet. So, we need to change.

This trans-present, even if it is a cliché I hate to use, presents both challenges and opportunities. The Resource Efficiency Agenda was built on a simple concept: that our economy and wellbeing should grow while our resource use and its environmental impacts decrease, ensuring a safe operating space for our countries, companies and families today and of course in the years to come. But, the devil is in the detail – how to overcome the tangible and intangible barriers, the lock that locks the economy, businesses and consumers into existing unsustainable patterns? How to broaden the short-term horizons that dominate decision making? How to induce major innovation breakthroughs that will be needed in some sectors? These are hurdles that policy makers, businesses and NGOs should work to overcome together.

Rising commodity prices are an important indicator, but not a solution in itself. There are a number of market failures that we need to fix: prices that do not reflect the scarcity of environmental impacts, lack of property rights, lack of properly functioning markets, for instance for fish, for ecosystems. We need to change the energy we use to power our economy to warm, or cool, our homes and to fuel our vehicles; the agriculture we use to feed ourselves; the way we construct our buildings; the transport systems that move us from a to b and the industries that make the products we rely upon. This is why resource efficiency is part of the European Strategy for Structural Economic Reform, the so-called Europe 20-20. It is essential both for our longer term competitiveness and also for our sustainable growth.

With Resource efficiency Roadmap we are seeking positive engagement towards a shared vision of sustainability, which is, *'by 2050, the EU will have grown in a way that respects resource constraints and scarcity of our planet, our economy will be competitive and inclusive, and provide a high standard of living at a far lower environmental cost. Resources will be sustainably managed, climate change milestones will have been reached and biodiversity and its ecosystem services will have been protected and substantially restored'*.

To make this vision become a reality, the Roadmap sets out milestones that need to be reached by 2020. The focus is on three areas of our lives: where we live; what we eat; and how we move around. Three areas that together account for up to 80% of the impact of our resource use. The Roadmap built on many existing instruments, from waste legislation to green public procurement, from research programmes to ecodesign. Then, there are those that are new. For example, on sustainable food, buildings and land use, for the first time it puts this in a coherent framework, aiming to guide policy and business decisions. And for the first time it integrates them into the wider story of our Structural Economic Programme. This, I dare to say, is an important achievement.

I also clearly understand that the main question now turns to be how the Roadmap will be implemented. I am talking for example about striving to eliminate virtually all landfill, or to phase out environmentally harmful subsidies, both by 2020, or to move from taxation on labour to environmental taxation. To make it happen, the Roadmap calls for better implementation of existing legislation and for demobilisation of new policy instruments, such as Market Based Instruments. In short, these seek to correct market failures and to get the prices right so that they reflect the true cost and impact of resources and point consumers and producers in the right direction.

One important aspect will be to make sure that technical efficiency gains do not lead to increased consumption, which would erode the benefits of that efficiency. We urgently need to develop means to overcome this so-called rebound effect. That is why instruments on both the supply and demand side are necessary.

On the supply side, a good example is setting benchmarks of environmental performance. The first nine ecodesign measures, adopted under the Ecodesign Directive, will allow yearly savings equivalent to nearly 13% of the present EU electricity consumption. This means that this instrument alone is taking the EU closer to its 2020 energy efficiency target. We need this kind of impact not only for energy efficiency, but for wider resource efficiency.

On the demand side, there are opportunities to make our product policies work better, for example to align the European eco labour, energy labour and making sure that public procurement is based on life-cycle costs, thus creating a larger, more accessible and simplified market for sustainable products. More than 15% of EU GDP that is spent by public authorities should be used to give a boost to innovative resource efficient products and services.

The challenge is certainly global. That is why the Roadmap also looks outside Europe. The economic growth of this century will be most marked in emerging economies, where it has the potential to lift billions out of poverty. But one thing is certain: the approach that worked in the 19th century will fail in the 21st by accelerating the degradation of our already fragile environment and worsening climate change. But the transformation we are internationally pursuing with the concept of green economy does offer opportunities for equal levels of wellbeing. It is an agenda for poverty eradication, not against it.

The Rio +20 Conference will offer an important opportunity to achieve convergence of global views on this and it could mark the start of a global transition to green economy. I sincerely hope we will be smart enough to use it.

As in any economic transformation, there will be winners and there will be losers. For those who are ahead of the curve, it will be an immense opportunity. The winners will be those that are adopting new and innovative business models working along their supply chains, looking for efficiency gains in all aspects of their production and properly valuing all of the natural inputs they depend on. As for the losers, firstly, there will be far fewer if we prepare for the resource constraints of the future in a predictable and controlled way now, rather than wait for disorderly ways later. Second, we will need to make sure that no one is left behind. We need to provide opportunities to those needing new skills, or making sure that food, shelter and energy are always available to those most vulnerable among us. But this can be done in a way that reinforces the transformation, not hinders it.

As regards targets and indicators, more and better results are coming out of the discussions; but, we are not there yet. Therefore, the Roadmap proposes initially to use as lead indicator resource productivity and to follow the state of our natural capital via the state of our dashboard indicators on materials, carbon, water and land, we are determined to get there in a participatory multi-stakeholder process.

The current economic crisis is bringing a lot of hardship especially on those that find themselves without a job, but it also provides unique opportunities for policy reforms needed for sustainable exits from debts and from deficits. That is why we want to integrate resource efficiency into the European Semester.

Immediate priorities are: to eliminate environmentally harmful subsidies, to shift taxation away from labour to environmental taxes and to encourage research and innovation. These are not the goals in themselves – they

should help boosting further the energy and resource efficiency, help fiscal consolidation, and help the economic growth and employment through reduced tax burden on labour. I am particularly keen to explore the potential waste policy has to contribute to meeting a number of our objectives, from greenhouse gas emissions to resource efficient growth.

The European Union budget is another important tool for the transition to the Resource Efficient Sustainable Smart Inclusive Economy. Our approach has been to mainstream resource efficiency, traditional environment protection and climate action priorities into all of the major EU funding instruments, especially cohesion, agriculture, fisheries, research and external aid.

In addition to mainstreaming, the Commission will propose continuing the current dedicated programme for environment and climate, LIFE+, with increased resources. A major innovation there will be the introduction of the so-called integrated projects. These aim at reinforcing the implementation of environmental action plans foreseen in major EU environmental Directives, such as the Habitat or Water Framework Directives. With this, we aim to leverage other EU and private sector funds, to achieve results. I sincerely hope that the final budget will keep at least this level of environmental ambition, not least in the new Common Agricultural Policy.

A lot of work has been done by NGOs, policymakers and business, to announce and prepare the transition to a resource efficient low-carbon economy. We have travelled a long way to be here today, but there is still a lot of work ahead of us to find together the best compass for the future decisions, the most appropriate targets and indicators, to seek and to relentlessly demonstrate the benefits, and thus get the new allies needed to bring this forward. We do not need a green niche; we need to achieve an overall sustainable economic growth. We need to wake up the entire generation. Yes, we have travelled a long way to be here today, yet, with the Roadmap in my hand, I still feel like we are at the beginning of a real journey.

Beata Wyszniowska – Head of Environmental Policy, Polish Presidency

The Roadmap is the first step in Resource Efficiency but is also quite a challenge for the Polish Presidency, for which this is one of the major priorities, as is the development of the position of the Council on the further steps which both the EU and the Member States should undertake in order to make it a reality. This is indeed a very ambitious and comprehensive document touching on the many cross-cutting issues relating to the different branches of governments, NGOs, consumers and producers because this should be an inclusive process in which everyone has to take part in order to make it a reality.

The Roadmap shows a different approach to environmental protection, which is that we should stop thinking only about the remediation of environmental problems, but should start thinking on the prevention of those issues becoming problems. That's why cooperation between different sectors is so crucial and the key to success. This is why it also needs change on different levels and this change should also be in innovation and research because the new approach needs new solutions and new thinking.

The Polish Presidency, based on the Roadmap, prepares Council conclusions which should be adopted by the environmental ministers in December but also, thinking about integration and mainstreaming into all areas of life, we have involved the Competition Council because it's important not only to set certain environmental requirements but also to take into consideration how the different approach could influence the economy and how it could help the economy to achieve sustainable growth.

In the Council conclusions we would like to focus on those horizontal issues. The issue of indicators and of the development of indicators which we would like to invite the Commission to progress on as much as possible, which will enable the Member States and the EU as a whole to monitor in which direction we are moving and whether this direction is positive or negative, to define certain trends. That's why the right set of indicators is so important and why they are the priorities for the conclusion.

The other issue is a key issue, on governance and how the process of implementation of the Resource Efficiency Roadmap should be governed and what should be the role of the EU as a whole and what should be the contribution of individual Member States. We hope that those conclusions will accelerate the works of the

EU on Resource Efficiency and we also appreciate that the environmental issues are so much perceived as important that the Resource Efficiency Initiative is one of the seven flagship Initiatives under the Strategy Europe 2020. So it means that we are not this green bubble only, but that the environment is actually a prerequisite for humans to survive in the long term.

Jacqueline McGlade – Executive Director, European Environment Agency

European resource consumption: responsible or irresponsible?

Presentation: http://www.foeeurope.org/sites/default/files/news/McGlade1_European_consumption_-_responsible_or_irresponsible%5B1%5D.pdf

I would like to pick up on the themes already discussed this morning and give a little bit more on what lies behind them. Some of you are probably readers of *The Economist* – I hope that you would have seen this one on the front, ‘Welcome to the Anthropocene’. So, recently the geological communities of the world decided that we have actually entered a new geological era called the Anthropocene. This means in principle that human kind is influencing the planet not as we had in the past, natural phenomena, but where the fingerprint of human activities are very clear.

But I think what was fascinating was The Economist editorial that said ‘When reality is changing faster than theories suggest it should, a certain amount of nervousness is a reasonable response’. I think this really underlines the dilemma that we have, which is the urgency is clearly before us, we have to act within Europe, and also globally, but the question is, are we going to do the right things? What are the right things to be done? And what should Europe do to act responsibly, to in other words play its role as a good steward within the setting of the planetary dynamics?

The Agency tries to reach out across number of spheres and resources and the use of resources is clearly one of them. What we have done in the past year is try to elaborate not only how Europeans live and their impact within the setting of Europe and on the rest of the world, but also to take that message out into schools, and out to the public, because this is not a project that can be delivered inside Brussels, this is a project for the entire European citizenry of 490 million people.

So how do you get that engagement? Well, obviously, they do have to have some factual evidence upon which to act, and through the different reports, whether it’s the State of the Environment Report, in other words, how we consume in Europe, this report was brought out last year as part of the 5 year overview, looking at everything from housing, to food consumption and so on, a very sobering set of statistics I have to say, but all the way through to how we think that countries today inside Europe are interpreting the concepts of Resource Efficiency and Resource Use, a very, very different and variegated picture, something which I think there is a lot of scrutiny, not least because of the enthusiasm with which countries have addressed the overarching issue, but they’ve done it in very different ways; energy efficiency, different ways of taxation, innovation and so on.

So that is really our dilemma. If we just take a look at ourselves and this is a typical family in the UK, if you were to compare this weekly consumption to families from around the world, particularly in the developing world, there is an enormous amount of processed food sitting there. So how do we change that level of consumption, those behavioural responses, to something which is perhaps more sustainable, more meaningful in a planetary setting?

What do Europeans consume? 50% of the world meat output, 15% of world energy output, 25% of world paper – I suspect that Brussels are doing quite a lot towards that. We have a rationale inside Europe that if we have evidence, and we think it is going in the wrong direction we will probably do something about it. The difficulty is, as Thomas Friedman has said, that we live in a hyper-connected world now and what that suggests is that we will never get information quickly enough, to genuinely know whether what we are doing today, is reasonable. And so it is extremely important that we have these long term visions and strategies, that at least set out the direction we are trying to go and creating catalytic areas of policy but also behaviour

implementation, whether its product design or whether it's actually how we deliver our waste; these are really important attractors.

So the Resource Efficiency Roadmap is not, in of itself, going to solve everything but it should be an attractor for all other policies to conform within a setting in which we think we will become a resource-efficient Europe. Can it do that?

Well the trade figures speak against us. At the moment we are one of the largest importers of the world in terms of material flows. Although we do export some things we have a fairly hefty import of fuels and mining products, so we are out there, removing virgin resources from all over the world. These figures are in the State of Environment Report, but they do bear some scrutiny because these are trade statistics, they are data that have come from a past reckoning but they perhaps don't speak to what we are doing today. So there is a need for us to keep very clearly under review just what our consumption patterns are, on a much more rapid basis.

In the past we had a sense, at the beginning of the 20th century, that there is a sort of relationship between population, technology and our kind of affluence. But since the 1950s, over the last 50 years, this great acceleration in affluence is really what is driving our consumption. It is that affluence that really means that we pull on not just one or two things, globally, but all these megatrends, whether they are political, social or economic, are all pulling towards that affluence, that acceleration in which we have huge demands now for resources, for services and for, just basically, things.

Where is it coming from? It isn't only the EU that has a perspective in the next 20-30 years; this is a well understood story. But the characterisation of what it is to be middle class is not so easily understood. In Europe we have a certain setting in which we understand what that middle class aspiration looks like. But in fact, if we look in India or China, the difference between, for example, acquisition of goods in terms of wealth, savings and financial transactions is actually quite different.

One particular item which always comes back to us is car ownership. It's almost become a trend indicator for consumption. What I think is fascinating about car ownership, is that we have in Europe put in place fairly aggressive targets to reduce emissions, we have an aspiration by 2020 to have vehicles coming, in terms of type approval, down to 95g of CO². But actually, what we now understand is the type of approvals for car fleets are nowhere near rigorous enough and we want to look at in-use CO² emissions from our vehicles. In pushing down these borders of where we are going environmentally, we also have to look again at our whole infrastructure of how our industry is evaluating and assessing and doing its business. Cars are just one particular example.

There are many others that are out there and it has already been alluded to – you produce things more efficiently, televisions and so on and so forth, but actually that creates two problems. If we continue on a resource efficiency root we still don't address the fundamental issue of the fact that we are sitting inside a global ecosystem, which provides valuable resources. To give you an idea, humans appropriate already half of the available fresh water in the world and we exploit most of the soil resources available. So we are continuing in a pattern of consumption which resource efficiency may just not address properly. What it will do is, it will tweak the edges, it will take down the overall package but it will not systematically alter what happens between the factory and the consumer, what happens between the idealised product design and when it gets put into use.

When we talk about responsibility, we actually talk about a reengineering of, in a sense, our mind-set and the urgency with which we need to do that is very paramount.

We have had the pleasure of working with all our countries, trying to get behind the scenes of what resource efficiency means, what it looks like. One of the benefits of working in Europe is that you have huge heterogeneity. The difference in definitions is everywhere – not just linguistically, but also in intent; so when you talk about resources in some countries it is materials, when you talk about it in another country it is something completely different. When you talk about resource efficiency, sometimes it's just about housing, or about energy, in others it's a much more widespread phenomenon. That in itself leads to a tremendous potential, because it is possible for countries to contrast and compare what they are doing, within this setting

of Resource Efficiency. The danger is that you've got a hundred good ideas but that they may start to cancel each other out, nevermore so that when we think about innovation.

If you address innovation within the telecoms industry, and you think about a telephone and you talk to someone from Samsung or Nokia, and ask them how innovation is going in your sector, what they will generally tell you is that you have to think of six things. Regarding materials, they have to think, are they available; are they substitutable, particularly rare earths; is a country stockpiling them; what is the price today; is it energy efficient; and is it light. These are assets that are looked at with a very different perspective when you go to different industries, and it's important that we don't just look at innovation in a very homogenous way, because innovation is totally market dependent.

I know that Steve Jobs has always said, 'the consumer doesn't know what they want, so we're going to give it to them' but actually giving them something means that you do a lot more evaluation of what is available in the world market today than has ever happened before. So when we have interventions around innovation, whether it's tax incentives or whatever, it is extremely important to understand the ramifications of those interventions, because economic interventions can themselves cause stockpiling in other parts of the world.

Overall I would say that we have a human phenomenon and a technical phenomenon. The human phenomenon has already been referred to, the Rebound Effect. Part of the consumer psychology is not having something more efficient but having something less, generally, of many things. And that is an idea which we have, which is around households being the unit which are potentially very viable when we look at household consumption, it's how the household itself operates, the people, its mobility and what it uses in its daily metabolism is perhaps something that we also should be looking at.

We genuinely have a perspective where we cannot afford just to do better things with the environment, neither can we afford just to look at the economy in terms of decoupling – this idea of making more efficient use of resources. For example, we've had a discussion recently about the Tobin tax, the idea that when it was first introduced by Tobin it was to slow down the financial transaction rates, to give the economy room to breathe. What we actually need are taxation systems that have obviously moved away from environmentally harmful subsidies, but talk about how we can better understand a way to enable reuse, recycling, the slowing down of the material cycle, so that we have a chance to allow and enable the reuse and recycling technologies to really play their part.

At the other extreme, we have to face up to the fact that human wellbeing, social equity is now an incredibly important element within any aspect of how Europe will operate. It is no good saying that we will end up all paying the same price for resources, when the wealthy essentially have more access to resources, it simply will not fly.

So how do we do that? I think from our perspective we would say, the ultimate calling card is in fact the environment. The ultimate calling cards are ecosystems and we have pushed many of them really very hard and I'm not saying they are collapsing, we don't have regime shifts everywhere but you only have to look at the Baltic to understand that there will probably never be a Baltic as it was in the 1950s. There is a regime shift potentially on the cards there.

It is possible, going back to the thought on the Anthropocene, for humans to generally change ecosystems and the whole planet so let's think about how far down the road we want to go, in terms of extracting resources both outside of Europe but also within Europe.

Clearly the polluter pays is one of those elements but as someone said we should go upstream of it and we actually should not be creating it in the first place. So there is Green Chemistry, there are all kinds of reasons why we need to fix things. We're bringing out for example the first Air Quality Report, looking at two decades of what legislation has done, and it's very clear that we've been able to reduce emissions, but those emissions have not translated into reductions in ambient air quality. It's very important that we understand interventions, pollution and the public general good.

Innovation in critical times? Hopefully, looking at our Transport Report, there are intersections between new technologies, mobility and the reduction in greenhouse gas emissions from vehicles. But this nexus is

something that needs to be managed in a very careful way, so that Europe, looking responsible, has to do so in all elements, not just one sector, one after another.

The limited capacity of the planet, I think, is clear – it has certainly been proven within the geological community – and it's about, what are the goods and services that we need to sustain Europe, and are we willing to procure them in a way which is both sustainable but which, in the end, is run at the pace that the planet can sustain. It's not just about the volumes; it's about the pace of extraction and the pace of utilisation. On the one hand we have urgency, we have hyper-connectivity, but on the other hand I think we need to take some time to think about the rates of extraction of resources and over which generation do we want to use them: this generation, the next generation, or perhaps two more into the future.

