

Session-3

Trends of Governance for Sustainability

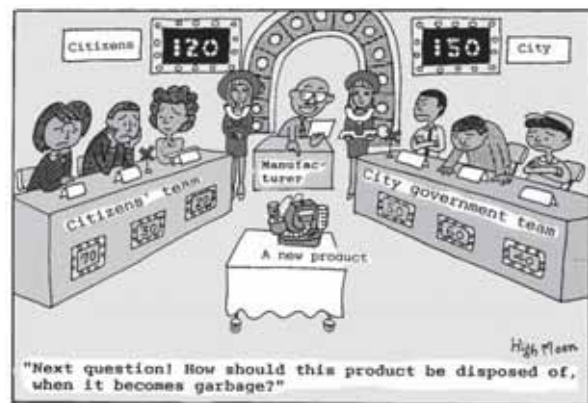
Wuppertal Institute
Raimund Bleischwitz

Thank you very much, Mr. Chairman. I would also like to thank you for invitation and for the opportunity for sharing our research finding with you. I should apologize for not being able to speak Japanese. I am sorry. So, I will make my presentation in English, then.

I could perhaps start by briefly introducing our institute. The Wuppertal Institute has some 120 staff, doing research on what we call "applied sustainability research". The staffers are allocated in four research groups and mostly conducting research in Europe for European Commission, for the different governments, also for local governments, for companies. Indeed, we are proud that we have been elected as one of the partner institute of IGES, our host today. We also participated in the collaboration Millennium Project run by the Japanese Economic and Social Research Institute over the last four years.

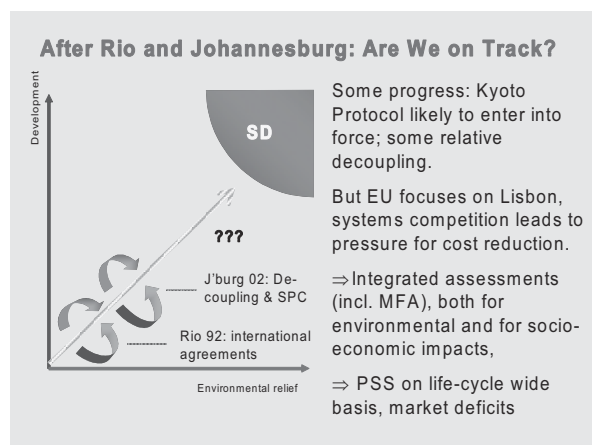
My presentation is on trends of governance for sustainable development. It will be about measuring performance of networks, some deficits, which have to be addressed, some innovation by which the deficits can be overcome. Methodologically, my presentation refers to what is called 'impact assessment'. i.e. the impacts of networks for sustainable development on the environment and on the economy.

I may illustrate some points via a nice Japanese cartoon. When you see the company sitting among panelists not as a panelist but as



Note: From now on, manufacturers will also be required to appear as panelists.

a referee, the question arises, how could manufacturers also appear as panelist, taking over full responsibility. We have already learned during the symposium that companies take over responsibility, but the 2question remains, by which incentives those practices diffuse and improve even in harsh times of competition. This is where networks may come into the picture.



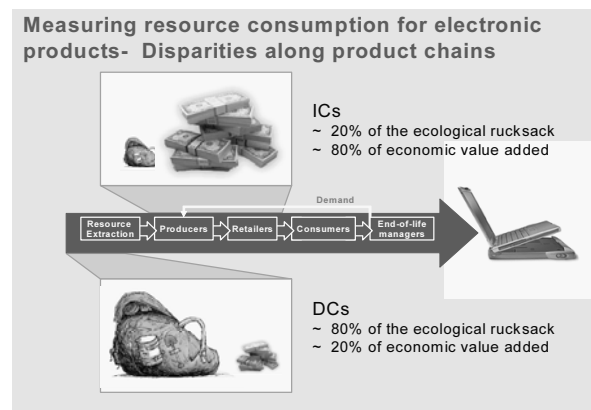
So, let us perhaps look first at the political context of governance processes. We are aware

of the Rio Summit and Johannesburg Summit that took place two and 12 years before now. The question is, "Are we still on the track?" With the developments pursued by these Summits, regarding Kyoto Protocol, there are some progresses. It will likely enter into force in next year (2005). This is indeed a huge progress, because it could not be expected in the last years since ratification process was almost blocked. Regarding other areas, there are some signs for a progress too, meaning that the majority of industrialized countries has been able to decouple energy use and resource use from GDP growth. When you look at the figures, you see that these indicate a stagnation below GDP growth.