Questions and Comments:

Q1: Michael Warhurst, Friends of the Earth Europe

Commissioner you mentioned the issue of waste as a potential resource because it has been a slow moving area, apart from the WEE Directive in recent years and there are quite ambitious goals for 2020 in the Resource Efficiency Roadmap. What do you see as the measures that you would be interested in pursuing over the next year on the agenda?

Q2: Unknown participant

Commissioner, you said that you want to reinforce existing legislation and you want to develop new policies via the market. What you present as evidence is not reflecting political agreement – there are other politics outside the market. Do you believe this is a good policy or is it the only policy you can find because there are no other political agreements to draw or to elaborate other policies? Do you think it will be enough? I don't think it will. When you say that we are in a transition period, there is a political debate to know if this political transition will be possible with or without the growth. Some scientists say it won't be possible to make this change with growth, we must find solutions for people to be happy with no growth. Could you tell us what you think is possible, politically?

Q3: Charles Berkow, Swedish Parliament Green Party Policy Adviser

Looking at the Raw Materials Initiative, what you are describing here seems to be one of the three legs of this Raw Materials Initiative that was started three years ago. Would anyone care to comment on the rate of progress within the Commission and within the Council in comparison to the other two legs? One was an attempt to increase material extraction within Europe and the third was a neo-colonial raw materials policy towards the third world. The view that I had is that we've been making most progress on the third of these and the least progress on the first?

Q4: Ioan Negrutiu, Professor of Biology, Ecole Normale Supérieure, Lyon

I would like to comment on three aspects. We receive relatively confusing messages from the scientists and the politicians.

- 1) In terms of timing, most of our intentions and projections heading to 2050 have a tendency to work more on aspects related to a deadline 2020-25. Demographic projections report that 8 billion people will inhabit the planet by that time. That is the main challenge we face, not the 9 billion in 2050.
- 2) My other point is on the framing – how do we frame the resource problem with respect to the binomial agenda that we see most of the time, that is climate change and biodiversity?
- 3) In terms of the economy, how do we deal politically and scientifically to signal to the economy that it is part of the biosphere, and not vice versa?

JP A1: To put waste in a broader context, for me two striking things of importance from Jacqueline, one concerning the definition question. If you have different definitions, you have a serious problem and that's why

I think it's extremely important that with the Roadmap on the European level we went as broad as possible, because this way we actually defined the story like I hope it will be defined in the future.

The other concerns the Rebound Effect – I think we should have quite an honest debate about that. How do we assume about how the world will evolve in the future. If we take into consideration all these trends which you presented about China, India or Brazil, where, talking about moving people out of poverty to middle class, this concerns huge masses of populations. This will, without any doubt, mark our future. It will be connected with increased consumption and that is why it is of absolute importance that we create the psycho-society. I think concentration on waste handling and reuse-recycling will be of utmost importance to our economic logic or there will be no economic logic – because we will otherwise be unable to sustain that development story.

I will not be more concrete about what we are specifically doing in waste. My people in DG are working on it, we do believe this is the direction to go, we do believe we have a major opportunity in Europe, we have five member states which are practically landfilling zero, or close to zero, and we have seven member states which are still landfilling practically everything. So that is the difference and the others are in-between. This means that it is possible, and what we have seen is in the past that it is possible, relatively fast if you organise your life properly and that is the most important thing, selection, collection so that the waste becomes an economic trigger so that it starts to live by itself so that there is no need of a constant push, of constant stimulation, of something which should work by itself. With regards to waste I believe that we have major reserves there, not only in regards to Europe but globally I believe this is one of the core stories on which we should focus.

JP A2: Political agreement - I do not believe that the market can solve everything. I simply believe that the incentives which are given to markets today are wrong, and this is why markets are solving some of the issues in the wrong way. For example, ecosystem services protection, or more typically, fish – if the market would work properly, then 88% of fish in Europe would not be caught in unsustainable conditions. I am a believer that we should use more and better market measures because we are not really using them properly now, from taxes, prices, subsidies – if you look to environmentally harmful subsidies, this is stupidity par excellence because you pay twice for this stupidity – first you support something which is wrong and then you pay again to get rid of it.

I am a believer of proper regulations, market measures and proper incentives. Then, the rest depends on the situation you're dealing with, what is the combination of all three of them? Absolutely it should be legislation where it's needed, absolutely it should be market measures, we are still living in market economies and will be for quite some time. Of course the incentives work if we would work systematically with education if we start to build the generation way for the future.

JP A3: This question about the growth – I would be tempted to answer you that we need something beyond GDP – I am a believer in that story and I believe that GDP is not the only one measurement, while it is a good measurement, we should nevertheless use other measurements with it, because GDP is not giving a clear picture about the quality of our life. If someone is living in Slovenia, with forests, relatively good air, one hour from the sea and from the mountains, you understand that it's not everything, GDP.

About the growth, my comment would be, don't wish too much, because your wish might become true, if we take it into a global context. Currently, this is a serious problem. We are stocked in the market places with the debts which we have accumulated and we can simply not come out of that debt story without growth. And, what is really important is that this growth environment becomes an integral part of this story. If we are, I dare to say, naïve so much that we think the economic story will not determine our lives in the future then we can fight but we will never really win that fight. The way to win is integration of our priorities into our daily life. That is where the major opportunity lies.

JP A4: Raw materials - I would be happier if the lack of raw materials story was stronger and it will become stronger. The question of what we're trying to achieve with Resource Efficiency is a kind of replication of the story we have had in energy and climate change now in industry and environment, that we would come to the same kind of agreement that we need each other, and absolute must, targets which take into account environmental consideration would be part of that activity. It is absolutely clear that the interest of the industry lies in the things that they see today, which they are seeing as we try to knock on their doors, it is not only these things – there are other things over which you will be worried in the future. For example, a typical case that we don't yet see enough of today is water – we know there will be a problem with industrial activity

in many of our economic industrial activities, agriculture included. I think things will evolve in that direction but the whole idea which you have underlined and we will certainly push on our agenda as much as possible, a much better picture will be formed in innovation partnership, on raw materials where, actually, this sustainability angle will be much more present than you are seeing it currently on the table.

Finally, timing - 2050, yes, I agree with that, that's why the Roadmap is divided in three areas: 2050, 2020 and before 2020. I understood when we have fought with the people in my directorate, when they gave me constantly the figure that we have 200,000 people daily more on the planet, because the fact is the concentration is in the next 10 years and that you are right, that is a point which we should look at.

How to frame biodiversity and resource efficiency? They are very much interconnected and of course, when you talk about resource efficiency, biodiversity is part of the story, not entirely, but many questions which are connected and that we have tried to pay attention to. When we talk about resource efficiency, energy efficiency, it is part of our story – maybe we don't deal with it very much in depth, but certainly we believe that this is the broadest way of looking into the concept, but that doesn't mean that framing is not an important issue.

Signalling the economy I think it should be signals which are coming through the economy, we are human beings who are on a daily basis living as we are living and we need proper signals because those signals are guiding our decisions.

BD A: I am working on the Directive on Waste of EEE and this is right that actually the market will not solve the problem of e-waste or other waste but neither will the regulations because there should be synchronised activities from all of the sectors looking at what a wasteful society we are really, what are the changes now. On the one hand it's so easy and relatively not so expensive to buy a new hairdryer and it so easy to throw away the old one because it doesn't have a good colour for example, not realising what problem that could cause if the scale of such behaviour is big, for example in the EU of 500 million people. On the other hand, we don't repair anymore. This is the producers – they are producing the equipment which is used only once. In some new member states, like Poland, they still have workshops where you repair things but here in Belgium it's not that easy. So I just wanted to underline what are the inter-linkages between the different sectors and also what is the role of NGOs in making this change true.

JM A: Humans are actually designed to live with scarce resources and also to be adaptable to high uncertainty, it's actually in our DNA and we've kind of got away from this. But if you address this as a global phenomenon, one of the greatest aspects that we have at our disposal is design. And I still think that at the beginning of all of this, we have to be consistent across everything in marketplaces, and across the way we live, and how we were designed to live with scarce resources. I think that design has been underestimated as being a very powerful driver of how we will deal with resource efficiency and a resource scarce world. So, if you say we are going to be in a carbon constrained economy in the future, we should be demanding through the life-cycle, through design, the framing, the consistency of nutrition where we get our food from, that whole life-cycle of living should have the footprint or the handprint or the fingerprint, whatever you want to call it, of what it is to be in a carbon-constrained world. For me, it's about how can we design things from the very beginning. We of course have a legacy of 20 years of not doing that, and that's where the waste issue is really important.

SESSION 2: Can decoupling result in responsible resource use?

Chaired by Fiona Hall, MEP

Fiona Hall: I think the questions are is decoupling possible and indeed is it already happening and what do we actually mean by decoupling and of the different sorts of decoupling, absolute decoupling, relative decoupling, what are the sorts that we need and what can we do to make it happen?

Jacqueline Aloisi de Lardere – Member of the UNEP International Resources Panel

Can decoupling result in responsible resource use ?

Presentation:

http://www.foeeurope.org/sites/default/files/news/Aloisi_Can_decoupling_result_in_responsible_resource_use%5B1%5D.pdf

It is clear that economic growth has been built on the use of low priced natural resources and this has had many environmental impacts. Governments as well as international bodies have dealt with environmental issues separately: air, climate change, water, biodiversity and so forth, in silos. But this is why at some point UNEP felt the need to develop an holistic approach and to identify the interconnections, the linkages between the various issues and problems and then advise the management of natural resources issues. The panel was launched in 2007 with two main objectives: provide scientific assessment on resource use and better understanding of how to decouple economic growth from resource use and environmental impacts. The Chairs of this international resource panel are Ernst Ulrich von Weizsäcker from Germany and Ashok Khosla from India. There is a chairing committee that the EU is part of, a number of working groups have been created and one of the groups has been dealing specifically with decoupling. A second report is in preparation which should be published next year.

Can decoupling result in responsible use? My answer is yes, BUT, if there is a vision and if there is political will and political courage. I agree with you Magda that the crucial issue is how to crack that nut and to bring political will at the highest level so that people develop the necessary framework conditions for decoupling. I am not going to tell you why we need decoupling as the previous speakers have.

I want to recall that today on average, less than 5% of materials taken from the earth end up as products. 30 tonnes of materials are used to create one tonne of car, and you used the example of the t-shirt. Indeed, we need economic growth to alleviate poverty and to decrease unemployment but we need another type of growth and this is what is being said when we speak of GDP and other types of indicators. Already we see signs of change, most of them linked with the increase of oil prices, and this gives us a strong message that decoupling is technologically possible and economically efficient.

But I would like to go into the definitions. I would like to speak of resource efficiency, which is achieving more with less material inputs on material outputs. Economic gains are achieved through resource efficiency. Decoupling, which is delinking economic growth from both resource use and environmental impact; so not only looking at the impact but also looking at resource use. In the first report which shows a conceptual general graph of decoupling, looking at human wellbeing increasing, economic activity, even expressed in GDP is growing, but we are resource decoupling and impact decoupling all the time.

I would like also to discuss relative decoupling, which is increasing resource use at a slower pace than the increase in economic growth, but still there is an increase in resource use. Absolute decoupling - resource use is declining while the economy is growing and this is what we want to achieve, because relative decoupling is not enough. I also wanted to address the Rebound Effect, but I think that both the Commissioner and Jacqueline McGlade addressed those issues.

To manage natural resources responsibly there is a need to define targets and in 2004 OECD agreed that decoupling should enter 4 Systems conditions:

- i) Regeneration, so that use of natural resources shall not be permitted to exceed the rate of regeneration, example of fisheries
- ii) Substitutability, substituting the use of rare, dangerous resource by others, for example bringing wind or solar energy to substitute fossil fuels or nuclear energy
- iii) Assimilation, there exist natural absorptive capacities so the release on the environment should not exceed its assimilative capacity
- iv) Not going beyond irreversibility.

But having these four principles is not enough; we need quantified targets. I will speak of the Factor 10 target in resource use. Also today, on average in the world the consumption of materials is 15 tonnes per person. The target should be 5-7 tonnes per person, which is consistent with the factor 10 improvement for the economy of industrialised countries.

This target should not go without indicators. What you cannot measure you cannot manage. And you have a number of indicators which have been developed such as MIPS which is Material Input per Unit of Service or the FIBS for the use of land. Also right now you have industry at the micro level using indicators of the global reporting initiative and I think that there is a need to put all these consistently.

How can we reach these targets? There is a Roadmap of the EU and congratulations for bringing this but I would like to say a number of criteria to think about on this roadmap. We were first to develop the system thinking approach, everything in the world is connected to other things. For example, transport – we started with car efficiency, then to cars and fuelling them with electricity not anymore with fossil fuels, then car sharing and now we are redesigning the overall transport system of a city, thinking of mobility.

Second, we have to take and develop preventative approaches. Reacting to the outcome is not adequate, we have to prevent and we have to really design the products as has been said earlier. And third, we have to develop a circular economy. The other day for example, in Italy, I saw a garbage truck transporting valuable goods, so its things like these that need to change.

Technological innovation is also part of the Roadmap and by technology I mean both hardware and software. We know that a lot of innovative technologies already do exist and if they were used they would achieve right away factor 4 or factor 5 targets. We have a number of books on the shelves and the second volume of this series will contain a lot of ideas of technologies which have been used and which are technologically efficient.

Then the second is to go beyond the existing technology to leapfrog – using systems of approach certainly will allow bringing lots of new technologies but we also need breakthrough. So, how to bring those technological changes? I am a strong believer that we are in a market economy and we need market signals. Earlier the chair was speaking of recycling, electronic equipment and saying that it is not coming into action. Well of course, the price of materials is too low and there is no economic incentive for people to recycle and that's why I think that this is fundamental.

This path has been taken in a number of countries in Europe; Denmark, Sweden, a little bit the UK, Germany. An ecological tax reform was introduced in 1991 on transport fuels, electricity, heating and this was an increase in taxes but at the same time there was a reduction in labour costs. With this system we have been able to create 50,000 jobs and also save a lot of energy. What is needed in fiscal and tax reform is progressivity to let all actors adapt and second, predictability also, so that industry can innovate with a clear vision of what the rules will be. The third criterion is to ensure that low income groups are not hit.

In addition to fiscal reform, there is a lot of additional policy which should be adopted to support decoupling. I am sorry to say that in this instance, I feel that the Ministries of Environment might not be the place to discuss those issues. It is in the Ministries of Finance and of Economy. This is the same in the political parties. The greens, I have seen this in France, are not speaking so much about resource use. These issues should be in all political parties. So I also believe we need regulations. We need the norms and standards, we need research, awareness raising, we need training and education. But frankly, this is not enough.

I want to speak about the international dimension, though Jacqueline McGlade spoke about it, but I want to discuss the obstacles. First I think that the high levels leaders and decision makers in our world do not

understand the decoupling urgency. They think short term, they think the next election and are used to solving issues, one by one, separately. So it's a total change of mind-set, my first comment. There was a very interesting HSBC study on the stimulus packages. And of course stimulus packages adopted in 2008 want more consumption, and more consumption is more resource use. You don't have this vision – you solve the problem of price without seeing the next one to come.

Second, many feel that the tenfold reduction in the use of fossil energy will bring a diminution in quality of life. Well, we have the proof with adoption of new technologies that this is not the case. You have a very nice life in green buildings.

Third, people feel that you will need heavy investments, for which countries facing the crisis don't have the money. But studies show that the cost of inaction is stronger than the cost of action. You will pay tomorrow – it's like a debt, you don't pay today but you will pay with all the interest tomorrow.

Fourth, the problem is lobbying. Many businesses feel threatened and are lobbying with the governments in order to say, we are going to cut jobs. Of course there will be winners and losers. But I think that at the same time if we give the time and there is predictability in the policy then this will be overcome. I see encouraging signals, I was speaking at a conference with the French Association of Business, and there were very few business people but a lot of finance and investors, because they begin to see the interest of investing in that field.

In conclusion, my response to the question of, can decoupling result in responsible resource use is yes, I think that we have the technologies, the policy toolbox and know-how, but if we want to challenge behaviour, the example has to come from the political leaders and they are the ones to transform and with market signal the habits of the middle class people as Jacqueline wished. I am an optimist, a gardener, and after two generations I have seen my seeds multiply into a forest and I hope that we will all seed and that our grandchildren will seed a forest and lead a good life. Thanks to Friends of the Earth for being a multiplier and a seeder.

Ton Manders – Deputy Head, PBL Netherlands Environmental Assessment Agency

Role of the EU in the exploitation of global natural resources

Presentation: http://www.foeeurope.org/sites/default/files/news/Manders_FEE_Nov8%5B1%5D.pdf

Part of our message overlaps with UNEP's message although I have to warn you that I am a bit more sceptical about the potential of absolute decoupling, as Jacqueline is. What I want to do is bring you three messages, which are based on two reports we did recently - the first one, *Scarcity in a Sea of Plenty*, and the second one, *EU Resource Efficiency Perspective in a Global Context*, that is work we did for the Commission in their preparation of the Roadmap on Resource Efficiency. In those reports you can find all the examples, more figures and details.

First I want to stress again how complex the issue of resource efficiency absolute decoupling is and that there are no simple solutions – so also that resource efficiency itself is probably not enough to bring us where we would like to be. I will elaborate a bit on that in the second message, resource efficiency as being only part of the solution and as a third message, spend a bit of time on current EU Policy on the Resource Efficiency Roadmap.

There are two contradicting aspects of resources. Of course, we need resources for economic growth - perhaps not in Europe, but for the economic growth which is necessary in large parts of the world, and the problem is that once in a while they are much too expensive. The graph shows prices of food peaking and as they peak commodities prices peak, highly volatile price peaks being higher than ever before. So that solution to that scarcity issue would be, to make them less expensive, to go for more supply, go for extraction of more resources. The second major problem is, of course, environmental degradation. Basically, it's a problem of abundance of resources. So there are two contradicting issues here: on the one hand you have scarcity of resources, on the other you have abundance. So the policy there would be to make them more expensive. This

is where the conflict arises; so, simple solutions are not there, and this is just for two elements to do with resource.

There is of course the whole security of supply issue, Europe being completely dependent on some critical materials and this dependency has grown over the years. It is also very important to mention the social issue, the development perspective. The impacts of scarcity and high prices are extremely felt in developing countries; poverty, hunger, energy scarcity. The environmental impacts are also especially felt in developing countries. That is one of the perspectives which I feel are a bit lacking in European policies so far.

Another thing you should keep in mind is that there are many resources, and every resource has its own story. It's completely different, discussing phosphate rock, or rare earth materials, or water stress, for example. So behind each resource, whether it's land, soil, energy, materials, it has different driving factors, different impacts and different solutions so there is no one size fits all. Also, they are very strongly interlinked. To extract raw materials you need a lot of energy, to go for shale you need a lot of water and other assets perhaps, so, there are many interlinkages and again, no simple solutions.

Why should we worry about resources? We've been worrying about resources for ages. Is this moment in time so special? Yes, I think it is, for a couple of reasons. There are extreme global shifts around the world, BRICS countries emerging, I think we are more sure than ever about the environmental impacts, whether it's climate change or biodiversity loss. I think we are also in the right moment in time to make things change in the next decade. In the next decades up to 2050, demand for food, energy and water will go up, the environmental impact, whether it's on agriculture or lands will go up, biodiversity will go down and greenhouse gas emissions will go up.

So, a complex issue with different goals. You could go for security of supply, cheap resources and that's why we're here I think, clean environment to reduce the environmental pressures and you could go for development of large parts of the world. There are policy options trying to reach those goals. And their trade-off is synergies – as I already mentioned, if you try finding more energy and you go for the cheap tar sands or shale oils it has an extreme negative effect on the environment. Depending on what choice you make you could meet one goal and miss another one.

For resource efficiency, relative decoupling is by far not enough and one should also be a bit cautious. I always draw a parallel with labour productivity, that's in human resources, where we put a lot of effort in increasing labour productivity, the efficiency of labour, and not to create unemployment but to create economic growth. So what makes you believe that increasing the efficiency of natural resources would create unemployment for resources, using fewer resources? I'm a bit cautious there because over time we have not seen many dramatic changes. You probably need more than just resource efficiency to go for the absolute decoupling.

We should also be worried about Europe's role. Europe is 15% of the global economy, in population terms about 8% but shrinking over time, so it's a global problem. Europe is doing its fair bit but more has to be done outside European borders. Resource efficiency is focusing on one track, one bunch of solutions and many more are available, so of course it depends on how we define resource efficiency. We should put more effort into finding the right substitutes, but also changing behaviour – not going for material growth, thinking about dietary changes; these tracks might have enormous impacts on how we use our resources.

Regarding energy use, there are three scenarios: without any extra new policies, it will go up over time. If you implement efficiency policies, with the best available technologies from flights to high-speed trains, although there would be a bending in the curve of energy use it would still not be absolute decoupling. If you combine resource efficiency with various climate policies, fossil energy will be seen to go down in the end that might bring you at least, in terms of climate, where you want to be. So resource efficiency itself is not enough, extra policies are needed.

Turning to Europe's resource policy, in my opinion, it's kind of fragmented, it's not very clear how to choose between the four policy objectives I mentioned earlier. I would suggest a more integrated approach and a more concrete image of the targets you want to reach. There is only limited attention paid to the development perspective, which I feel is where the real problems lie, whether it's scarcity or impacts, and the Roadmap is not very explicit about the external components. I think a lot of coordination is needed to tackle this problem,

and Europe seems to be a bit inward looking, being worried about import dependency, but not so much about what partners are needed to solve the problem and about the impacts across border. More coordination is perhaps needed than competition; we're in a changing world where power shifts are very dominant.

I have come up with a short to do list for Europe. We need more explicit, concrete goals and to prioritise them, which is up to politicians; to be aware that resource efficiency is not enough for absolute decoupling, additional measures are needed, for example to focus more on substitutes and changing behaviour; but we also need more data, especially on resources, we need more information on the impacts, more information on particular resources and on how resources are utilised in the production processes; and more focus on policies, as we know what options are there but we are not certain what will work in the end, so what will really bring about the changes we have in mind.

Keith James – Environmental Manager, Waste and Resources Action Programme UK

Can Decoupling Result In Responsible Resource Use?

Presentation: http://www.foeeurope.org/sites/default/files/news/James_FoEE_Presentation%5B1%5D.pdf

For those of you who are not aware of WRAP, we've been in existence for about 10 years and we deliver government policy on reducing the amount of waste we send to landfill and increasing the amount of raw materials that we recycle back into the economy. Over the years our mission has grown and we are now the lead body in resource efficiency in the UK, working for all the UK governments. We are trying to work with all sectors of the economy, trying to make sure that everyone benefits from more efficient resources. We have two goals this year in this business plan to 2015, firstly to minimise the amount of raw materials we use in products and buildings, secondly to divert priority materials from landfill back into use. When we're setting our targets, we consider a range of issues, so as well as those two priorities we are trying to deliver cost-saving to the UK, reduce the amount of raw materials we use, but we have to be mindful of how the economy is going to develop.

I'm starting from the point of view that decoupling does happen, but we don't necessarily understand why it happens. I looked up trends in Northern Ireland, in Gross Disposable Household Income, and what was seen is that between 2002 and 2009, this increased by about 40%. At the same time, the amount of waste produced by households went up to about 2005 and then started to fall, falling fastest in the same time period where household income was growing quickest. Considering the amount of waste produced per unit of income, as far as waste is concerned in Northern Ireland, decoupling exists and it's been going on for a long time, but not because of any particular policy focus in that area. I think the question that we need to ask is, can responsible resource use lead to decoupling? If you put a lot of effort into this area, will it actually lead to the outcomes that we desire?

When we talk about decoupling it's important that we talk about a range of issues, so it's not just about the tonnes of raw materials and waste that we have in our economies, it's also about climate change, scarce materials, land, water; a whole host of issues. At WRAP we started from the perspective of climate change in about 2009, where we felt we understood how much CO₂ was associated with landfill. In the UK it's about 80 m tonnes CO₂, for energy recovery we think it's about 0.5 m tonnes of CO₂ and recycling saves 18 m tonnes of CO₂ but we had no handles on how much CO₂ is being avoided by current levels of waste prevention or potentially could be avoided by waste prevention and how much could be avoided by reuse.

In 2009 we produced a report, *Meeting the UK Climate Challenge*, where we looked at whether efficient use of resources could lead in reduction in greenhouse gas emissions and in that report we identified 13 different strategies - 7 ways that we could change the way we manufacture goods and 6 different ways that we could change the way we consume goods as individuals and businesses. The most successful strategies for reducing greenhouse gas emissions and resource use were lean production (making the same goods but making them lighter), and waste reduction (reducing the amount of waste that's generated by commerce and industry).

We then looked at 6 different consumption strategies, and the point about these is that even the least successful consumption strategy has more of an impact than the most successful production strategy, so if we are looking at where we should be focusing our efforts to decouple resource use and environmental impact, it's

in the way that we as individuals and businesses behave, the way that we use goods. Changing the way we manufacture goods is important, but it's far more important to change the way that we relate to our goods, so how we access those, whether we buy or lease them, and then once we have them in our ownership, what we actually do with them. Televisions, on average, are made to last 27 years; I'd be very surprised if there is anyone in this room who has a 27-year old television. So we need to think about, not just technical barriers, but also the behavioural barriers as to why we are using so many resources in the first place.

We think that the strategies that we identified could contribute 10% towards UK government targets on climate change by 2020, so more effective use of resources isn't the answer to climate change, but it is complementary. We think that some actions have a number of benefits. But we also need to focus on the amount of materials we are using. So we looked at the amount of materials that are flowing through the UK economy. Excluding waste from manufacture of goods abroad that are imported to the UK, fossil fuels and water, we use about 520 m tonnes of materials each year, of those about 300 m tonnes disappear into the economy, so that goes into buildings, into clothing that we buy, put into our wardrobe and it never sees the light of day again, and we have about 200 m tonnes of waste; half of which goes to disposal and half of which works its way back into the economy. So if we're looking for evidence of decoupling, we want less material flowing through the economy the same time as maintaining, or increasing, GDP.

Following on from the work we produced in 2000, we published a report in 2010 looking at exactly the same strategies and how much material those strategies would save. By 2020, those scenarios we looked at could reduce the amount of iron, ore and steel we need by about a third; we could reduce the amount of plastics we need by a fifth; there are other materials that people talk about when they are concerned about material scarcity and security. If we changed the way that we used goods, so forgetting about production, we could reduce the amount of lithium we need in the UK economy by a fifth, the amount of cobalt and rare earths we need by about a tenth. So when we look at how we respond to concerns about scarcity, we don't just have to look at technological solutions, we can look at the materials that are in the products we already have. We don't necessarily need to extract them again for recycling; we need to make more effective use of those products as they are.

We also looked at GDP and how these scenarios would affect UK GDP and we found that there is a change but it's very small, and we think that the benefits are much greater overall. The biggest change is in the way money is distributed, because if I make a saving somewhere, I don't know how my supplier is going to respond to that – will they put prices up or will I be able to see the benefit of that saving using it to invest in more technologies that will help me use even less resources. There's a whole host of issues there, but the one that people have talked about repeatedly this morning is the rebound effect.

So we looked at the rebound effect with relation to climate change and we looked at four different strategies. So we looked at lifetime optimisation, so keeping things for longer; reducing the amount of food waste we produce; dietary change; and restorative economy, which essentially means reuse. We found that if there's a strong rebound effect, we would halve the savings we predicted, so it's something that we're very mindful of and is important to take into consideration when we're looking at policies and activities that could lead to decoupling.

We're following up this work now and next week we're producing a series of reports on reuse, a methodology tool and some case studies to identify ways that reusing products can change environmental and economic performance. The reason we think this is important is that people who have looked at reuse before, tend to assume that if you reuse one product then you displace one brand new product. The work we've done has shown that this is not the case. If we're looking to deliver resource decoupling, we need to have that level of detail that allows us to understand fully the implications of what we're doing. We also need to understand more about the lifetime of products and their subsequent uses, and also the economic impacts of reuse.

In conclusion, we think that decoupling can occur and is occurring but to date, it's not happening intentionally. We need to understand how we can actually bring it about deliberately. We think that, essentially those strategies that we have identified are the same strategies that you need to follow, whatever environmental issue you're concerned about. You may have them in a different order, but it's the same set; so if you're concerned about land, water, scarcity, tonnes of resources, waste, climate change, you need to go through the same actions to deliver those outcomes. We think there is no significant effect on GDP from this but we still

need to work out how we can go further still to deliver fully decoupling. It's only really by trying this that we're going to see whether it will work or not.

PANELISTS

Willy De Backer - Head of Greening Europe Forum, Friends of Europe

I'm working for a think tank, Friends of Europe, in Brussels and I'm heading the Greening Europe, I am also an independent journalist and I blog on all these things on two blogs, one called the Great Transition, the other called Green Intelligence. I am also an advisor to the Global Footprint Network, the think-tank behind the ecological footprint instrument.

I have a few reactions to some of the things that I have heard. Let me start by being quite polemic here – decoupling is a wonderful fable, that is actually used to keep up the even more wonderful tale of everlasting economic growth. It's nothing more, and that actually answers your question, of why we don't know why it's happening, because it is not happening, that's the whole answer. If there are any successes, sometimes in the reports you read, it's because they start from national observations of decoupling. Some of these successes are actually being brought back to the fact that we are outsourcing some of our production; we outsource it to China. So in a way, the greenhouse effects of that go to China, they are not anymore in the UK, for instance. We are fooling ourselves if we think that that kind of decoupling is really working.

If you look at reality, there was a report yesterday in the UK brought out by PWC that looked at the G20 countries and carbon intensity. Our carbon intensity has been going down for quite a while over the years, but now suddenly in the last years it is increasing again, which means we don't have decoupling, we have what I would call recoupling in reality. There is even an explanation for that. It's because we are now no longer using the cheap energy we had available earlier, now we have to use very expensive oil coming from the tar sands, coming from shale gas; we are going into drilling into very dangerous areas, in the Arctic for example. That's why we have the problems; that's why we have recoupling and not decoupling.

Let me come to one point. I like the books and what the UNEP Panel is doing, but the problem is with all these different factor 4, factor 5, factor 10s. I was just reading a report that was being presented in DG Environment from the Wuppertal Institute and it has come to the conclusion that "in the recent past, the average growth rate of total material productivity in Europe has been only a rather weak 0.5% pa. At this rate, it would take more than 250 years to attain a factor 4 reduction". And you are dreaming of factor 10! That's 2500 years or even more.

Another point that I would like to make: market instruments. There is still this fundamental belief that we have to use market instruments. If you look at the TEEB study, the study on the economic impact of forests for example, of deforestation, it has come to the conclusion that we are spending, or we have a cost, of over 3 trillion per year. Do you think that anyone in the policy maker's area is listening to that? It's more than the economic crisis! SO we have our whole priorities wrong.

One last point – I think the whole current economic recession that we have, the depression or whatever you would like to call it, contraction; is not the fault of the bankers, it's not the fault of Greece either or countries that haven't really done their homework. It is caused by resource constraints and the fact that actually we are bumping into the limits of economic growth. We have come, as Richard Heinberg says, to the end of economic growth. So thinking that we would get out of the debt situation by growing in the end is just fooling ourselves again. So let's get realistic, let's get rid of all the fables and myths, to do some real policy work. Thank you.

Karina Vopel - Head of Unit Directorate Strategy, DG Environment

It's difficult to come in after so many different interesting interventions, looking at the different aspects. To come back to the intervention of Mrs Aloisi de Larderel about the redefinition of the concept of growth and how we look at human progress, I think that is one of the underlying thoughts – how we will want to be

measuring wellbeing, or even happiness in the future. This has a huge impact also, hopefully potentially on how consumers want to see their development instead of the traditional GDP vision.

Also very much I would like to underline the fact that resource efficiency is not a matter of environment ministries, it's not only a matter of DG Environment at the Commission; and that is now what we are trying to push very strongly. As we speak we are trying to integrate resource efficiency elements into the Europe 2020 economic monitoring cycle and we very much hope that by engaging beneath the wider economy ministers and others into the debate through action on taxation and environmentally harmful subsidies and other elements that can be seen in the current situation as growth enhancing, so creative of greener growth of employment. I think we need to take the opportunity and bring these economically positive messages of resource efficiency into account.

I would like to bring in two different axis into looking into the potential of the concept of decoupling; basically asking some questions on what we are really looking at and what we should be achieving and by when. In the Resource Efficiency Roadmap that we have just adopted at the Commission in September we have the starting point of a 2050 vision. Now this is 40 years away from today and when I think of the days when I was a baby, 40 years back and what we knew of the opportunities of technology, most of the technological progress that we have made was science fiction, more or less at the Star Trek level. Looking forward 40 years, it's quite impossible for me and I would expect for anyone else to really predict what innovation could be coming forward in terms of solutions to resource efficiency. I'm sure that many innovations can be expected to come about, human inventiveness; there will be policy support, also pushed by more scarcity and rising resource prices. How far this will all go; how much is innovation a solution, I cannot tell. I think what we need to focus on right now is what is feasible within the knowledge that we have as of today, also what is feasible based on the political and scientific consensus to prepare for the predictable future.

Now, while we have set ourselves milestones for 2020 to start with and because the definition of resources is very wide, we decided to really focus on the most crucial ones, and I think that instead of talking about limiting the use of resources overall we have to be very selective, we have to be careful of the interdependencies, the substitutional effects. Some resources will be possibly used more, others hopefully less.

To finish, there are natural resources that are extracted and modified for economic value, but I think where we have a lot of room for improvement in all of the avoidable material waste and production, be it unnecessary transport, is, I think, also an area where we need to make much more effort. Thank you.

Michael Warhurst, Resources & Consumption Coordinator, Friends of the Earth Europe

What's clear is that we are in a very interesting situation, where we have a widely accepted problem, but we have almost nothing being done on solutions and we need to remember we've been here before. I would advise people to look at the 1974 English Waste Strategy, 40 years ago, where it talks about the challenge of resources, the money being wasted importing resources into the UK only to put them into landfill. And the test of policy as you look back; did that document have a big impact on the UK? No, it didn't, we carried on landfilling things. And again, we have an opportunity here but it only works if we actually have policies that actually go into place and actually change things.

Questions and Comments:

Q1: Johannes Drielsma, Euromines, representing the mining industry based in Europe.

I wanted to raise the question of competitiveness – we've heard a lot today about GDP being an imperfect indicator; we've just heard that decoupling seems to be possible with insignificant effects, perhaps, on GDP; we've also heard suggestions that economic growth should be reversed; suggestions that there's fear that we'll lose our quality of life; and I heard it mentioned that this won't happen because we have the technologies, housing etc. to make life continue to be comfortable. My question is that GDP isn't really an indicator of competitiveness either. What GDP shows you is what we've

managed to do until now. How we have competed so far to grow our economy. How are we going to integrate the idea of remaining competitive in this changing world where we are only 15% of the population, we do only consume 15% of the resource mobilised. In order to prevent decoupling, changing our quality of life, we need to remain competitive. How are we going to factor that in?

A1: Ton Manders

I understand your worries about competitiveness and I already stressed that it would be good for Europe to try to find solutions with other partners and to go for more collaborations, so a worldwide solution or a broader solution is certainly better than a single European solution. On the other hand we're in a changing economy and you can't expect specific sectors to be there for many decades to come. So, you should look at competitiveness from a more macro-view. How will Europe make its money in the next 4-5 decades? It shouldn't necessarily be specific sectors making a profit now.

A1: Jacqueline Aloisi de Lardere

I feel that the issue of resource use is worldwide and the first who will make the pace to use less resources will be more competitive. That's it.

Q2: Nikov Gorden from the Dutch Waste Management Association

I was rather appalled by the radical approach of Willy De Backer. Which three policy measures have to be implemented now to start getting the curve, and could Jacqueline reflect on this too?

A2: Willy De Backer

It's very hard to start there. The first thing I think needs to be done is that policy makers need to understand that we are hitting the growth. That does not mean that that automatically leads to quality of life changes, we will need to do something about throughput of materials, throughput of energy and if we don't do it, actually nature is going to force it upon us because we are going to see the resource scarcity happening anyway. So we better start to frame all our policies in terms of that we have one planet, with finite resources. So that's the first thing we have to do. If we change that kind of mind-set, then also the discussion about competitiveness changes, because then if we continue competing on a country basis or whatever, or a business basis, we will always get into trouble, because then it's who gets the most resources and who actually can then make it into products, and make it into profit, etc. We need to re-shift the way we think; businesses need to re-shift; I want to give you an example there. There's a company called Patagonia in the UK and I just wrote something about it yesterday on my blog, but actually they are asking their clients to buy less of their materials, less of their stuff. It's an incredible thing that a business can say; please buy less of our products. Look at that please, I think it's a very good example of how business is also starting to shift to some kind of new economy, an economy which is based on the one finite planet that we have.