Looking at the European debate, policy makers and business markers alike focus on what is called the 'Lisbon Agenda'. The Lisbon Agenda is on increasing competitiveness in Europe, which does not necessarily means that environmental aspects are considered to the extent necessary. Moreover, the widening of the European Union with now 25 members increases competition among member states of the European Union. Especially the old member states of EU 15 like for instance Germany, France, Italy are now realizing increasing competition from the new member states. Many industries in particular manufacturing industries, but also small-and-medium-sized companies relocate their manufacturing process because the production costs in the new Member States are on average just 20 percent compared those in high wage EU 15 states. This is indeed significant and it leads to hard pressure for cost reduction in manufacturing industry. Siemens, VolksWagen, all the established manufacturing industries now have programs on how the cost of the traditional labor can be reduced.

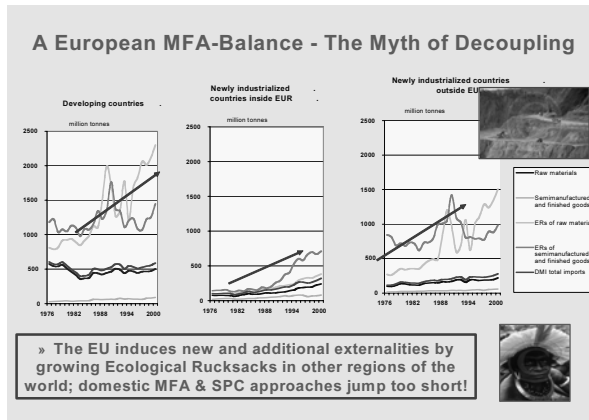
This context is hardly an immediate stimulus for those kinds of environmental innovation which we would like to be pursued. What it

calls for is an assessment for measures that is more integrated. With such methodology, both the economic impacts and the environmental impacts can be assessed rather simultaneously, not separately. This should, as I would include, material flow analysis. Material flow analysis has been introduced by our Institute some 10 years ago. And essentially, it is up to the materials weight by kilogram and tons during the lifecycle of a product. Then you can compare different alternatives according to different materials intensity. MFA this can be done and assessed at the level of products and whole economies, which would mean as a sort of tentative research conclusion that product service systems ought to be analyzed on a lifecycle-wide basis and indeed also market deficits ought to be taken into account.



Looking at few case studies, I may introduce a study on digital equipment in modern electric industries and media industries. We have figured out that when you look at the material intensity, the industrialized countries bear some 20 percent of the what we call 'ecological rucksack', which is essentially the material intensity, while gaining some 80 percent of economic value added. Comparing these findings with the share of developing countries you see that the developing countries have to bear some 80 percent of the 'ecological rucksack' and only benefit from some 20 percent of the economic value added.

This unequal share in environmental impacts is mainly due to the resource extraction processes. The ecological rucksack arises from resource extraction, which is overwhelmingly in the developing countries. This can be called a disparity along the product chain. With increasing scarcity in certain materials, this rucksack is likely to become larger.



When we look at the figures for whole economies, I have already mentioned that the decoupling process is going on for most industrialized countries. These are figures for European countries and for developing countries. Looking at the different lines, the bottom line here indicates of the amount of raw materials and goods. But when we look at the green line, the ecological rucksacks, you see that the amount of ecological rucksack is still increasing.

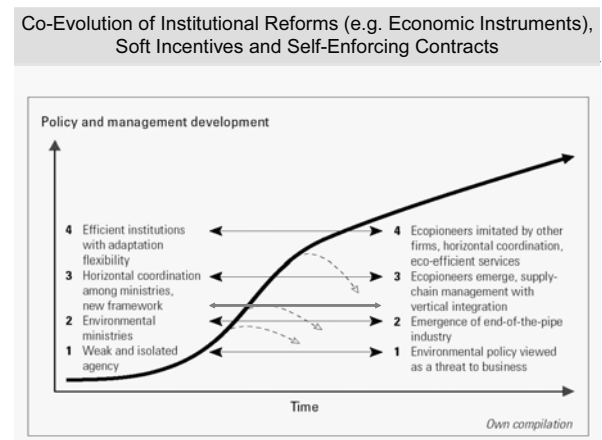
So, this decoupling process does not account for when you take into account the whole life cycle of goods and services, including the extraction process. This also indicates that the extraction process has taken place in ecologically more sensitive regions where resource are more scarce and the share of materials are lower, compared to former extraction places.

This phenomenon of growing resource use in a life cycle wide view should indeed be analyzed and taken into account. Given the scarcity of natural resources, these ecological

rucksacks are likely to grow in near future too. One should therefore hesitate to say that we are witnessing ‘decoupling processes’ as called for in Johannesburg because it relies upon the definition and the scope of your analysis. When you have a wider scope, considering the ecological rucksacks, any decoupling process would be understood differently. Looking at the European Union it leads to the conclusion that the European Union induces new and additional externalities by growing ecological rucksacks in other regions of the world. Any domestic material flow analysis or analysis on domestic patterns of sustainable production and consumption would jump too short and would fall behind.

This is why we have to address a few what I call here innovations on different areas. We speak about political innovations, social innovations, and technical innovations. Because of these different arenas I like to use the term ‘governance’: It addresses not only the level of governments but also - and essentially - the level of business makers and society where most decisions are taken.

Let us look first at political innovations - not in the sense of a hierarchy but in a sense of policy analysis according to which formal rules ought to be assessed.



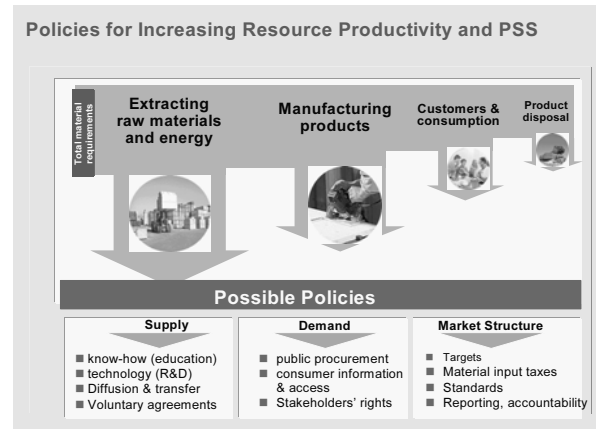
The question would be how policies can set incentives and change institutions (understood as rules of the game) for supporting

Product Service Systems. When you look at the levels of policymaking and management altogether, you see over the years that there is a co-evolution between both. In most OECD countries the environmental policies have started to begin in the 70's, what it was called here, Stage 1. In this stage, we can observe an isolated environment agency or, from management perspective, environmental policy was viewed as a threat to business. Now slowly most countries are moving forward to the Stages 2 and 3, where I guess we are now. For example, coordination among ministries gets better, framework regulation like the basic law on the environment is introduced and reinforced, and we not only have the end-of-the-pipe industry but also what is called here 'Ecopioneers', firms that do better than any regulation requires..

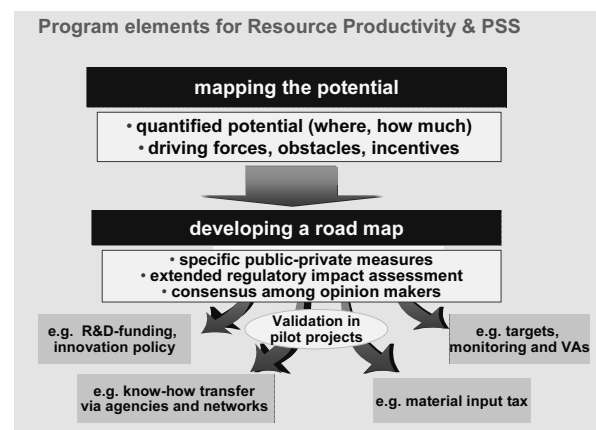
At the same time, the figure reminds us that this stage might not be sufficient in order to find incentives for society and business makers as a whole. We may have to look for what is called here 'efficient institutions with adaptation flexibility', meaning not only a framework but rather flexible day-to-day incentives. The question is, how the Ecopioneers are imitated by others, how the horizontal diffusion and coordination takes place, how the overall shift from eco-efficient products to services can take place. This may well take some 10 to 15 years. In analytical terms, we should not only look at the basic laws but also at flexible instruments and soft incentives, not only voluntary agreement but all schemes of local and regional persuasion and implementation.