A2: Jacqueline Aloisi de Lardere

Well it's a very difficult issue like Michael Warhurst said, but at the same time how can we do it quickly? And we come back to what Magda was saying, because I feel that it's not because one small company Patagonia has done it that we will achieve the goal that we want to achieve. I think that we have to change the mind-set of the policymakers and I believe that it is the people in the European Parliament who have to say, to their own countries also, please work together, I agree with you. But this is really at the top level that we have to act. And frankly, I also feel that market signals are so important to change everything. The behaviour of people, the wallet, even you I'm sure are looking at what is in your wallet when you buy products. So that is why I believe in economic tax reform.

A2: Michael Warhurst

I think you have to do a combination. I would say that in our view, we have a situation where the idea of creating the measurement of our resource use, what is our land footprint, water footprint, material footprint; carbon footprint; around the world so we have that global dimension, and then say, ok we know what it is this,

it's got to come down. And then you have a whole set of ways to make it come down. And the Commission has said they want to measure effectively those things. They spend 5 years deciding how to do it. And you have to remember, on the competitiveness that this is money; if we're importing materials from outside Europe we are paying money outside Europe to bring it in. It's the same if its land; food, it's been on land, land has value. This is all money that's going out of Europe and then Europe has to try export or gets lots of debt. And so, as Willy was saying, one of the factors in there in the financial crisis is very much the cost of those resources and it is a balance of payment issue, a competitive issue. So the idea that the best way to get past it is to forget about the fact that we're paying lots of money to import lots of things into Europe is clearly incorrect.

Q3: Unknown participant, Friends of Europe

I have the same question to Karina and to Keith. We've just learned that it's more efficient to change consumers to how they consume products when think about political framing. Would you give us a concrete example of how you can convince European citizens to consume in a way so it's more attractive, more progressive, not to buy a new mobile every second year; or have their own washing machine or whatever? Could you give us an idea how you want to achieve progress?

A3: Keith James

I think firstly we need to get the messages right for consumers. We shouldn't expect them to behave in a certain way because it's right for the environment. We've got to get the messages right on the right measures. We've heard a lot about winners and losers and about design. Really, if we're looking for more efficient use of resources we have to design the system right, so it's not necessarily about the product design but how we access those products. So, for a consumer it has to be more attractive to lease a power tool when doing DIY work rather than buy one, use it for 5 minutes and then stick it in a cupboard to gather dust for two years. We've got to get the message right and it's got to be easy for that person and convenient. So that's really the challenge for us, I think.

A3: Karina Vopel

Steering consumer behaviour is a very tricky one. Of course, you have the demand and supply question. Of course, consumers will tend to take what's available on the shelves. So the starting point of course will always be, make sure that the most damaging goods are no longer available in shops for consumers. That's one point from a legislation point of view. Of course you have pricing, other market based instruments that you can use in that, the European Commission has just launched an awareness campaign, called Generation Awake. As far as I know it's the largest and widest awareness campaign in this area so far, there are lots of good practices from EU member states in water consumption, energy consumption. And for the first time we really tackled the question of how to make these considerations part of consumers' considerations when they are about to make a purchase. So instead of looking at the product, the quality of the product, its price; that people would automatically start also considering the environmental social impacts of the goods and services they purchase. This is a campaign which has now just started and will be running hopefully for a few years, and we will be monitoring very closely the effects of that and we hope that by not only making green behaviour trendy but that it should becoming a reflex; maybe there we have an opportunity.

Q4: Stephan Slingerland, PBL Lands Netherlands Environmental Assessment Agency

I have a question to Karina in particular. There was a point raised by Ton that the European Resource Policy so far doesn't integrate too much the development policy. Could you perhaps react to that?

A4. Karina Vopel

We had to make some difficult choices when we tried to limit the scope of this Resource Efficiency Roadmap. Because it is building on lots of activities that are already out there and on-going, it was very difficult to set into stone at one point in time a full set of policies. Now we know that Rio+20 is going to be the more global branch of the resource efficiency work and we would have had to anticipate this process way too much to come

already now with some solid conclusions. So we are referring to that process and really hope that this will take the policy even further and wider. This on-going work.

Q5: Unknown

I would like to tell the speaker I am trying to be respectful but I think you are part of the solution but you have at least uttered 10 times the words I believe. And I think we're discussing beliefs here. It's almost as if we were in a church. You are saying I believe, I think, I believe in economic growth; and I answer you, I don't believe and to convince me you say, well, there have been miracles, factor 4 and such examples and I reply your miracles are not convincing me. I don't believe the same thing as you. Either we stop speaking because we have two different beliefs and have nothing more to say to each other, or we put into question the very foundation of our beliefs. With beliefs we would need an increasing factor of 130 times, it would mean 11% of increase a year when we have never achieved more than 2%. We are faced with a true problem, with the belief that economic growth can go on so I am wondering to what extent we can still speak to each other if we do not have a debate first about our respective beliefs. How can we continue this debate if we do not speak about these beliefs and we do not analyse our beliefs?

We need to debate our beliefs, of course. Personally, I can say that there are examples and reports that are showing things that have actually happened, more than miracles. It's not enough and we know it's not enough. So the question is, how can we achieve the multiplier effect, how can we leverage what has actually been successful and how can we implement it on a larger scale?

We can debate it of course, if it's a problem. Because you don't believe in market economy, that's something else, it's a political choice and democracies will have to solve that kind of problems. But for the time beings we are living in market economies; that's the reality. And it's in that framework that we respond as we respond, and we have to respond in the framework of a market economy, to tools which are available, that is, economic tools, and as the Commissioner said, use the signals, we must keep sending signals they are way too weak and we should be strengthening signals.

SESSION 3: Under pressure - How Europe's consumption is threatening the global water resources

Chaired by Bas Eickhout, European Parliament Green Group

Stephan Lutter – Researcher, Sustainable Europe Research Institute

Under pressure - How our material consumption threatens the planet's water resources

Presentation: http://www.foeeurope.org/sites/default/files/news/Lutter1_RoI_Under_Pressure%5B1%5D.pdf

Good Afternoon. I'm presenting the results of some really perfect work we have done, perfect in terms of the collaboration and also the results together with Friends of the Earth and various Friends of the Earth organisations around the globe: '*Under Pressure: How our material consumption threatens the planet's resources*'. I'm stressing this material consumption because it's perhaps not the first one but it's one of the first reports where in a comprehensive manner we tried to illustrate the connection between the material consumption and the water consumption. Beware of the fact that in any stage of material extraction be it flow or further processing, or the landfilling, you have water included, so there is a strong connection there.

This report is actually one of the products of a 3 years project we are doing together with Friends of the Earth project for Europe Aid, and I was glad to hear Jacqueline McGlade this morning say that the EA is working in the same direction, it highlights and raises awareness on the resource consumption topic and the implications, the European consumption has on other areas in the world. That's why we're focusing on imported resources from other regions in the world, from developing countries and the consequences of the resource extraction there.

I have already mentioned that the report tries to look at trends as well of material consumption; if I talk about materials I mean fossil fuels, minerals, metals, as well as biomass and looks at the connection of those materials to the resource water. It's looking at the impacts that European consumption has on others. It gives examples of concrete commodities or resources and it was a pleasure, and still is, to work with our colleagues from Chile, from Brazil, from Togo and Cameroon, who did a great job in analysing the impact of resource extraction in their countries, especially from Chile, the lithium case; from Brazil the aluminium case; and from Togo and Cameroon the cotton case. At the end the report suggests a way forward towards a resource efficient or sustainable use world.

We really tried in this report to focus on communication, so also showing graphs where you can really easily understand the topic. You can see how differently the resource extraction or material extraction is distributed around the globe. In Oceania, for example, is the biggest per capita material extractor, followed by North America. It can be seen that, apparently Europe is doing quite well and Asia and Africa with the lowest per capita resource extraction. I always stress this per capita because it's really important to notice this.

We have also used data of different sources to see where the materials are extracted but also about the water abstraction; how much water is abstracted per capita in the different countries, to see that this is also quite differently distributed around the world. It depends a lot on climatic conditions, on industrialisation conditions and so forth and so on.

Then, and this is an important issue here, we looked at effects, how the trade of materials has evolved or developed during the last years. In physical terms, ex. kg of wheat or lithium, it has increased. We always hear growth is important, here we see growth in trade and also in monetary terms, so how much money has been made by the trade in materials. The increase has been a lot steeper during the last years. It would be a good sign if I were now able to say, this is because finally we made it and we are paying the right price for the products because of their socio-environmental implications, unfortunately it's not the case and I have to disappoint you. But, what we see is that a lot of money is being made in the last years and lots of trade is going on in the last years.

Looking at resource extraction and then examining what it's like when we don't look at the extraction but who is the final consumer of those resources, we see that there is a shift. We approached this by not only thinking about the materials only after they had been extracted as a raw material being traded to another country but also, thinking of this headset I'm using, considering how in the course of its production materials have also

been used; and incorporating this into the ecological rucksack or footprint of this handset. If you considered those materials as well along the whole production chain, you see that the per capita consumption of materials has increased a lot in comparison to the per capita extraction in Europe. Europe is a large importer of materials, especially when you take this point of view.

Now think about not only the materials being used to produce a headset but also that in all the phases of production how water has been used; you use water in the extraction phase, in the processing phase, and so on. In the end, if I'm using this headset I'm kind of, in a virtual manner, also using the water which was used to produce this headset. Or at least, by using this headset I am responsible for this resource or water extraction which was necessary to produce this headset.

We see for instance that in one cotton t-shirt are virtually embedded 2700 litres; the apple is 70 litres; if we look at one pair of leather shoes you have 8000 litres. These are vast amounts and I think that of course it's important to consider where they were produced and how much water was used, but it is especially important to be aware of the fact that this amount of water has been needed.

Looking at trade and flows of resources, virtual flows of water around the globe, especially related to agricultural products, the bluer the country is the more water it is exporting – net exporter. Red countries are net importers. So what is clearly seen is that Europe is an importer, with many arrows pointing to Europe.

What this report also talks about is resource or material or water efficiency, it's really about, like Jacqueline McGlade said, not using more of more efficient things but using less of more efficient things. So we really have to learn to use less, I don't think this is especially diminishing our quality of life but we have to learn to use less and those resources we are using we need to use more efficiently, even to further reduce the resource consumption we are having. We also saw how for the world, the GDP has also increased in the last 30 years, and we also saw that the resource extraction during the last 30 years has not increased at the same pace but has still increased. We really have to manage to bring this level down still.

How to meet the challenge? It's really about getting absolute decoupling; resource extraction, it's not enough to have the relative decoupling, as I tried to show globally, it's really important to have a global perspective and not only focus on the EU but also on the implications on the world, this is why we need a policy framework which takes this perspective into account, but also which takes into consideration the interconnectedness of the different resources. We have so far focused on the climate change issue and the greenhouse gas emissions, which are also really important, but it's just as important to have a focus on the materials at the same time. We see materials and water, and greenhouse gases are all interrelated; I can show you similar graphs on how material extraction is going along with greenhouse gas emissions; it's also about land use, how much land is used to extract or produce or harvest all the biomass. Finally, it's really important to have at least those four categories into consideration. Thank you and thank you to all the colleagues at Friends of the Earth and I look forward to our next report, next year.

José Miguel Torrico – Lithium Expert, Friends of the Earth Chile

Lithium in Chile

Presentation: http://www.foeeurope.org/sites/default/files/news/Torrico_Presentacion_litio%5B1%5D.pdf

This is a project called REUSE carried out with Friends of the Earth Europe in which we have been trying to determine the consequences of lithium production which is an element that is more and more demanded in many countries, especially in the developed countries in order to produce batteries, air conditioning, oils, etc. I am going to start by giving you an introduction into the lithium mining situation.

Lithium is extracted in Chile, Argentina and in Bolivia in what we call the Lithium Triangle. We produce most of lithium in Salar de Atacama. The largest production of lithium is produced in this way, which is through the use of water mixed with minerals. And in this area within the triangle is where the biggest reserves of lithium are. What characteristics do these areas have? Well, geographically they are where we can find the driest desert of

the world, the Atacama Desert, where we have approx. 1mm of rainfall per year. So you can understand that water is a very valuable resource.

Lithium is extracted mainly in the Salar de Atacama, which is a salt lake. Lithium is basically produced by two companies, which operate in the areas I indicated previously. There are seven towns around this area and these towns are surrounding the salt lake, which is the biggest in the world at 80km wide. The water falls in the form of snow, which then melts and then through filtering the earth it gets to the bottom of the salt lake. The salt lake has smaller lakes where there is a small ecosystem that could already be affected by these extractions of lithium. Some of the animals and biodiversity that can be found in the area include flamingos, denakos, and more. The vegetation is very fragile and very susceptible to any possible changes that can be produced in the ecosystem.

The lithium mine is inside the salt lake. The process is mainly carried out by two mining companies which produce potassium and lithium. They produce about 95% of potassium which is afterwards used as fertilizer and the rest is lithium production. Lithium is extracted through the injection of water mixed with salt, then this is left to settle. After settling there is evaporation carried out in all these pools which can be seen. Afterwards the salt is exported to factories and finally is taken to the port.

The main producers of lithium in the world include SQM which is a Chilean company which produces 30% and Chemetal which produces 28%, so basically 60% of world lithium is produced in Chile. Then we have China, producing 22%.

It is used for air conditioning, for glass, oils, lubricants, ceramics, aluminium and batteries. It is estimated that the current 27% of lithium for batteries will rise up to 50% in the next 10 years. This means that demand has risen, between 7-8% in the past few years, as have the prices which have also risen from \$2K/t to \$6K/t. therefore we see there's a very high demand and important increase of the prices which is obviously creating more pressure for the presence of new companies that can extract lithium.

The situation that we currently find is the current lithium production can satisfy demand, but probably in the coming years the demand will overcome the production of lithium which will create more pressure on the areas of these ecosystems. What consequences can this have? We have the problems of the local population that live around these areas, as I mentioned; these are a series of populations which have traditions and a way of production which is altered by this type of mining. Then we have the extraction of water in this area which menaces the ecosystems that live around these salt lakes, therefore menacing also the biodiversity, which is unique because there are some species that could disappear, like flamingos, menakos, small amphibians and some small fish that live only in this area. They could eventually become extinct if the extraction is too high and therefore the subterranean water resources are emptied.

The message I would like to transmit here from Chile, and a country that produces; I would like to tell the EU or to these countries that are consuming more that it is necessary to establish a legislation on import in order to oblige the companies that produce lithium to take into considerations the ecosystems, the environment, the local populations, in order not to create an excessive level of destruction that will lead to the end of these ecosystems and populations. Thank you very much.

Henrik Lampa – H&M Corporate Social Responsibility Product Manager

Resource efforts at H&M with focus on water

Presentation:

http://www.foeeurope.org/sites/default/files/news/Lampa_Resource%2520efforts%2520Bryssel%5B1%5D.pdf

My role within H&M is CSR Manager for the product team, which is one part of the CSR organisation. We work to support buying and production mainly with regards to raw materials and life cycle thinking. H&M is a retailer, buying and selling garments; we are doing the designs, etc. We do not have our own production facilities, we work with suppliers which is what we have always done and we have around 700 suppliers.

Understanding water – I think we have done that for quite some time. Somehow we are not really selling water also but water is very important in the whole life cycle, producing our most important material source. It is also important in the processing parts and it's also important when the customers are using it in the garment care. The Life Cycle looks like a U curve – a lot of water being used in the beginning, and a lot as well in the garment care. And that is also for the raw materials which are natural.

One of the first things we did was get engaged with WaterAid and that was in 2000, donating; at that time not really realising what we could do ourselves beyond our own company. But then we have done a lot of things; I will try explain how we have started working going up the supply chain, working without own suppliers and then going to cotton fields, where I will end.

We are part of the Water Mandate which is part of the UN Global Compact and now we're getting engaged in something called the sustainable power-coalition, looking at sustainable products, and how we can measure that and understand what is significant if we want to change things in the life cycle of a product.

The first thing we started to do on water use in our supply chain was look at our wet water processing sites. When we included that in the audit form, we say we had 700 suppliers but the number of factories we had working with us was around 2000. A little bit more than 10% of them were wet processing; they were doing washing, dyeing, etc. so we realised that all of them didn't have waste water treatment, which was sort of painful but nevertheless the reality. So that was the first step for us, to take those factories that were located, some in India, others in Bangladesh, a few in China as well. We told them that they had to get water treatment processes, or they cannot work with us, and really supporting them in doing that. So that was more or less the first thing to do before we could really focus on what's going out of the pipe, that they have the capacity to treat wastewater.

How is the wastewater from a quality perspective? It is really a big oxygen-needing component, when they degrade coming out of the wastewater, the pollutants even in untreated water need a lot of oxygen to be degraded biologically, which is the main thing. It might be colourful but nevertheless the consequences to the ecosystem were of suffocation because they dissolve oxygen in the water. That was in collaboration with a bunch of companies to see if the legislation level was not strong enough that we would go for minimum requirement that we were passing on in the different production countries.

Leaving quality and going into quantity, we realised that quantity is really important. So we familiarised ourselves with different water scarcity maps, for example physical water scarcity and we could see that some of the production was in extreme water scarce areas and extreme water scarce basins. So first of all we did a hot spotting activity, to look at the wet processing units that we had that were consuming water, around 300 of them, and almost one third of them were located in extreme water scarce areas. Which meant that from a risk perspective, we had to do something because it meant that these risk factors might have very high costs of water by their own pumping system or by municipal supply water.

Now we are going into each factor looking at their efficiencies and looking at their total water usage as well. While also doing the mapping in a more thorough way, we look at seasonal variances because at different water basins the availability of water is really very different on the yearly cycle as well.

What we have been doing is capturing data for a couple of years for total water usage of these factories and also looking at their efficiencies. And on their efficiencies we have also asked all of our wet-processing units in general regardless of where they are located, even in an abundant basin, how they can come up with targets on how to use their resource efficiently. And these could be factories that might have a good efficiency but still could be very big and if they are in a scarce river basin they might be very risky in terms of production. We haven't yet come to a phase where we are looking at a new factory and have come to a very methodological way of looking if this is a risk or even say that we shouldn't go into a certain area if we are sourcing partners being suppliers.

We are also focusing on measuring and have started doing things as well when it comes to getting those levels down or requiring them to get them down. So, if you look at the water using factories they are washing or they are dyeing, we realise that there are a lot of ways, going back to the late 90s, that we get suppliers to decrease their environmental footprint. It was really going hand in hand with the resource use as well. Because if we can show them that the resources are costly and we can show them a way of changing what they are doing, they

would really go for it because the wallet is close to their heart and they are thinking it makes business sense as well.

But it's not always that easy, there is also a lot of psychology involved in this because we developed a toolkit, called the Low-Hanging Fruit Tool, which shows easy things to do to dye right the first time instead of having to re-dye by doing simple measures or whatever leakage you have or if you could recycle a process and so on. But we realized that for some of the factories, the reality is just too close to their nose, they cannot really handle this and handling someone coming from outside – we are not experts in dyeing to be honest. Coming with consultants, trying to make them change what they are doing. If they are doing what they are doing today, they know exactly what will happen; if they change, it's an uncertainty. So that requires, as well, leadership from suppliers, there are some that cannot really handle it and some that have advanced beyond the low-hanging fruit and some have the middle ground which would be really interesting to work with ones that realise they could change, they could save money, they could save resources, they didn't have to drill another well for something. And this programme includes energy as well, and looking at costs, energy is much stronger as a driver in most areas because water is very poorly priced for the industry in many countries and many regions, and I think chemical handling as well.

Last year, looking at how we could improve denim wet processing units, handling laundry of denim, they could save 50 million litres of water and did save 50 million litres of water and this year you will see that saved 200 million litres if you compare what they were doing and of course you shouldn't use that baseline for very long, because what they are doing today is the new baseline.

If we look at cotton – I've been working with cotton for quite some time – cotton is a nice fibre in so many ways. It is nice for the customer because it has moisture management and so on that makes you feel comfortable using it close to your body, it has low climate impact as well. And sometimes I think people are talking either good or bad about cotton, but it has lots of challenges as well. It's not just us liking it, the insects love it too because before it pops it's just a ball of sugar, making it one of the most chemically intense crops currently in conventional cultivation. It likes to grow in semi-arid regions, sometimes it's the only crop you can cultivate; but, looking at the current system, where more than half of the cotton is being irrigated, you have a lot of evaporation as well so it is a thirsty crop indeed.

This realisation came to us, around 2002-2003, realising we have to do something about it. There came reports from WWF and IIC, the private sector part, talking about the negative side of cotton cultivation. We started to work with organic cotton – I will touch upon it as well as it is not very water relevant, maybe the other way around sometimes – but then, also as a follow-up they said, the ones who want to move global cotton cultivation please join us, and that was the initiative later, the Better Cotton Initiative. We have been part of that initiative since the start because we realised that 99.9% when they started was not organic cotton; it was pure commercial cotton. And looking at how that can significantly improve from the social stand point, from an environmental standpoint, including the water being an important criterion and making it more economic for the farmers as well.

How is it relevant? I will not go into other criteria but from a water standpoint it is relevant, because the criteria are catching the blue and the green water, definitely when you are doing irrigation but also in rain-fed conditions - how you are managing your water resources, but looking at the farm run-offs as well from whatever you are using in terms of fertilizers or pesticides, you have a grey water as well, so there are criteria on both sides as well. The first year it was 68 000 farmers and this year, the growing season that is currently turning to an end, there is more than double that, being trained on how can you use fewer resources and have increased productivity, reducing the amount of pesticides, for example, by 90% if you are a good farmer, which is typically the biggest cost for a farmer.

Our target as a company, looking at the biggest impact from many different aspects to cotton cultivation, because our suppliers' suppliers' suppliers are actually buying cotton, which we want them to do, so we have said that the targets for 2020 are that all cotton should come from sustainable sources, which includes better cotton, organic cotton and recycling cotton. A lot of cotton is being wasted actually in the supply chain; almost half of the cotton going into the supply chain is being wasted in different parts.

On organic cotton we were the biggest users in 2010, it will still be a smaller part of the portfolio when we look at 2020 for us, and I think organic cotton farmers need to care about the water as well even though it's not part of those criteria. Thank You.

PANELISTS

Diderot Gweipo, Centre for Environment and Development, Cameroon

I think that after all the presentations we have heard, I found it particularly interesting to see that there is a common interest for the ground as well as for the mineral extraction, for cotton cultivation as well as for the user of all these raw materials and I must say that it has been really interesting, but I still think that some aspects are more specific to the cotton activity that deal with smaller surfaces compared to the mineral extraction.

I wanted to remind you of the resource context in cotton cultivation. In Western Africa, cotton was integrated really at the beginning of the 18th century and at first it was not a traditional local activity. Afterwards it was only that local people realised it would be a really lucrative activity and that is why they started to get involved with it. Then in 2004 there was a crisis in the cotton sector and this brought many changes. For example, there is a need for more ground, more surfaces. In Cameroon we've doubled the surface we need to cultivate the cotton between 2005 and 2006 and the consequence to that is that the cultivators were actually stealing the surfaces that were used for other kinds of cultivation, for example for livestock. Livestock needs bigger places but after this crisis cotton cultivators started to steal the grounds and it led to conflicts among other things.

There were crises between cotton growers and livestock breeders and there were also problems among the cotton growers because each one of them needs to live and be independent from one to another and as there is no more space to grow other kinds of crops which are a necessity for their life, we found ourselves with a lack of surfaces. It's like cotton had been stealing and evading the ground that was used for other kinds of cultivation or crops. And this brought another consequence, the loss of water. Even if these cultures depend on rain, it's true that these surfaces now used for cotton are actually spaces that don't belong to communities, and the water that is there either, it only belongs to the cotton grower; local communities cannot use this water anymore. And there are no compensations for them.

There are also some huge conflicts on the water consumption. You know it is only on a semi-arid surface that you can grow cotton but the more you grow cotton the less water you have, and it starts to get really complicated for the local communities to live and to survive there. The fact that these communities, actually, use the pesticide that is given by these companies not really knowing what the pesticide is used for, so at the end of the day the pesticide goes into the river, nobody has any idea that this water can't be drunk, is not potable anymore and this brings more and more problems, only because these people have no information. And as I said, as there are less and less surfaces available, you can imagine that there is a growing concentration of pesticides on this scarce grounds and soils that are available. Meanwhile the population has no idea what damage these pesticides can do and they don't take the presence of pesticides into account when they go to the river to get some water.

Or, they use the pesticides which are specific to cotton for other kinds of crops, but the result is not good or foreseen for this kind of crops, for instance corn. So you have big sanitary and social impacts and the cotton company doesn't explain to the local community what the risks are and doesn't give any sanitary follow-up to them so we really have bad sanitary consequences. I also wanted to say that the cotton company for the first transformation of cotton actually extracted water from the soil to do this and this water has not been compensated to the local community even if this source belongs to the whole community, so actually they stole the water.

Two main observations must be made. A fairer price must be paid to the producers. Price setting these days doesn't enable communities to express themselves and to voice their opinions. It's only once the cotton has been sold that they are communicated about the price. It gets to 4 months later and they have no means to influence the price. The second thing is that, given the environmental impact that is produced the communities have no way to know anything about it. It's extremely urgent that the companies that grow cotton or the international buyers must abide by regulations. There should be measures to control activities on the basis of indicators in order to prevent the negative environmental and social impact on the communities, in terms of space consumption, water resource consumption. These resources must be kept; they must be saved in order

to keep providing solutions to these communities to sustain them as they want to keep these activities. They are also entitled to a fair quality of life. Thank You.

Henrietta Fegerman, Team Coordinator for Water Scarcity and Drought, European Commission

Thank you very much and thank you from my side for these interesting presentations and comments. I think that we now have a good representation of some of the challenges that we're facing as regards water and as regards the link to resource consumption. I would like to try to give you a different perspective, or at least the perspective we have from the European Commission, from DG Environment from the water department. I know that you have had the pleasure of other representatives from the EC earlier today, so I hope I don't contradict anything that has been said earlier today but of course I come from the water angle.

First of all the basis for why we are looking into these issues is that we have seen that the balance between the demand for water and the availability of water has reached a quite critical level in many areas of Europe, what we call water scarcity. We've also seen and it was also very well illustrated in one of the slides, that this is also the case in many other areas of the world and even worse than in Europe. In parallel to that, we also see that we have more and more frequent droughts, a phenomenon that arises from lack of precipitation and we see in all our predictions this is not expected to improve in the future; quite the contrary as a result of climate change and as a result of socio-economic developments.

We also know that the reduced water availability has a direct negative impact on the citizens, on the economic sectors and on the whole European economy and the internal market. In 2007 the Commission first started looking into the issue of water scarcity and droughts and we produced a communication which highlighted some of the challenges that we were facing in this area. In this communication we identified 7 main policy options that we thought could be used to facilitate and remedy some of these issues. I'll just mention them briefly because you can see that they are all still very relevant.

The first one was to put the right price tag on water. We heard that cotton was not always rightly priced; the same is the case for water. We also saw there was a need of identifying ways of allocating water and also funding related to water, more efficiently. There was a need to develop tools to improve drought risk management; and to consider also additional water supply options. There was a huge need for fostering efficient technologies and practices as regards water management, and also the need to foster the emergence of a water-saving culture in Europe. Unfortunately we also saw that we didn't know by far enough about this so we saw that there was a need to improve the knowledge.

At that time we produced a communication from the Commission that set out what we called the water hierarchy. Well we said that it would be useful to focus on demand side measures, so meaning that we should try to save water before we started looking at the production of new water resources. Following this communication in 2007, we have made a lot of studies to improve this knowledge and the data collection and of course this is highly debatable and you could come up with many different numbers but some of the studies show us that there is potential for water savings as large as 42-45% in Europe when you look across all the sectors. So this very much confirms the water hierarchy that we have identified in the first place.

For the moment and as follow-up to this communication from 2007 we are still looking at other options for water efficiency. We have launched a large number of studies in the recent years where we look at, among others, the possibilities for water efficiency of distribution networks, in some of the distribution networks in the EU the leakages are as high as 90% and some places the average is going up to 50%. We look at the possibilities for water efficiencies in buildings, something that I am sure I'll have a lot of questions about because that's usually the case so I'll not say more about it now but remain open to your questions. Then we look at what is of course really important, the possibilities for water saving in agriculture and the link to water pricing in agriculture because of course the incentive to save water is very much linked to how much you pay for it. We have two on-going studies where we look at the link between the water saving and water pricing in agriculture.

All of these studies plus a large number of other studies that I will not go into detail about here, are supposed to feed into what we are developing for next year, the blueprint for Europe's waters. So the blueprint is something that was announced by our Commissioner already in his first hearing in the Parliament where he said that he would try to come up with the future of Europe's water policy. So what we are doing in

preparation for this blueprint is that apart from reviewing the communication policy from 2007 on water scarcity and droughts, we are also looking at how the Water Framework Directive is being implemented and are in a process of analysing 170 river basin management plans in so many different languages that you can't believe it and trying to come up with a comprehensive and harmonised view on how the Water Framework Directive is being implemented in the EU.

Then we are also looking at how the vulnerability of water resources is developing and to which extent these trends that I presented in my first few words, how they are expected to develop in the future. We are also looking at something that we call the Fitness Check of the EU Water Policy, where we look at how well the existing policy is fit to deal with all the challenges that we have now and that we expect to have in the future. So based on all this we will come up with this blueprint by the end of next year.

We already have some ideas of the areas where we would like to develop policy options. And I would just like to mention them again because they are relevant to everything we have heard today. First of all, we would like to see to which extent we can develop a more positive role for land use. As was already said in the introduction, land use is leading to a number of challenges as regards to water but it is also part of the solution. So we would like to see how maybe we can benefit more from the solutions and try to deal with some of the difficulties from land use.

We would like to look at how we could better use economic incentives. As you very well know, the Water Framework Directive has an article on water pricing and we are looking at how it's being implemented, to which extent it could be implemented better and whether there are other things we can do as regards economic incentives that will make this link between what we pay for water and what it's worth more clear.

Then we are looking at developing water efficiency targets and measures but we do believe that this is something that is very important, that has to be done at the local level. It has to be specific – we don't want to have a system where we develop targets for something at a very generic level at the EU because indeed the situations are extremely different and diverse depending on whether you're looking at water scarcity in Spain or looking at a basin with an abundance of water in the northern part of Europe and we would like to set up tools that will be appropriate for all of the situations.

So we will try to come up with, based on our modelling and what we know about development of water availability and the socio-economic developments, we will try to model what could be the potential water gap in the near future or in the short-medium term and then based on that we could say, for each river basin, this could be an indicative target; or this is how much we feel that the reduction need would be. But how this is to be done in practice, we feel that it is important that it will be dealt with in the river basins in the member states, the ones who actually can do this in the most cost-effective way.

The fourth set of policy options will be linked to governance, because we can see that there are still a lot of governance issues going on. The river basin authorities are responsible for developing the river basin management plans but they are not always responsible for giving out a fraction permit or for land use management so we're going to have to see how we can set up governance structures that are more efficient. Then we will have a continued focus on the knowledge base because again we still don't know exactly enough on what the water problems are looking like.

And then the sixth policy option will be linked to innovation. You have maybe heard about the innovation union and about the innovation partnerships. There has been a pilot partnership on active and healthy ageing, and there are plans at some point not yet specified to set up maybe more partnerships. There is a potential partnership being prepared on water efficiency. In this partnership we plan to look at all of these issues so looking at water efficiency in urban areas, rural areas, in industry and the link to everything that we've heard about.

Then the last point which will fit very well with what has been said because it links to the global issues regarding policy. First of all we would like to see how we can better integrate water in our cooperation first of all with our neighbouring countries but also with developing countries in our aid cooperation, but we would like to also see how we can indeed incorporate this virtual water footprint or water footprint or indeed, whatever you would like to call it, into the policy framework. We've had a study where we tried to see the possibilities to use these tools in policy making; unfortunately the conclusions were not super-positive but we

have not given up the hope yet that we can do something and try to use these tools and integrate them into the blueprint.

We are going to present all that by the end of next year and there will be a lot of stakeholder and public consultations, online consultations, where we will present it in much more detail and where you are very welcome to participate. Thank You.

Unknown participant: Follow-up question on your latter point. Yes we have to do a lot about water consumption at the European level and as was very clearly elaborated by LUDDA especially the import of water is important. Then you mentioned that you are looking to deal with indicators of the water footprint or virtual water and that studies up until now were not very positive about them. Could you explain a bit what problems were there?

So, part of the problem is linked to, as far as I've understood the conclusions of the study, the reliability of the method. So water foot printing is, of course, a measure that's very illustrative; it's very nice to know that you've used 7K litres for a pair of jeans but how do I as a consumer, or somebody compare that to the 2K litres that I need for a cup of coffee, or whatever the numbers are? So, it's a nice communication tool but to use it in policy there are still methodological issues that are a bit unclear.

Secondly, the way the methodology has been applied so far, it hasn't been very geographically specific so it has mainly been looking at the quantitative issues but it has not so much looked at exactly where these water resources are taken out, so it's maybe interesting to know that it was 1K litres but if they were taken out in an area where there are absolutely no problems, everything is being managed just fine, it's not as important as if they were taken out in a water scarce area. There are trends on-going and people are trying to develop this further. There are other strings that are going in the same direction from a more life-cycle approach and hopefully at some point these will merge and there will be a same standard or whatever they are preparing for but for the moment it's not absolutely clear how they can be used. It's not that the tool can't be used for communication and to illustrate the problem but really as a really solid policy measure we feel that it's not quite ready.

Stephan Lutter

Actually I agree completely, I think it's a very good tool but I am glad to hear that you are planning a big participation process because I think there is big potential in further elaborating the methods in figuring out how to distinguish the different types of water, where the consumption is taking place, if there is scarcity or not. I think this would also be a very important input also into the direction of the data collection because especially in the water area the available data is rather scarce. So it would be really important to get a better database so I think it's especially important that this incentive comes from the European Commission to make sure that this data is collected, that the methodology is proved and so forth.

Henrik Lampa

I think its realisations like this a bunch of years ago that has led to our 100% target by 2020, because, and when I talked about quality, I was really talking on the factory side where it's not really toxic but if you're talking about the things that kill insects, they are very toxic, that's what they're intended to do and they are being used in other crops as well where they are not really being designed for and sometimes they are very unspecific with uses as well so they have a very broad range of toxicological effects.

I think that is the reality and that's why the Better Cotton Initiative has been created by a variety of stakeholders which has been the beauty of it, we wouldn't know how to create such a standard ourselves. It has been the involvement of farmers from West Africa including Cameroon as well, it has been farmers from India, Pakistan, and Brazil to test this in the first regions and now it's sort of expanding. I think that's the way we can work; we can find something that means we have to figure out how to trace it, obviously, but that is looking at how you can reduce the water use, how you can tackle, minimise the harmful impact from pesticides, making sure the farmers are trained and that you can also see a measurable impact reduction, seeing the concentration of harmful substances in the groundwater and so on actually going down.

There are a lot of issues related to cotton cultivation in different countries; there are for sure a lot of social aspects as well.

Questions and Comments:

Q1. Patrick Mahon, WRAP, UK

Primarily to Stephan, very good report, it covers a lot of the messages that we've done on water in the UK context. In particular you have several case studies in this report, on lithium, cotton and others; are there similarities and differences both in the problems you see in those different case studies and the solutions to those case studies – do they have common messages, or not?

Q2. Keith James, WRAP

Question for Henrik, you mentioned in your presentation that cotton was a low carbon material. I was wondering what you were comparing to when you said this and whether you had changed any of your buying decisions or your specifications to require certain materials or certain designs of clothing to reduce the impact?

Q3. Tom Harrison, University of Dundee

We were told that 80% of lithium comes from a triangle comprising Chile, Argentina and Bolivia, which means those countries are in a very strong, dare I say, monopoly position, so they would be able to work together to introduce a whole range of environmental and social benefits for that area and offload all the costs onto an export tax on lithium, if you want to call it that. I'm lost as to why you see that we Europeans should solve that problem; you are in a much stronger position at the local level to get benefit for your countries.

Q4. Magda Stoczkiewicz, Friends of the Earth Europe

It's a question for Henrietta because Stefan mentioned that there is a scarcity of data on water and that the Commission hasn't really been looking at water too much. I'm just wondering how much, given the fact that I think we all know that the water crisis is just around the corner, it's the next one coming upon us? Is the Commission using the research and development budget funding to not only look at what's good for future businesses but also to look at what to do with the water scarcity and the environmental problems? I think there would be clearly a space there to demand more research done and more solutions found.

Q5. Michael Warhurst, Friends of the Earth Europe

The issue about water footprint and how perfect it is. One of the things we're trying to get is the move from having years and years of discussion on how to measure something to actually say, ok, we're going to use the water footprint. The Commission is in a very good position to make sure that it gets standardised, to lead the stakeholder process, I know that this is happening with the ISO footprint. The Commission can make things happen in that area, it's one of the things that it's very good at doing and it's just a question of saying, ok we've got the roadmap, it says water footprint, and materials, carbon, let's just do it. You're never going to get the perfect indicator, so is the Commission going to get down and do it so that we can actually start applying them because without those indicators we're still carrying on making policy, still importing products, but we're just ignoring these issues.