Contracts are an interesting candidate for such approaches. They can not only be negotiated among different firms but also among, for instance, governments and corporations, government and business sectors. Agreements can be enforced by specific provisions within those contracts and then the question is what kind of

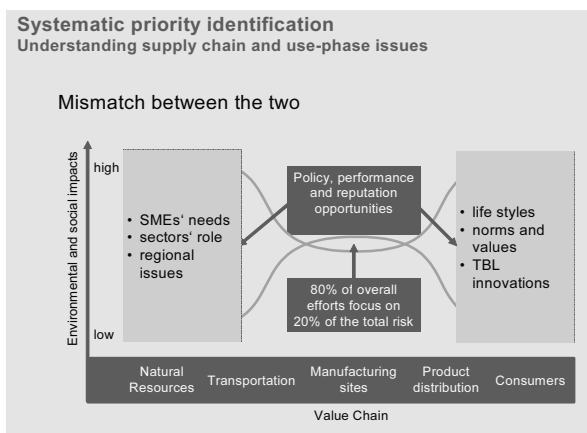
contracts are applied and how the can be analyzed in terms of incentives and enforcement procedures.



So, this might give you an overview on our analytical framework for that kind of research. More concretely, we have started to look into possible policies for increasing resource productivity and lifecycle-wide indeed. You have to look at the extraction processes; manufacturing processes, customer and consumption processes, and product disposal and possible policy would then have to address supply-side, demand-side, market structure. There is a variety of measures which can be taken into account. Essential is a know-how transfer. It is a matter of technologies, diffusion policies, etcetera. But I will not go into the detail here. However, WI currently formulates elements of a program on increasing resource productivity for the German federal ministry for the economy.



WI assesses the potential for increasing resource productivity in a quantitative way, it addresses the driving forces, obstacles and then as a second step, we are going to develop a roadmap for increasing resource productivity, which would contain specific public, private measures and also include options for know-how transfer and options by which the consulting groups can approach business in order to foster the systems. So, this would be a publicly, or partly publicly funded program by which consulting groups can go into different businesses.



However, having said that we should also bear in mind that it is not only a matter of governments indeed, but also how these incentives fit together with social innovations and how then vice versa social innovations can drive incentives that are more flexible. Here this means that we look at how to initiate a transition towards product service systems along the global product chain, which is the current challenge indeed. And currently, we see that still a mismatch between the different supply chain. Most attention is paid to the manufacturing site.

All those processes of natural resource extraction do not receive enough attention. At the other side, looking at the downstream product distribution and usage phase, the consumer is also quite often neglected yet. So, when we talk about social innovation, we should always try to understand the whole supply chain and

the use phases in order to meet environmental and social impacts. This means that small-and-medium-sized enterprises ought to be taken into account too. WI also addresses the role of sectors like metal industry and deeply also looks at regional issues. Because often the question is what happens with a region where resource extraction takes place or a large manufacturer organizes transformation of materials when these processes change. Regarding the downstream processes, it is a question of lifestyles, norms and values and other kinds of social innovations.

Market Deficits need to be tackled

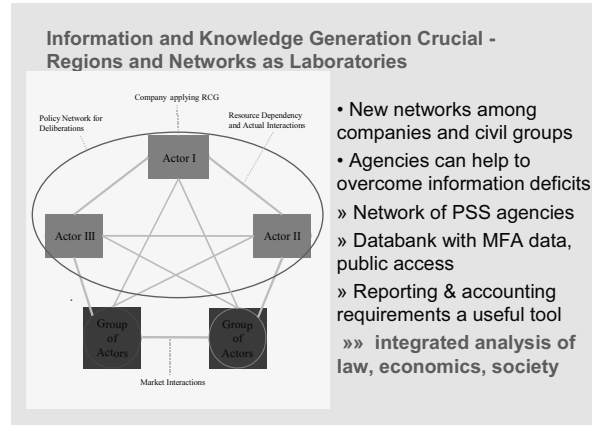
- *Information deficits*: attention is scarce, search is costly, quality difficult to assess.
- *Split incentives*: owner, designer and user of any technology are not identical. Coordination costs are high.
- *Biased calculation*: payback times used by either firms or consumers in savings calculation are too short.
- *Market power*: established companies guard their market position and market share. Newcomers need to establish a critical mass of supply at emerging markets.
- *Customs and routines*: humans keep to their customs and routines. New ones need to be established, leading to high cost for any pioneer.