Q6. Mensah Todzro, from Togo

My concern is addressed to Mr. Henrik to say that cotton growing, cotton production is very harmful and does not only bring benefits, especially the growers, farmers themselves; my friend from Cameroon has raised the issue of pesticide use and abuse, but I would like to insist that the cotton growers do not even have the necessary equipment to be able to market their products themselves. I have pictures with me that I cannot show you just now but you can see young children who gather

cotton in the fields, they do not even wear shoes. Then processing equipment, and transport, the warehousing; between the field and the warehouse they have to carry the cotton on their heads to bring them there. So apart from awareness raising, training and information, what are these companies thinking of in order to better equip cotton producers themselves? Thank you.

Q7. Julian Kirby, Friends of the Earth England, Wales and Northern Ireland

Henrietta, you mentioned just briefly that one of the things you would like to see, I think, is better information for consumers, making choices on water. I wonder if you and perhaps Henrik as well, could comment on whether really, the onus of responsibility should be on consumers choosing on the basis of labels as to either buying a water efficient product or water very –inefficient product and I'd say the niche markets that that sort of approach creates. So whether actually the obligation should be on the companies and retailers to make sure that all the products are water efficient. By the way, your colleagues earlier agreed to all of our demands as well.

A1. Stephan Lutter

Perhaps to explain, we chose those three materials in order to have a broad coverage of the different types of materials in daily use in Europe. So you have the cotton in the clothing, lithium in terms of modern car industry, whatever and aluminium because we have cans wherever we look. Still, there are similarities. I wouldn't say that it's obvious that all three have the same problems of course, because they have different situations. Where you clearly see that there are similar impacts is on the social side, so really resource extraction or production in terms of cotton, it's really affecting local communities in terms of how the environment is changing, in terms of how they are integrated into decision processes and so forth.

Also, on the environmental side if you think about pollution of water or groundwater etc. this is perhaps especially the case if you think about the bauxite extraction in the Amazon, if you remember the Hungarian incident one or two years ago you have the same incident quite a few times a year but nobody cares. Also, I am told in Cameroon where we have already heard about the pesticide case and then it's of course the land use impact. This is again different in each case, you have the land use impact already heard in the cotton case, there is the land use impact case in Brazil where you have land rainforest clearing, and it's also a case in the Chilean case, although there is no competition by human beings, so it's not so obvious as in the rainforest case, but of course there you have an environment where there's land missing at the end.

A2. Jose Miguel Torrico

I was waiting for that question, I made that statement on the responsibility of Europe and I was waiting for a reaction on that. We are looking at the problem as a global problem, so the problem comes from one side at the producer but also of course it is the consumers who are putting the pressure to get these products. We don't mean that it only has to be solved by the consumers, or the customers, but of course it should be some policies in our own countries to try to protect or revert all the damages that this production costs. But in all those cases we have this kind of solution; for instance, in Chile, we just have some royalty, taxes that have been paid by mining companies but especially for lithium there is no royalty because it's a mineral that is not concessional, it's not given to others' companies so has no royalty for the moment.

As you know we don't have a strong country union or coalition in South America that will put in all those countries, Argentina, Chile and Bolivia, together the same policy. So probably, foreign companies are going to go there that have the capital to exploit these minerals and it's going to be very difficult if there is no policy coming from those countries that are consuming the products to get those countries into a position to oblige all those mining companies to put some preventions on the exploitation. I agree with you, a lot of our own countries, we are responsible for that too, I won't say that there is no responsibility at all in our case, but we are looking at it as a global problem so I think if we can act together it's going to be much easier to solve it.

A2. Stephan Lutter

Just from a European point of view, as a representative of European citizens I think it's really a very important question of our own responsibility, so far if you think about bilateral trade agreements, about different initiatives, direct investment initiatives and so on, it's really about getting the best access to cheap resources

putting a lot of pressure, and only if we are aware of our own responsibility are we aware of lowering the pressure and having a collaboration.

A3. Henrik Lampa

If we take first looking at cotton, when it comes to climate change, up to the spinning stage, if compared to conventional fibres; it has a low carbon impact. If you look into the dyeing process which is most commonly used for cotton, the reactive dyeing, you are up on par with polyester. So if you include the most conventional way of dyeing it has downsides. But if you look at the fibre stage taking it to spinable stage, it has a low carbon impact.

How do you measure this, how do you know what good looks like? If you want to train the scientists you have to know what good looks like as well so that is part of being part of the sustainable coalition as well, because there is a lot of life-cycle data, and there is scarcity of data as well. But what good looks like is something we need to work on beyond raw materials, and see how they interact as well. So you don't take something maybe as a raw material and then you have lost it in the dyeing stage. There is a lot to do there.

So when it comes to training of farmers we are doing a lot of awareness raising and saying what good looks like when it comes to raw materials and on cotton; I mean recycled cotton makes a lot of sense, land recycled cotton; if you do it as a design choice or if you do it in production it makes a lot of sense. Organic cotton is maybe not super-relevant if we talk about it from a water perspective. And better cotton, it will not be niche. If it's not 100% of items in the store then it's either organic cotton or better cotton; I don't think you can go to the store and think its niche, we will not be hanging tags, it would not be like a Christmas tree. In that sense, it would be choice editing; we take away the conventional way of cultivating, which in Cameroon and in Togo could include also. Looking at the practices, that's why we have realised we have to do something.

So if you talk to the farmers and say, do you want to get involved with Better Cotton Initiative because what's in it for them? They can sell it as conventional or they can sell it as better cotton, if they don't include they can just sell it as conventional. They have to meet certain minimum criteria, when it comes to child labour for example, on the social side. But the ones that cannot meet those minimum criteria but still want to do it; still there is responsibility for BCI to facilitate them to whatever program there is in the region or in the country, not to try to invent new wheels. So they can actually meet the minimum requirement which would take away those ways of cultivating. We cannot force it.

So what is our responsibility in that? Yeah, we should source it, but also the beauty of the better cotton system is that we have the responsibility to create the capacities. And how do you create the capacities? You train farmers to meet the requirements. They have to be verified as better cotton farmers. So we've spent, this year, 600K euros to train farmers and the Dutch Eco, IDA and Rubber Bank Foundation say, ok if you add money we will double it, which is actually a good cooperation because they think this can actually change global cotton cultivation.

A4. Henrietta Fegerman

I will deal with the easiest question first, the one on the relationship to the horizon 2020 and the future funding. What is easy about it is that it's clearly something that we will address in the Blueprint. So when we talk about knowledge based, one of the things that will come out of the blueprint is that we would like to identify really more clearly what kind of research need it is that we have because there have been attempts to have a science-policy interface for many years now. It has not worked to the most optimal way and we would like to try to improve that. So clearly we are putting money aside and we are trying to identify the best possible way of spending them in the future. But also I would like to say again that we believe that getting the data right or getting the data collected, is also a question of actually just putting together all that we already have, because maybe it's not so much a question of scarcity as it is a question of availability, because maybe the data out there in different research projects that haven't been fed into a system where they can be commonly used. Now that we are analysing the river basin management plans we will have a lot of data that we will put into the water information system for Europe, the WISE system, so there are platforms, there are data and we are collecting them, so it's not that nothing is happening. And then the last point on this is that in this innovation partnership, when it materialises, the idea is actually to try to go from research to innovation so to actually put something in place; so not only to collect data but actually to do something with it. We are looking at this from many different angles, but the reply is yes.

As regards the water footprinting and whether we will develop standards, as I said we had a study done for us where this was indeed one of the study options that were studied. The study is now available on our webpage, and we very much welcome comments. What we will do now is that we will feed some of these policy options that were studied, not all of them, but some of the most relevant ones, we will feed into the blueprint where there will be a joint impact assessment procedure for everything, that's why we said there will be all these consultations. As you know whenever we are proposing something from the Commission we will have to impact assess it, so while it might be one of the options it's not certain it will come out as a preferred option. You can look into what has been studied so far and what are the conclusions and please come with your comments in case there is something that has been missed.

So then the last issue, I understood it as whether we are putting all the responsibility on the consumers and since we didn't have a question on buildings I'll take the opportunity to mention it anyway, because actually when we are looking at water efficiency, I know that there are a lot of people afraid that we are going to propose a directive, we may not do that, we may propose something else. Anyway, what we are looking at are 3 different levels of improvements of buildings, one of them being related to products. And when we look at products, we're looking at a number of different policy options under there. Labelling is one of them but also minimum requirements are the other end of that scale. We are also looking at the whole possibility for product policy as regards water using products in buildings. Then the second level is related to the buildings themselves; the possibility is to improve performance of the buildings, and the third level is more horizontal and that is linked to pricing, information campaigns and so on. At least from that perspective we are looking at it in a much broader way.

SESSION 4: Rio +20: The green economy - More of the same?

Antonio Vigilante, Director of UN Office in Brussels

I'm not sure if the delay of Rio is to be welcomed; it certainly gives us a couple of more weeks in case we are short of time to properly prepare. I will address in my initial remarks perhaps the question of whether it is more of the same; of the same what is not clear, but I will try to address what is new in the discussion and the debate for the green economy.

Let me start by saying the case for green economy is almost assumed to be on everybody's agenda but the definitions of green economy vary tremendously. On our side I am very happy to adopt a UNEP proposed definition, which is an economy which results in improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities. In this definition already there is an expansion of the boundaries that are normally used in the discussion of the green economy because, you can see very well, the insertion of development of justice and equity are comprised in this definition. Now, I think the case for a green economy in this definition has been made very convincingly by a report of UNEP this year, including in strict economic terms, where UNEP has demonstrated that after an initial period whereby perhaps economic growth would be less than the business as usual scenario after 2020, there will be even by strict and standard GDP measurement criteria a significant increase in global growth due to the transition towards a greener economy.

But now, a greener economy working for the poor is an important addition. Working for the poor, we don't care about the greener economy per se if it does not also help to overcome poverty and introduce equity and less inequalities. So just a structure of the economy that reduces emissions is obviously good but perhaps is not good enough. And therefore Rio+20 cannot be confused with a strict definition of green economy and all the reports that are being issued underline this fact, at least they all pay lip service to it; the report from the parliament, for instance, even the conclusion of the council, the reports and the submissions to DESA of several agencies. Nonetheless, we must be true to this inclusion of a wider agenda in the Rio debate.

Rio is fundamentally a development conference; it is not an environmental conference. It is about to put forward, hopefully, a new paradigm, or a new development model all together that should be able to reconcile equity and sustainability. We have to look at the future with these two lenses, it's not enough to look with one of them; equity horizontally between the present generation and across future generations and sustainability for the future generations.

So I do consider that together with the climate agenda, the energy agenda, the equity and development consideration of Rio, the Rio sustainable human development concept should guide, not only the outcome document, but hopefully also the discussions in Rio. And try to frame and design the post 2015 development scenario. 2015 being the deadline of the present configuration on MDGs. So, we are also starting to look at what happens after 2015 and we expect that Rio may put us on a different track, on a better track, on a more sustainable track, also for MDGs.

Now, I think that if we then include equity in the discussion of Rio and the discussion of a green economy, we have to admit also that aspects of the instruments to reduce the green-house gas emissions need to be assessed case by case and not just across the board, because there are trade-offs and difficult and wise sustainable development choices to be made in terms of equity. There is plenty of evidence, for instance, empowerment of the poor and empowerment of the groups that are less privileged improve sustainability, but in order to get to that conclusion we have to inject distributional analysis in any sustainability analysis. And of course, in order to get anywhere, we do have to consider better global governance and better global environmental governance as one of the priorities and hopefully of the outputs of Rio. We cannot be so optimistic across the board, but certainly we do expect that Rio point at directions in all these areas, equity, global governance, environmental governance, not to speak about finance.

What is the good news? The good news is that even before Rio, we witnessed a number of good country situations, win-win positions, and a recent report by UNDP has highlighted some of them, whereby at least four countries, Costa Rica, Germany, the Philippines and Sweden, have managed to score well on at least six of

seven indicators that refer both to equity and sustainability; exactly emissions reductions, deforestation, water access and water use, air pollution, human development index and the human development index adjusted by inequalities.

There are countries that over the last 20 years have started to score well on some of these dimensions that are cases that are subject and should be subject, to closer analysis, to see what it is that they are doing well. Costa Rica of all these countries scores well on all the seven dimensions and is the unique case, although in the last 5 years there has been a slight increase in income and human development inequalities in the country, but is still way below the average of Latin America anyway.

Now the difficulty is how to integrate equity consideration into environmental policies and vice versa. To do, so I think that there are two dimensions that need to be considered. One, as I was mentioning before, a distributional analysis and a second is empowerment of the actors and particularly of non-traditional actors.

The distributional analysis because in any movement towards a greener economy and sustainable development, there will be winners and losers, there will be trade-offs that will be necessary, there will be direct and indirect costs and benefits. Particularly, for instance, in the distribution analysis and in the assessments that are done these days, frequently there is some consideration given to distribution effects on income, but just on income, not other dimensions or wellbeing. There are many examples that one could give, just to be concrete and express better what I mean.

If we consider what an increase in the price of kerosene can do. We all think that subsidies should be eliminated and therefore energy costs particularly for fossil fuel based energy will go up. Now if kerosene costs increase, probably a number of cooking methods will revert to indoor cooking with effects on health of people, particularly of poor people in African countries where they are cooking with burning woods. So, I am not saying that then we should lower or keep the price of kerosene down, what I am saying is that any measure that we take under the label of green economy has distributional effects and consequences that have to be analysed case by case. We cannot do it across the board worldwide, we will have to do it in the country, perhaps even on a community base. Understanding for instance the direct and indirect effects of measures and new policies such as cap and trade, that has an immediate impact on the price of electricity, and also entails distributional consequences. Of course, there are ways that policies can mitigate the effects on the poorest but nonetheless, each one of these measures cannot be taken just as a principle but has to be analysed in consequences, even indirect consequences.

The compensation mechanisms that have to be at play in those trade-offs are critical to be invented even, and they vary from the tax system to additional social benefits for those that have to bare the additional costs of measures. Another dimension of distributional analysis is the effect of a stream of events on the poorest, on the most vulnerable. We do not have to shy away I'm afraid from the catastrophic scenarios, if we take a long term perspective, the next 50 years, and start considering also the distributional effects also on countries and within countries on populations, in order to devise increased resilience measures. We need in order to have a good distributional analysis to improve this aggregated data. We don't have enough data at a country level, particularly in terms of sustainable indicators.

And finally, also there we have some good news. Some countries, for some of these measures, have already put in place some good distributional analysis of the effects of new environmental sustainability measures; for instance, I will site two or three. South Africa has done an excellent analysis in the framework of introducing an environmental tax, Vietnam the same, Ghana has studied in depth the effect of subsidies of electricity costs on different segments of the population and Laos has invented a program called 'Power to the people', which is not a revolutionary slogan but means bringing electricity, particularly to the rural areas and to everybody in the country, with a very good distribution analysis for instance of how to connect to the grid and costs and benefits related to it.

Now, the second element that can help us in this integration of equity and environment is the empowerment. Nothing can be more important in my opinion, because, when we discuss green economy and sustainable development scenarios, we cannot leave these to the negotiations only of governments and states, we have to empower civil society; we have to empower the poor to have a voice, to be informed, first, transparently, and to have a voice in the deliberations that are going to be taken nationally, internationally and especially at community level. The community level decision making in environment sustainability is becoming more

recognised by the day, and it is proven that when this empowerment happens, when those who normally don't participate do participate, including for instance a special effort to include women, this has an immediate effect in terms of increasing sustainability. So it's not just a question of democracy and social justice, it's a direct impact on the sustainable outcome or whatever is being discussed at policy.

I also want to stress in that case the impact of national parliaments, CSOs; all these actors have to find a proper place in the next decades in the debate about sustainable human development and a greener economy.

What is new? Is there anything new in green economy? I think there is a lot. The debate on green economy has sometimes come up with surprises. Beside the fact that I think it's quite fairly recognised that the development model has to be changed, worldwide in general. And this is not an arealogical or political position, because if we think carefully, all different major political and economic development models of the future have failed. The command and control economy of the Soviet Union has failed, the relatively free market economy has failed, and so does the liberalising socialism of China has failed, at least in three respects. What we see these days is increasing inequalities, unsustainable development from the environmental point of view and you help me to say that this financial crisis of the last 3-4 years also failed economic models; the failure of the regulation.

So, obviously we have to invent something else, which points to the return of planning and the return of industrial policies, which we thought were buried as politics and policies of the 70s. I'm afraid that in order to transit to a green economy, we have to introduce and use a lot of planning of state and community intervention in the economy, and a lot of new thinking about the role of industrial policies at the national and international level.

What is new in the green economy is the need for a new measurement of development and wealth and therefore we may hope to overcome the GDP once and for all. My last point is to say the debate has also highlighted some very serious limits we might face in the journey to a greener economy. Leaving aside the discussion on finance, which is very complicated and very well dealt with elsewhere, there is an issue of capacities and there is an issue of culture. We may face limits in terms of national capacities of coordination as well as scientific, technical and political capacities in the country to be able to negotiate internationally and to devise the national strategy required, and the coordination both at the global level and the national level will probably show limits to the capacity to orient the country towards an economic transformation the green economy requires.

Jakub Wejchert, DG Environment

Looking at the question again, more of the same, yes or no; in a sense, Rio can come up with some of the same and also some of it will be different. In a sense, our objectives are the same and they haven't changed since Stockholm, since Rio in 92, since Johannesburg, in a move towards sustainable development that encompasses its three pillars, the societal, the environmental and the economic. In some ways however things have changed – there we see that the role of the economy, the role of business and the role of non-state actors has been growing and becoming increasingly important in the last few years. A means of attaining sustainable development is this green economy concept that, as Antonio said, has been discussed quite a lot over the last months in many circles. When we think about the green economy, one has to think carefully how it can encompass the three pillars and how a green economy can also relate to the important aspect of resources and the limits of the resources we have on our planet in the years to come.

From the EU's perspective there are two policies that are very relevant to his. The first, is the Resource Efficiency Roadmap, which the Commission announced about a month ago, which is looking at many of the actions that have to take place in Europe to start moving towards a much more sustainable form of managing our resources and of being efficient with our use of resources. Now, that is a plan primarily directed at the EU itself. Of the EU which has been working out a submissions to the UN on Rio, and this is a process which has been going on for a number of months, even a year, or more, for which the Commission, the European Parliament, the Council, the Committee of the Regions, the Economic and Social Committee, have all contributed and as of the 31st October, the EU made its submission for Rio to the UN. A lot of the things I'm

going to talk about now are going to explain a little bit more about the proposed ideas by the EU, for what the EU thinks Rio could deliver.