Being an economist, I would also like to underline that this is not just a matter of psychology but also a matter of microeconomics, especially industrial and institutional economics. Market deficits usually are considered as externality or public good issues. These are the dominant market barriers when we look at standard environmental economics. But having analyzed quite a number of case studies other types of market deficits become more important. It is firstly information deficits. This is relevant because attention for any new product system and its quality is scarce. The search of consumers and businesses is a cost-intensive activity. So, the question is how you can reduce the information cost for search and for learning. Any superior quality needs to be advertised that different quality and credibility for the new quality can be assured. Information

deficits also matter in what is called split incentives. The owners, designers, or users of any technology or products are not identical. The coordination costs among these different actors are relatively high at least. They should be taken into account.

You also see a deficit called biased calculation. Pay-back time used by either firms or consumers in savings calculation are too short. According to empirical research, expected pay-back time of e.g. consumers is about two to three years maximum. Everything, which is above that kind of pay-back time, is hardly considered as beneficial. So, the question would be whether financial services could address that kind of biased calculation or what kind of information tools can address the pay-back time issue. In addition, market power is quite relevant when one looks at small-and-medium-sized firms trying to set up new business. This might be relatively difficult in particular in oligopolistic markets such as energy.

Looking at companies, the question also arises how their habits and their routines. may change. Humans and organizations like to keep their customs, so the costs for changing customs are high and it might be more rational for a company to act as second mover: Let the first mover kick off established routines. If that is the case, then incentives for first movers are important, and the second and third mover need softer incentives for an imitation.

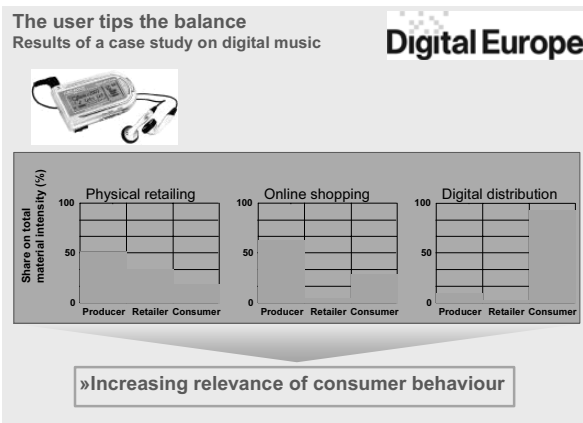


Technological, innovations are indeed also quite relevant. The question is what kind of technology is there and related to this how processes of diffusion can be improved.

The study on Digital Europe shows relatively clearly that we see fascinating new PSSs. The impact of the consumer phase increases. Also, in this regard, you have to look at consumers' behavior.

Following our previous remarks, we did some analysis on networks where different actors are involved.

We did this analysis on networks where not only private firms but also consumer organizations, local groups and public policy groups were involved. Our evaluation methodology draws upon the sustainability or 'regulatory impact assessment', as developed in the European Union, and our research team has specified those criteria in order to make them more operational.



Evaluation of Networks via Sustainability Impact Assessment

Relevance	(C 1) Process of problem identification, Pressure to act	How and by whom is a relevant problem addressed? To what extent and by whom is there a consensus about causes, effects, and the need to act? How urgent is the need for action seen from the actor's perspective? Does the network address main actors? Is the process stakeholder-driven? Is the process used for priority area identification in line with other stakeholders' agenda? Is it in line with global or regional trends?
	(C 2) Decentral solutions, Possibilities for Compensation	Is there an obvious link with other policy issues, to whom the network might add negotiated solutions? Does the network include relevant groups of society? Does it lead to an exchange of (financial or other) resources, which is considered fair and does not lead to additional externalities?
Effectiveness	(C3) Targets and strategies	Are there clear and verifiable targets? How consistent are sets of targets in the relevant area beyond the case study? Is the structure suitable for policy deliberations? Does the structure allow for stakeholder participation and interaction on targets and strategies? How consistent is time horizon of targets with appropriate action? Is there a defined norm or a baseline year?
	(C4) Implementation	Is there a specific action plan with concrete measures? How can the targets and/or the action plan be related to individual action? Are there performance indicator systems? Are these mechanisms supported by written and continuously reviewed routines? Do these mechanisms entail a monitoring of costs (see C5)?
Efficiency	(C5) Cost Reduction, Allocation	Which internal and external damage costs does the network try to address? Is there a visible strive for minimizing overall costs? In what ways are transaction costs included? In what ways is there a reduction of external costs? In what ways might new externalities emerge?

Evaluation of Networks via Sustainability Impact Assessment

Side Effects	(C 6) Positive Side Effects	In what ways does the network spur incremental or radical innovation? In what ways are processes of diffusion enhanced? Are there tendencies for inertia or is there a systematic effort towards openness for new ideas? What kind of benefits emerge (tangible and non-tangible assets)? To what extent can the network exploit economies of scale and/or network externalities?
	(C 7) Negative Side Effects	Are there systemic leakages, which may lead to problem shifting? Are there incentives for free riding? Are there new and additional negative externalities?
Adaptation	(C 8) Freedom and flexibility	Can relevant actors freely choose among a set of instruments? Is there sufficient flexibility to make investment decisions consistent with network aims? Can actors develop new tools that have an influence on the network?
	(C 9) Evaluation and review	Is there a formal mechanism for evaluation and/or review? Does it include reviewers outside the network? Are there clear performance criteria that help to readjust the network?
Priority	(C 10) Participation and Transparency	What mechanisms for participation and transparency exist? Are all relevant groups (affected parties) members of the network? Do public interest actors hold specific competences? Is the process open for new participants?
	(C 11) Control	Which formal and informal control mechanisms exist? Is there a sufficient division of competences between controlling and controlled actors? What processes ensure independence and power of control over time? What sanctions are foreseen in case of non-compliance?

We have also added guiding questions where you then later on can add scores to the different criteria and try to statistically compare the performance of different networks, analyzing their strengths and weaknesses. This is on the second sheet of our impact assessment. We did an assessment of different case studies.

Case Studies analysed via SIA
‘Millennium Collaboration Projects’ (www.esri.go.jp)

1. **EcoProfit**: local learning for integrated environmental technologies.
2. **Responsible Care**: Trans-boundary Chemical Network
3. **PIUS**: Production-integrated environmental Protection (eco-efficiency agency NRW)
4. **Eco-Industrial Parks**: Horizontal Corporate Networks (Kalundborg + Brownsville)
5. **Energy+**: Public-private market transformation
6. **BP plc**: Tradable Permits at Corporate Level
7. **ProKlima**: Funding for local Climate Protection
8. **DJSI**: Financial Markets shape TNCs

“ProKlima”: Cooperative Climate Protection Funding on a local Level (Hanover)

- Combines management interests (utility), consumer needs, & public local interests in the region of Hanover
- Promotes energy efficiency & climate protection
- Designed to a deregulated energy market through promotion of regional responsibility & innovation leadership
- Implements the declaration of German corporate sector on global warming prevention on a regional level.

=> High involvement of energy utility, funding mechanism at low transaction costs

You see here the eight case studies, out of which I have chosen a few for presentation. This is the ProKlima Fund, which is a local

Ecoprofit - A Local Public Private Partnership Programme for Sustainable Development

- Offers SME's consultative support
- Strengthens companies by cost reduction through minimisation of waste, emissions, etc.
- Creates social environment of qualification, innovation and trust via stakeholder dialogues

=> High flexibility, high involvement of SME's, horizontal diffusion

OKOPROFIT [Eco-Profit] Bergisches Dreieck 2001/2002

Annual savings and one-time investments of the 123 measures assessable of the 24 participating companies upon project conclusion

Measure without	Savings in €	Investments in €
Investment	200.000	120.000
1 year	100.000	140.000
1-3 years	44.000	100.000
Economically not assessable	0	140.000
Total	672.000	740.000

Breakdown of measures by environmental fields

climate protection support fund organized by the local municipal utility of the city of Hanover (and others), which together run the ProKlima fund. The fund finances all kinds of initiatives in the region in favor of climate protection at the level of small firms, private household and public administrations.