I was talking about the relationship with the resource efficiency roadmap and of course the international aspect of that is a lot of what the EU is proposing with respect to resources and with respect to job creation and the eradication of poverty on the international scene. So, as we've seen the definition of the green economy is not an easy one and perhaps there is no strict definition of what it is. Perhaps it's better like that because a lot of countries have particular national circumstances that put them in different situations. But essentially, it is a kind of economy that can secure growth and development whilst at the same time ensuring wellbeing, the creation of jobs, eradicating poverty and, also, preserving the earth's natural capital. So in this way, the green economy ties in the three pillars of sustainable development.

We have to think carefully how the green economy really relates to both resources and poverty eradication. Now, there is an opportunity here for countries all around the world. In many developing countries, they are very dependent on natural resources and we have seen countries who have really grown in a green way, and in an equitable way, based also on their natural capital, for example Costa Rica, as was mentioned. So, the natural resource base is essential for a green economy. The natural resource base is essentially water, land, soil, sustainable agriculture, forests, the oceans, how we fish. These are all essential aspects of the basis of a green economy. There is an opportunity for many countries – you mention some of the industrial problems of the past in the industrial countries – to leapfrog directly to a greener path.

Now also for developed countries the green economy offers opportunities. We know that in the EU, for example, if you consider the areas of water management, materials recycling, materials management, as well as renewable energies, already in the EU that constitutes about 2.5% of GDP. These are areas that are not insignificant. They are substantial areas of the economy that are growing and we see similar examples around the world.

Dealing with the aspect of poverty and addressing poverty in a deep way, there is a strong link essentially between resources and basic subsistence, in other words, aspects such as water, how land is used, the state of land, how agriculture is performed, access to energy are all essential ingredients in addressing and moving people out of a state of poverty without access to certain basic energy, living conditions that we take for granted here in Europe, are not possible.

Amartya Sen, who is a Noble Prize winner in Economics, of Indian origin, basically says that poverty is the state of lack of capability. Capabilities are broad; they include lack of living in a democracy, capability of receiving an education, the capability of having medical care but also the capability to access fresh drinking water, to be able to cultivate land in a sustainable way, and to make use of our environment in a healthy way. So this connection between essentially the environment, our resources, the economy and providing livelihoods that are decent are essential components of a green economy.

Let me pass a little bit to aspects of the EU submission that was made on the 31st of October. This is now publicly available on the UN website, alongside about 70 proposals from countries around the world, and over 200 organisations. The EU submission discusses these aspects of the important interlinkages between resources, poverty, equity and the role of the green economy in moving forward the sustainable development agenda. And the proposal is essentially to address a range of international actions. You might call these beams or lighthouse type actions whilst also supporting bottom up actions at national level where countries seize the opportunity of moving towards a greener economy.

So some of the actions proposed in the EU submission include for example at an international level, the need for measuring progress and indicators, mentioned already by Antonio. This is an essential long-term objective that we have to try and nail down to move beyond or to complement GDP only as a means of measurement. There is an expression, what you measure is what you get, and if we only measure GDP as a measure of progress that is what we get as a form of performance and associated with that is the degradation of the environment and in very many cases, also not equitable living conditions. So this aspect of moving beyond GDP to complement GDP and as part of that the EU sees the development of national accounts as being key to this, in other words, the ways in which countries around the world carry out their accounting and have standards for this. The UN has done work on this for many years already; there are contributions on indicators also from Eurostat, the EA, the OECD and many more organisations. But Rio is an opportunity to put this concept of

measurement and indicators down as an important international objective that has to be addressed. That's just one example.

There is also in the proposal on this kind of cross-cutting measure, a capacity developing scheme, to help countries move towards a green economy. There are many examples of green economy action plans that are being explored and being put forward by countries; there are many plans already in place that relate to green economies such as on climate change and other aspects. There is an opportunity to bring these together and provide a form of consultation and advice on how countries can plan the kinds of elements that are needed to help a transition to a green economy. And these include, a national action plan, these include sometimes regulatory measures, market based instruments and incentives.

I won't go through all the aspects but let me just mention one or two more on specific areas, such as on water and on the water-food-energy nexus, which is also a very important aspect. Not only considering, water, energy and sustainable agriculture as separate, but as combined and essential ingredients also in addressing poverties. Also oceans, chemicals and many other areas. So these are the basis of the EU submission.

A very important aspect and this is still being developed by the EU, is essentially means of implementation. The UNEP carried out an analysis of how much it takes to move to a green economy and their estimate is about 2% of global GDP per annum in the years to come. This is a significant figure and its way above what public money can come up with, what overseas development assistance can come up with. So, this points to the need for looking and combining private funds, investment funds, donor funds, and new forms of financing and new forms of enabling conditions, and new forms of capacity development that is needed to move to a green economy.

So in the next steps the conference is going to take place in June, moved also because of the important G20 meeting that is going to take place in Mexico and there is also the important relationship with the green economy, which will also be one of the aspects on the green agenda. What is currently happening now is all these submissions are appearing on the website; what we'll be doing on our side is analysing these. The UN will be preparing a zero draft for the beginning of next year; there will be a sequence of negotiation meetings, once a month for a week in the months to come and then culminating with the event itself.

Essentially, Rio+20 is an opportunity not only for governments and countries to get together, but also for civil society and business, NGOs and a range of players to move and contribute to this important milestone event in the transition towards a green economy and also on the path towards sustainable development.

Jacqueline McGlade – Executive Director, European Environment Agency

European resource use in the green economy framework

Presentation:

http://www.foeeurope.org/sites/default/files/news/McGlade2_European_resource_use_in_the_GE_framework%5B1%5D.pdf

I would like to kick off by asking ourselves what is a green economy and then looking at that definition, really begins to say, well, what is it that we're supposed to measure? What are the signals, the indicators that tell us we are going in the right direction and the trends are going in the right direction? One of the challenges I think we have is that, if you think about ourselves sitting in this room, 2020, that's only 9 years away. So what are you going to be doing for the next 9 years? Because frankly, most of you will still be active in the jobs you are in, so it will be good to ask what you are going to do; we're going to ask the rest of the world a whole bunch of things as well but just mull over that as we're going through the day.

I think it's already been hinted at. We keep hearing about different nexuses – water-energy nexus, the food-water-energy nexus, the housing nexus- and if you've been in the environment business, like I'm sure many of you have, we're all very familiar that everything interacts with everything else. And yet still, we have policies that are, essentially silo policies. They do not have the interconnectedness that we are now demanding of

ourselves and of governments. So there's a lot of work to be done and we are, essentially, sitting in Copenhagen with a remit to produce integrated assessments on the environment. It's an immature field.

We are just beginning with our colleagues in the Commission to understand the meaning of the word co-benefit and our first foray into that discussion was with all the air quality legislation. What have been the benefits after all? It turns out that of course there are benefits to human health, of the order of 46 billion. But, there are also co-benefits of what you do in greenhouse gas discussions because air quality and greenhouse gases kind of sit together. So, climate and air quality; actually we have a climate and energy package, which is interesting. It is interesting because if you look at the drivers of the short-lived greenhouse gas discussions, and we're about to go on a discussion on black carbon, it's an interesting Cinderella, because on the one hand you can fix things, that are short-term. But there's a long-term problem and there's a payoff.

So there are non-linearities and a very complicated history which means that we can't afford to manage the atmosphere gas by gas, silo by silo. We really have to think of the atmosphere as very interesting mix of chemicals, of dynamics and of sources, pressures and drivers. But that science is still relatively immature. So, in a way what we're looking for is not only knowledge of what's happened in the past, but really pushing the research community to come back with answers very quickly as to what would happen if we tried to suppress black carbon by doing a whole bunch of interventions. What will be the impacts, so to speak, not only on the environment but on air quality as a whole?

It's not going to be easy. Dealing with these different nexuses brings us to a tremendously challenging issue which is about speed of connectivity. I spoke this morning about hyper-connectivity, and it is real. But the problem is people want solutions at the same time as having the problems. Trying to find solutions at the same rate means that we will all be challenged, whether it's on the sustainability podium, or a financial podium, you can see that there are not many tools in our kit.

If we look at road transport, here is the absolute, signature problem. Transport is something that binds us together, particularly in Europe. But even if you go to Brazil, you look at the road plans that are being laid out; you can see that there is a huge motivation. It binds us together socially, economically but it also has a downside, measured through fragmentation. If I was to be asked, what is the one single driver for the loss of biodiversity I would have to say roads. Because roads fragment; there's a huge meshing issue around Europe, and tomorrow when we launch the transport report there's a very interesting map with an analysis of that meshing, which shows that frankly, most species haven't got a chance in Europe, if you happen to live in the north-western part of Europe. So, it's really in our own hands, we have a transport that will never really be able to help biodiversity, if you happen to live in this part of Europe.

Now, we're not about to tear-up all the roads because of all the social and cultural benefits that come from it. But, it must be said that the biodiversity action plan has to think out how we will manage ourselves and not just have blank targets, but perhaps be a lot more sensitive about what is achievable and how we should use the space that we have.

Food, drink, housing, mobility: the things that we care about. Some figures, in terms of emissions, in terms of material use, 77% of GHGs in total come from this combination, more than 70% of material use comes from this combination. So, it really is a matter of, what are we going to do in the next nine years before 2020, if we're going to try hit some of the targets that we've set ourselves.

One of the areas that I think Rio could address is to do with food. We have huge wastage in the food chain, and there's been a debate recently in parliament about food wastage on farms, before it even gets into the food chain. If you listen to agricultural specialists and look to the IPCC reports, at how the world in a sense anticipates that there are going to be food shortages, I have to hold my hand up and say, hang on a minute. There are 10K edible species of plants out there, we use about 70 of them and we have 5 staple species. What would the world look like if we turned our attention to the other 9930 species we could eat?

I think it's fascinating that in the run-up to Rio, working with chefs, from all over the world, who are really promoting the idea of foraging, of actually going out and looking at what is around you, you have individuals such as the chef who is maybe going to be the next president of Peru, who has transformed the Peruvian economy from one simple perspective; he said 8 years ago, why should we be growing green beans for Europe?

Actually we should be growing and looking for food for ourselves. But we don't have a Peruvian cuisine. And so, he went about trying to do just that, he took 27 varieties of potato to begin with, he now has 80K young chefs being trained; the whole transformation within the food and within the food system is quite remarkable. It's seen sometimes as a fad in Europe. We have Noma in Copenhagen, the world's best restaurant built around the idea of foraging, we have Faviken in Sweden; we have many chefs in Turkey, all over the place, who are promoting foraging. People thinking that it's just something nice to have on the side, but they're really onto something, because what do they do? They go out and they observe biodiversity, because they reckon they could eat it; but you eat it in a sustainable way.

Thinking about our food and agricultural systems, fundamentally from the biodiversity that sits around us, as opposed to being hostage in a way by 5 singular species, is something that I think is worth thinking about. And that will be one of the messages that will be brought to Rio by a whole group of other people who would like to see the security of food not being premised on just a very small number of species.

Rio presents some real opportunities. The challenge I think we have is that we need to really think about more sophisticated approaches; it's about engaging people and exemplifying the four e's. This is really quite tricky, because now we are talking in a sense about participation in a global way, of many other sectors and people working in completely different ways to how they have in the past. To reduce impacts, actually they're all going to have to work much better, whether it's tax reform, whether its enforcement or implementation, whether it's out improving capacity; actually, everything's got to work. And that is our challenge – how do we do that, from the perspective of what has essentially become either an environment issue or a development issue.

What we've said in our reports is that there has to be this paradigm shift. The paradigm shift is very much about making individuals and governments in particular more responsible for particular parts of the puzzle, so that you are not simply saying, you make sustainability work locally. What we know today is that given the pressures on the planet you can't have local sustainability without global sustainability. It is pretty clear now that you cannot decouple yourself from the global setting, whether it's in the way that we trade, the way the climate works, there is no such thing now as local sustainability. Regime shifts are happening in small ways all over Europe, all over the planet.

That really senses that you need more information to work more effectively, locally to understand how the global system is really going to affect you. The four groups of players, governments, citizens, parliament and business – I distinguish parliaments from governments because, quite often, they are completely different; it is very important that those people who are in parliament, who are there for whatever reason, have a voice that is seen and heard.

One of the things that you see is that many traditional societies have their own way of developing and delivering a consensus on at least ideas of sustainability. I think we can learn a tremendous amount from how indigenous peoples and many others around the world have actually solved the uncertainties and the problems of shortages in the short term, but also long term changes.

It comes back to what my agency does which is to measure things in a way that is meaningful, with the right scale, at the right time, and really helping people understand because they have the information at their disposal. We have taken on this challenge in a fundamental way. It is said that it's all been very convenient for Europe because we have a lot of legislation that actually asks governments to report either to us or to the Commission, but that's just not good enough now because we need to know about more things, more quickly.

What we are doing in the end of the year is launching a global public service. It's called Eye On Earth, it will essentially bring together – it has already, after many years – all of the software and hardware industries, so that you don't have any more the problems between the Microsoft people and the Apple and Opensource community, that's all gone away. This is non-proprietary, so it is open for all to use, we have had significant offers from the IT industry in terms of how much storage space will be available and so on. But the most important thing is that it is premised on the idea of sharing environmental information.

This has come from a European discussion, it was agreed to in Astana in September by 53 governments, including the US, Russia and Canada, as well as some very interesting countries, to share their information about the environment on a meaningful scale. To give you one kind of flavour, for example Russian information

is publicly available now through the Agency and is available for the whole of the Russian Federation, every building every place at the heart of Russia is now in the public domain.

This is what we've been trying to do – to build a spatial infrastructure, premised on quality assured information which will actually allow people to understand what the heck is going on around them. You can also, on the fly, make very interesting services. Something the Parliament and others are trying to oversee is maritime shipping, flowing over marine protected areas. This service is put together by someone in the office, in about 20 minutes, showing a lot of ships going where they are not supposed to go. So, immediately you can offer services which do not require huge infrastructure and this is the point about giving information to be used, quality assured of course at source, to help people actually understand the job of work that needs to happen.

So we can no longer afford to be elite about information and this is what I see Rio having to do, is to put things (OK this is a sophisticated end) about nature on a Smartphone, but essentially it's got all the alien species, invasive species on there and will actually tell you which ones are there and which ones need to be dealt with. So applications, access to information, will enable people to genuinely see on the ground how the environment is changing, but this could be used for all forms of e-government.

We can have tweeting for disasters; we tried it for a flood – it works very well. We can see what's happening; now this might come as a big shock, I hate to say it but it's happening already, so better have quality assured information which you might actually rely on and trust, to build your own idea of what is happening and this is exactly what happened with Fukushima. When the voicemail went down, then actually people started tweeting and it's because of that that many people's lives were saved. The Russians built their systems very much in response to that, round the radionuclide clouds history.

That is to say that the world behind the scenes is now as one. We can enable people who want to keep data secure, who want to publish their data, sell their data. I think genuinely our job as an agency is to try to mobilize into the hands of citizens the possibility with some capacity training that they can take on the challenges of becoming part of the green economy and they don't have to wait for some long-term development programme to somehow deliver it in 5-10 years. That they can see and be connected in a way that is actually meaningful for their local scenery.

So I hope that Rio, we will have shared environmental information as one of the fundamental sets of principles to enable real development to happen on the ground. Thank You.

PANELISTS

Gustavo Hernandez, ALOP

I would start by welcoming the main message from my UN predecessor, addressing that the main model to be brought to the next Rio+20 big meeting should be a model that places human beings and justice at the core. Second, I think very important the distinction he makes between this model and the model proposed by the EU as it is laid down actually in the communication '*Rio +20 Towards a Green Economy and Better Governance*'.

I will try to clarify what are the main foundations of this green economy model, in order to see how different it is from other models being promoted by different actors at the international level and also at the level of civil society.

If we really read this last communication released in June, we see four main elements. First, the issue of growth, which is present and is addressed not only as any kind of growth but specifically promoting the right kind of growth; so we wonder what kind of growth that is. So it's clear when it's referring to resources as water, energy, land, forest as well as materials that are the green economy's key growth markets. Basically the idea of growing, which is not stopping at all in this new model is now more focused on these green elements. This of course applies in particular to developing countries, they have a specific situation place in this overall system and of course there is the reference to good governance through respect for land rights and ownership.

The way we see this paradigm, we perceive it as competing with the paradigm of sustainable development. That's our main preoccupation and our main proposal is of course, bringing the social dimension back. This morning we heard from the Commissioner of the need for a transformation. He said that we are not in a sustainable path and we need to change and we fully agree with that. And this change has not only to do with technological change but also other issues. Our main message is from civil societies bringing the social dimension back to this model but not only the social dimension as such, but also the cultural dimension. Here, some hints to give you some light on what is going on in some Latin American countries.

So much in Latin America that we consider them as being biocentric in nature, which means that we place the life at the centre of a whole new paradigm which has very particular ways to this. For example, resources and biodiversity as common goods, value in itself which is different from market value and of course different processes of citizenship and participation in order to construct these new proposals from bottom up. That's, in many ways, the way we can understand the different proposals that have been presented before, not only at the political level but also at the business level. We are talking about post-instructive model, a post-material and a post-development economy, which places biodiversity as a core.

What is new about this model is that it is going to be brought from the EU, the way we see and read from civil society in Latin America. We actually think that there is a significant shift from the past, from the current macroeconomic model, within that there is not a significant break in terms of equality as a fundamental element of sustainable development is totally missing.

But, we think that there is indeed a huge very important change, break – if we compare the rhetoric that has been used before, 20 years ago in 1992 and now. And I think that the key in these changes are rhetoric based on the commoditisation of nature. I come back to the main elements of the resources to be the boost of the new growth of economy: water, energy, land and forests. That is for us, in my view, the main green part of this new model. In many ways we hope that this new, green economy model will not replace and/or compete with the sustainable development model.

Mark Pallemarts, Institute of European Environmental Policy

I would like to say a few things in response to what the introductory speakers have said and in response to the theme of this panel, more of the same? If I have to answer that particular question, I must say that looking at the positions taken by the different institutions of the union their contributions to the UN proprietary process, and the state of that process itself, my answer to that question is that yes, I am very afraid that we are going to see very much of the same in Rio and in fact I think there is a serious risk that we may even backslide in terms of our understanding of what is sustainable development and transforming unsustainable patterns of production and consumption into sustainable ones, really entails.

What I sense we are witnessing when we look at the latest political development in the official policy debate, i.e. the council conclusions adopted by the Environment Council on the 10th of October, setting out the EU's position for the Rio+20 Summit, I think we can see there is a true abdication for leadership to the part of in any event governments in the EU. It is quite interesting to compare what the Environment Council agreed upon in October with what the European Parliament proposed two weeks earlier in its resolution adopted on the 29th September, which was quite an improvement I should say, over what the Commission proposed in June or July, which personally I felt was an extremely disappointing document which clearly demonstrates the complete lack of ambition and leadership that we have at the EU level right now.

Let me explain why I think that. Essentially, the Council building on the Commission's proposals sets out two main goals for the EU to achieve in the Rio+20 process. Those goals of course are modelled on the main themes of the agenda, the green economy and institutional framework for green development. Now let us look at each of them.

The green economy – I won't enter into the conceptual debate, personally I think the green economy is a very ill defined concept which actually risks taking us back before the age of Rio, but we may discuss that in the debate if people feel like it. Let us assume that we have some idea, at least, in the EU of what we mean by

green economy and how that relates to the rest of the economy because in reality of course we have a huge brown economy with some tiny green islands which are currently growing, luckily in Europe but not in any way or manner that is sufficient in order to achieve sustainability.

Now what do EU governments have to say on this question? Based on the Commission's proposal, what we want out of Rio is a roadmap for a green economy. Well, this seems to have become the new buzzword, also within the EU; the Commission is proposing zillions of roadmaps. One can discuss whether this concept is meaningful in the context of European governance putting forward this concept of roadmaps in a United Nations context is not particularly smart in my personal opinion, because in a multilateral diplomatic institution the concept of roadmap is unfortunately associated with the Middle East peace process, which is *the* example of a roadmap, which I think is the first time the UN used the term, in the context of multilateral diplomacy, and certainly everybody will agree that that is not exactly a recipe for success, the roadmap for the Middle East peace process.

Apart from the symbolic connotations of this, the question then becomes, has the EU itself, because this is all about European leadership, we still pretend that we are leading the world on the transformation to sustainable development and all that. But, if this is the case, do we actually, in Europe today have a convincing roadmap for the transition to what we call a green economy? Well, there have been some proposals, the Resource Efficiency Roadmap, the low-carbon roadmap; there will be further roadmaps, etc. too many roadmaps. It's like you don't end up knowing where you're going anymore, it's like the Europe 2020 strategy with its seven flagships – have you ever seen a navy with seven flagships get anywhere? This is just pathetic!

What do our ministers have to say about this? I quote from their conclusions "the private sector through investment, trade and innovation has a key role to play in delivering a global green economy in the context of sustainable development and poverty eradication", that's the language from the UN resolution "and governments should help to ensure that this happens". So this, now, sums up the level of ambition of political leaders, in Europe, on this crucial issue of eradicating unsustainable patterns of production and consumption and coping with challenges of poverty.

What is the role of governments? Their role is to enable, to facilitate. Well, I personally don't think we are ever going to get there, if governments themselves and public authorities in general, dare I also refer to the European Commission, view their role to be to oil the wheels of the market. The role of governments is not to oil the wheels of the market, not even to oil the wheels of the green economy; the role of public authorities in Europe and in the world is to set standards, to impose limits, to provide economic incentives by using the fiscal power that governments have and on all these crucial issues, the EU's proposals to the UN are completely vacuous.

Now, if one then looks at one of the themes that has been referred to by several speakers and I think is a very important one, is the issue of measurement, the issue of indicators, the issue of how do we measure progress, GDPs. Now this is an issue in which a few years ago, the Commission and the Parliament played an important role launching the debate, we had the conference in the European Parliament 'Beyond GDP', it was a significant success, also internationally – lots of ideas, lots of proposals came out of that. Well perhaps in terms of Rio+20 and ensuring that something tangible and meaningful comes out of this process, perhaps we should focus our ambitions on something that is achievable, that is not revolutionary but maybe quite important in the long run.

And that is this issue of metrics, of how do we measure our progress, prosperity and well-being. I would urge our institutions to be a bit more specific on that. I note for example that whereas the European parliament call for the Summit to actually deliver this new system of metrics, the council in its resolution says that the Summit should contribute to the adoption of new indicators. Well, these indicators, GDP, the concept of how to measure it was decided in the framework of the UN. This is something that the UN can deliver so perhaps it is a goal that we should be focusing on. Thank You.

Søren Søndergaard Kjær, Danish Ministry of Environment

Very briefly, I think that more of the same would not be enough. To that I think you can say that that has been the general voice today, so then what to choose in order to improve it and make it better? Going over and you can say some of the posh words from the business world, I think we can say what we have experienced so far is that there is research in the periphery for new weak signals and then bits and errors and then turn around your business. I think the green economy, to me and to the new Danish governments if I understood what are the drivers behind that is that they have seen that there are weak signals, there might even be clear signals, that competition for resources, increasing prices, will eventually show up and for that reason we have to act now.

So we've tried to build scenarios for how to integrate this information in our economy to make it greener and to turn around our government business in that perspective. Allow me to get a bit more into detail. I think we can say we come from an old school position in our environmental world where we try to protect the resources, protect the nature and the water but it's just to maintain the quality. And in the future, we have to make this protection, because the environment will provide us with decisive resources for economic growth as one of my colleagues on the panel said a few moments ago, so I think we have now a very strong agenda. I think the green economy, green decision, green growth, whatever it is called, is so strong that I feel that is also the spirit of the Danish government that was elected a month ago, is that the environmental case is back on the agenda, no doubt about it.

The Danish government is right now preparing a mandate because they are going to parliament to discuss how to meet the target of a 35-40% reduction of its CO2 emissions in 2020. It's a huge task. We had this discussion among ministries, the green minister, to say well, no problem, we will make this decision, we accept the cost, with all industries and we will see how growth and new employment opportunities then will flower in the new sectors. Then there is this battle going on because it is definitely like religion; some say it would never happen; the green growth jobs and from our perspective we say there is no alternative, because it is the future.

I think the challenge that we face here is that we should in fact be a lot better to have a concept to say how the initial investment for initiatives in the green economy, that is a cost to society, though it might be budgetary costs and there might be some short term costs to at least some sectors in the business world. The benefits are in the long term for society and for the business world, as well as other sectors.

We need a concept that we can rely on and discuss, because then you can get down to political decisions, saying well, ok, if that's the cost now, but we see the potential is there, we agree that it is a good calculation and we can make a wise decision. So I think we need to develop those kinds of tools, in order to move forward. Frankly, I disagree that we need more indicators. We need future oriented decision tools, then we will come to a position again where we need to, like in the previous session there was this focus on how is the resource efficient uses of water for something like lithium, we need indicators for that but we definitely know enough to make decisions, we just have to put it in the right conceptual way to enable the politicians to make decisions.

I think we should also consider that things are moving fast, allow me to go back to the previous session, the SERI presentation was very interesting because you had this water walking around the world and the experience from H&M saying that maybe we should recede development where water intensive production will move to places where there are abundant water sources although it might be only in some times of the year. In fact, that made me think that now we have exported the heavy industry to China and other destinations, but some of them might come back, because like in Northern Europe for instance, at least in some part of the year, there is extra surplus of water. So maybe for that reasons we might have industry back and maybe H&M should have their cotton processed in Scandinavia.

This might be a wild expectation but still it is interesting to the forces and the speed that the dynamic of society is moving forward. Just to finalise, I think that the partnership can be criticized but there is no alternative. I will give you this article from Newsweek from a few weeks ago. It discusses the 100 greenest companies and then it has 12 pages discussing which company is the greenest one and, again, it is not perfect. Somebody can even claim that it's advertising more than serious; at least it is on the first page. Our agenda is so strong now again.

So we discuss it with public authorities, we discuss it with Parliament; we discuss it with the private sector. To some extent we will integrate our decision making. But we are here to celebrate the anniversary of Friends of

the Earth and I'm pretty sure that you will still be out there to criticise and to demand more and I think we need it because that is the way that we get the right perspective and change the course of it.

Magda Stoczkiewicz

Very briefly I think it's going to be very difficult to say anything controversial and I know that at Friends of the Earth we are expected to be very controversial, after what Mark was saying. I started to think about the question that Jacqueline asked, what will you be doing in 2020, in 9 years' time? And my gut feeling was, I'll try to finally master the production of my organic tomatoes despite the fact that the weather in Brussels is just making it completely impossible, because it's so messed up in the last years that they just don't grow anymore as they should. It was a comforting thought but only for 5 minutes, because then Jacqueline said, you cannot have local sustainability without the global one, and then I was back to square one, which is, we are in a very difficult situation and I think the sooner we realise it, the better.

Then I thought about Rio+20, the Brundtland report and the definition of sustainable development from about 25 years ago and the definition that talks about the development that meets the needs of the present without compromising the ability of the future generations to meet their own needs; we talked about limits and needs and equity. Then I looked at what's in the upcoming Rio and I read the new economic growth paradigm that is friendly to the earth ecosystems, and can also contribute to poverty alleviation and I will say, spot the difference, and it's not a rhetoric question because I think the difference is tremendous. I really wonder if we are 20 years after Rio, original Rio or if we are 20 or 40 years back.

With all the information that we have now about the degradation of the earth, with all the data that we have, we still seem to be not able to move on to a sustainable development path and I don't have the hope that it's going to be done through the green economy because the green economy is based on having businesses to deliver a lot of the green things while in the current paradigm there is no question, businesses are there to make profit, as long as the end goal is not being questioned, I think we are not going to really make a difference.

Another quote, from Marie Antoinette, who said 'why are they having problems? If they don't have bread, let them eat cake' and I really consciously have a feeling of that quote coming back to me when I listen to unfortunately a lot of politicians or a lot of Commission representatives that don't seem to grasp that we don't have bread. So why are we talking about eating cake?

I don't think I was very detailed and precise, but I think this is just some food for thought.

Questions and Comments:

Q1. Ioan Negrutiu, Professor of Biology, Ecole Normale Supérieure, Lyon

I followed the discussion today and I wrote down a number of key words, those words that seem to weigh a lot in the things we are having on the table today. Among them I found competition, sustainable, sustainability, I had words like decoupling, we had words like consumers, and I've seen once the word citizen. Now, being short I think we have to think twice or maybe four times, factor four, or factor 10, of the words we are associating together. So we might end up by going into conflicting situations, just semantically. Maybe the words that are putting us in a very difficult situation and are politically, scientifically, economically, we have to rethink are those related to competition, if they have to match sustainability, if they have to match decoupling and we have to think about the fact, and I was born long ago when I was not called a consumer, I was called a citizen; so maybe we have to think twice about why we are consumers and not citizens.

Q2. Andreas Kunstleben, Effizienz-Agentur, Germany

In this discussion I heard very often the word leapfrogging. It is referred I think to technology but I often think of miracles when I hear leapfrogging, especially when it comes to political discussions. Has anybody on the panel an idea how we could leapfrog certain stages of political discussions when it comes to indicators and targets, because when I hear words like enabling, like communicating, it's all

important but I think that we can't stay on the level of talking about enabling and so on, we have to come to targets and politics and I think we need some leapfrogging there.

Q3. Gabriela Zanzanini, Food and Water Europe

When we talk about green economy it seems strange to me that so far except for the intervention of Gustavo and Mark as well, we've kind of skirted over what we're actually talking about in terms of resources, what is the relationship between a green economy and resources. It's all very great to talk about sustainable development and the three pillars and so far we've seen that the economic pillar has always won out and we've talked about Rio+20 and equity and poverty eradication. But the difference between a green economy and resources seems to be the use of market based mechanisms, basically to put financial market measures on ecosystem services to solve the crisis. So how exactly are these financial mechanisms, which seem to be one of the big things in the green economy, going to help poverty or equity actually or help solve issues for the poorest populations, when we've already seen a lot of failures with things such as REDD+ for example. I don't think we've touched this issue at all, in the sense of the impact of financial mechanisms on resources and populations and citizens.

Q4. Representative from European Aggregates Association

Coming back to the challenge to how to measure progress and biodiversity and we are working at local and regional level very often together in restoration projects with NGOs and environmental experts and that is working very well and now we have cause to measure progress and to see where we are first and where we want to go. There are a number of new initiatives, new indicators, to how to measure progress on biodiversity but there also already quite a lot of existing ones of the bigger companies, or initiatives from NGOs. We are working with the European Commission, on the biodiversity platform, on a simple approach how to measure progress and I was wondering how we can bring all these different sets of indicators together in order not to be puzzled or confused by different approaches. Again, we have a set of indicators and probably don't need to reinvent the wheel on that.

A1. Soeren Sondergar Piert

I agree financial mechanisms tend to have a behest on the poorest part of the population however you generate a problem and then in the Danish experience you can reinvest that money in that form of development that is needed.

A2. Mark Pilermartz

In response to the last question that was asked and also in response to what Soeren said, what I was saying that maybe the Summit could make a useful decision in terms of reforming the system of national accounts and all that gets precisely at this question of, we have a variety of indicators and how can we as small businesses, citizens, policy makers, see the force through the crease. The UN did, I don't know how many years ago, when a statistical commission decided how GDP would be computed was to create aggregate indicators on the basis of a variety of economic indicators that existed and create one way in which the economic progress would be measured. So perhaps what we need to do now is not have more and more and more indicators and continue to do lots of technical work to develop new and better ones. What we need is for public authorities, for governments to say alright, now we're going to use this set of indicators as a new measurement to replace the existing one, that is the overriding indicator and that we have seen has reached its limits.

A3. Jacqueline McGlade

I'd like to answer on the question of targets and enabling conditions. I think at the one end you have very much seen through human right a kind of rights-based approach; so every human has a certain right to x, y and z. at the other end you have target setting, a kind of communal target setting and I think what I was trying to say in our interventions are that, what we lack, are social decision making processes which are fit to the kind of situation we're in today. We just don't have enough settings in which decisions can be made which are

properly informed and where the outcome is a common understanding. So that's what I mean about enabling conditions, it's about creating the right settings in which people can at least have a common understanding and you don't have to reach out for either the right space legal setting or the kind of numerical target setting; however, you do need some kind of understanding of the physical flows, the accountability, who is using what. So it doesn't mean that you do without information, but you don't necessarily have to set targets. You have to have a common understanding of the thresholds over which dangers might lie. I think that is really why enabling is perhaps the language we might want to see in Rio rather than this heavy, target setting or even the right space that puts a lot of countries' backs up as well. We need something in the middle, where we can have that discussion.

A4. Jakub Wejchert

I was going to come in also on leapfrogging, goals and targets. We have to think about what are the things that Rio can actually do and what are the things that are going to start bringing about change, we talked about paradigm shifts and a move towards sustainable development. Now goals are one of those things that can trigger a lot of change. We've seen that the Millennium Development Goals that were setup after the Declaration in 2000, that although many of the goals that were decided back in the early 2000s haven't been reached, so we have goals, for example on percentages of children receiving primary education, the amount of people in poverty, environmental sustainability goals and all this, water sanitation; a lot of these haven't been reached. But the MDGs did have a huge impact both nationally, locally and internationally. So, one of the things that Rio can do is bring out other goals that have not yet been described. One example involves energy. MDGs do not cover energy, they do not cover sustainable energy access, they do not cover aspects such as energy efficiency. So these are opportunities that Rio can declare, these we need goals and goals can then work and contribute to the Millennium Development Review that's set for 2013 and then post-2015 could contribute to a bigger suite of goals. But goals will also have to be backed up by actions. And so, it is important for Rio to focus on a set of action nares, where international, national and local action can be boosted. And that's why in the EUs proposals, areas such as water, forests, managements of fisheries are seen to be essential in managing our natural resource base so that we do not exceed some of our limits and that these are ways of also addressing issues of livelihoods and stable jobs in the future. But, we have to think about the kinds of things that Rio can actually deliver that will trigger political change and political commitment in the years to come. And this is one of the reasons of the use of the word roadmap, all it is essentially is that some actions are needed and these need to take place at the international level, indicators if we can't decide internationally what indicators we should use, how can we measure what we're trying to achieve and that you need some kind of timetable and action to achieve this. A lot of the criticism of what happened before, both in Agenda 21 and JPOY was that very large documents with very large amounts of actions, but we do need commitment to a focused sense of area with timetables, and that's essentially what the Roadmap is, that we need to also map into the future commitments that take place not only in 2012 but also in the years to come, in the next 10 years, even 20 years.

A5. Antonio Vigilante

Two comments; One, why do we need a political progress at an accelerated pace because we are progressing definitely too slow with respect to the need. I think I don't want to be too pessimistic but there are only two things that can accelerate and leapfrog political will. One is a major catastrophe, because it's times of crises that the political will get boosted, we cannot wish that. But certainly the position you can take the day after a tsunami or something like that are certainly under the impulse and impression of what can happen in an accelerated way. If we discard option then there is another one which is perhaps more feasible which is popular pressure. The pressure of the people of the world on their own politicians and on international deliberative moments. Can this happen? Yes. The movement of Indignados, which is across the board, at least in the rich countries with some exception in Turkey and so on, shows that there is in embryo a concept of individual, global citizenship; universal citizenship beyond the national boundaries that put pressure on decision making on the global level for the global public good. I think this is a serious hope and perhaps Rio+20 will mobilise a strong movement of civil society to put pressure on politicians to be able to think long-term and beyond national boundaries.

In terms of measurement, we do have a lot of data, by the way, but they are very partial and not aggregate. If you look at the Human Development Report of this year, 2011, in the annex, table 6, 'Environmental Sustainability', you will find 15 indicators for all the countries of the world. Can we make sense of this table?

No, I think what we need is to change the main measure of progress. Do we care for economic growth or do we care for human wellbeing in the world? That philosophical shift we have to make. We have to replace one indicator of human progress with something that makes more sense to all human beings.

We have tried, in UNDP since 1990, with the Human Development Index. It's better than GDP. It's better and includes an economic measurement within it, in purchasing power terms, but it has been impossible because it's based on the capability approach, to incorporate environmental dimensions. But we have to go towards a sustainable human development index or towards a GNI for sustainable development. Certainly we need to change the main parameter. It's not enough to have data availability, we have them; you can go and check out yourself but it's not enough. Because this change, what we propose as measure of human progress.

A6. Gustavo Hernandez

Just to point out that the problem is not just financial, technical etc. it's at the same time socio-political and cultural at the core. So I think that we should reverse the order. First we get an agreement on the main model and then develop the different mechanisms, technical issues, indicators etc. needed to move on. Two main things as an example from Latin America, coming from a middle-income country, not the big one but emerging powers, we have very interesting issues, most at the constitutional level. For example granting rights to nature and developing indicators, different from GDP, the paradigm of well living and also closer to us the different work from civil society just placing water or food as a human right. So basically we have different paradigms; the market paradigms, human rights paradigms, and other paradigms. I think the issue here is to have in mind diversity, diversity not only of nature; it has been addressed many times here, but also in terms of human paradigms. We can combine and live together in harmony.

A7. Magda Stoczkiewicz

I think I can exactly agree with what Mr Vigilante was saying, what I am missing is how the proposed agenda for the Rio+20 meeting is going to get us there.