The second example, which I would like to mention briefly, is ‘Eco-profit’. This is a promising trend emerging out of mid-European cities, which might be interesting for the IGES project. Especially small-and-medium-sized enterprises take part and they participate in the learning processes, by which they can then later on make up their decision making in favor of environmentally-friendly investments. They are calculated here according to what has been done in the city of Wuppertal and its neighbors in this regard.

Let me now come to conclusions. The general shift from governments to governance is mainly due to socio-economic change, not due to change in the sustainability area.

Looking at those networks with different kind of actors, they have advantages when market growth ought to be enhanced from a market share of, say, less than five percent to a market share of 10, 20, and slightly more percent. This has been calculated here for the Energy+, the scheme by which electric appliances are supported. In those processes of market development, the frontier slowly moves from a low

GoSD Conclusions

- Shift to Governance due to socio-economic change.
- Networks are advantageous when market growth ought to be supported. Network success depends on balancing knowledge as 'club good' and open access.
- Networks lead to diffusion and coordination problems. Openness and flexibility crucial.
- Governments remain relevant for environmental monitoring and assessment, long-term orientation, absorbing public needs, 'lifting up' networks by reforming framework conditions.

percentage to a higher percentage. This certainly has its merits for sustainability driven by markets.

But that also means that market development driven by networks stop at a certain point. Networks can address the early imitators and the early adopters, but they hardly address those firms, which are not innovative. Looking at the Innovation Trends Panel of EU, for instance, innovative firms account for some 45 percent, while 55 percent are not considered as innovative. So, the question from a policy analysis point of view is how one address those non-innovative firms. And therefore, most likely you still have a need for some additional policies.

From our case studies analysis we would also conclude that governments still have task of environmental quality monitoring, and linking those assessments with activities that put pressure on the environment. This comprehensive monitoring task cannot be done by the private sector. Governments remain relevant for the integrated assessment of the environmental situation; especially for a long-term orientation following from those assessments, for instance, CO2 reduction and minimizing the use of natural resources. This can also be done at the local level. But as mentioned earlier - this is also a task for policy coordination among governments because not only OECD countries but also Developing Countries are relevant.

In regard to the provision of collective goods where public needs may change over time, policies and their administrations ought to absorb signals of change and to re-formulate objectives and targets. Again, the local level is essential for these tasks. But despite the manifold advantages of networks and local activities, there seems to be a need for a next generation public policy program, elevating business and local initiatives while addressing the laggards - for the sake of sustainable societies.

Thank you very much indeed for your attention.

***** Q & A *****

Floor:

You mentioned about the sustainable development assessment. In Europe, strategic environmental assessment are commonly used. Why is sustainable impact assessment different from the strategic environmental assessment?

Bleischwitz:

The new impact assessment has been introduced some two years ago in order to streamline the different assessments of legislation in Europe, complementing the existing environmental impact assessment and strategic environmental assessment for infrastructure projects. The new regulatory impact assessment now tends to harmonize those different impact assessments. EU now has started to formally pre-assess each regulation before it gets into force. So the process is that when the Commission formulates a proposal there is an impact assessment of the various options before the proposal goes to the Parliament or Council of Ministers. How the concrete relationship to environment impact assessments will look like remains to be seen. This depends inter alia upon how this process is managed in organizational terms within the Commission.

Floor:

Here is another question. You mentioned about pay-back time. When you are introducing some kind of new products or new technology, using resource, why is it difficult to have idea of pay-back time in Germany or France?

Bleischwitz:

The technical pay-back time is different from the pay-back time as customers or com-

panies perceive it. In energy efficiency measures, for instance, you have quite often a pay-back time of less than two years. We calculated also material productivity and technologies, finding pay-back times of less than two years. Intention with introducing of these measures is a pay-back time of two or less years - because this is easy to communicate. Product services systems can perhaps be designed for immediate service too. Pay-back times of more than five years are problematic.