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Report on the results of the
3rd DYNAMIX Policy Platform:
“Policy design and assessment: Three policy
mixes for resource efficiency and decoupling”
Brussels, 6 May 2014



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DYNAMIX PROJECT PARTNERS



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1 Introduction

1.1 About the DYNAMIX project

The project DYNAMIX (Decoupling economic growth from resource use and its environmental impacts) is funded by DG Research of the European Commission under the 7th Framework Programme for Research and Development. It has started in September 2012 and will run until December 2015 with the aim to propose policy mixes for achieving absolute decoupling of economic performance from resource use and its related environmental impacts. In so doing, the project uses quantitative modeling and qualitative assessments to investigate the effectiveness of a set of 3 to 5 policy mixes to shift the EU onto a resource-efficient pathway to 2050. Overall, DYNAMIX tackles three sets of questions:

- *Where do inefficiencies in resource use and resource policies currently occur?*
- What are the underlying drivers? Are there any examples of policy mixes successfully tackling these inefficiencies?
- *How do underlying paradigms affect resource use?*
- How can new paradigms (e.g. cradle to cradle or product to services) be translated into concrete policy making?
- *What could be three to five of the most promising policy mixes for achieving absolute decoupling?*
- What potential policy impacts can we see using environmental and economic modeling and qualitative analysis, including an analysis of factors influencing human behavior?

The project will result in clear policy recommendations to provide EU and national policy makers with tangible support towards implementing powerful resource efficiency policies. It will specifically contribute to the EU Flagship Initiative “Resource-efficient Europe”.

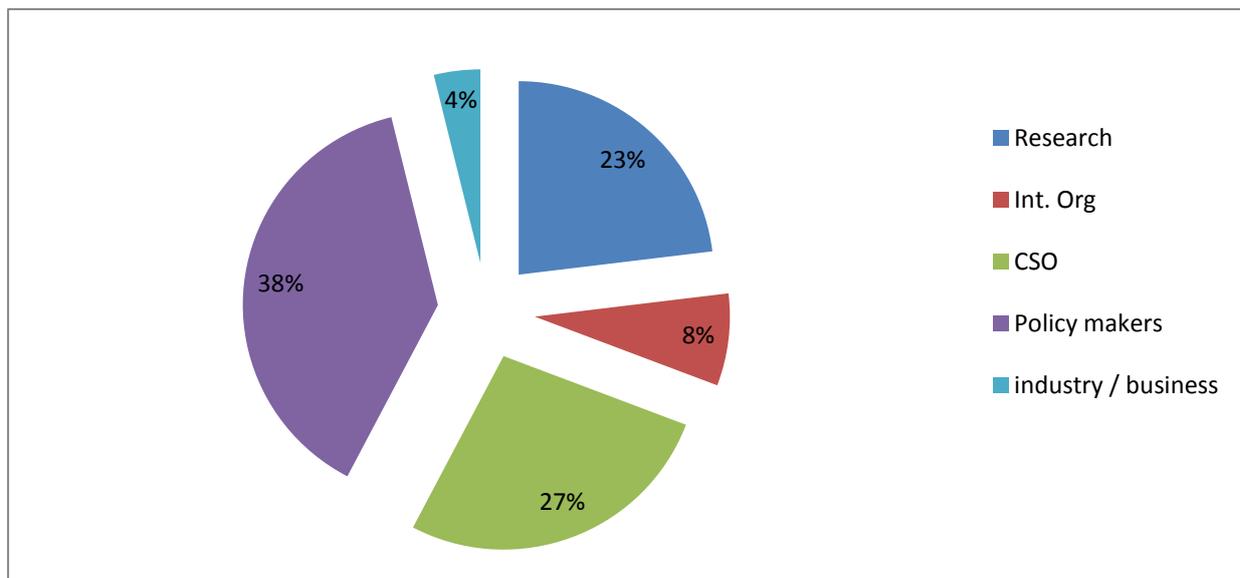
1.2 About the DYNAMIX Policy Platforms

Policy-makers and other stakeholders will be involved in a systematic participatory learning process throughout the project. DYNAMIX Policy Platforms provide a regular forum for knowledge exchange and mutual learning. Policy-makers and other experts can thus shape the project’s design based on their needs.

The 3rd DYNAMIX Policy Platform, entitled “Policy design and assessment: three policy mixes for resource efficiency and decoupling”, took place in Brussels on 6 May 2014. In total, 46 participants from 14 European countries attended the event: 19 researchers from DYNAMIX consortium and 27

external participants. External participants were distributed across different stakeholder groups as follow (Fig.2): 10 policy-makers (38 % of all participants), 7 researchers (23%), 7 Civil Society Organisation (CSO) representatives (27%), 2 representatives from international organizations (8%) and 1 business representative (4%).

Figure 2: Stakeholder group distribution of external participants (without DYNAMIX consortium members)



The 3rd DYNAMIX Policy Platform aimed at presenting three policy mixes on land, metal and overarching resources, developed within the project. Due to the interactive format at the event, participants not only learned about preliminary project results but also had the chance to actively contribute to shaping the further work in DYNAMIX by discussing important issues and by bringing in new insights, which will serve to improve the presented policy mixes in the next steps of the project.

In the following chapters, we will describe the presentations, discussions and group work results of the 3rd DYNAMIX Policy Platform. More information about this event can also be found at the DYNAMIX project website at <http://dynamix-project.eu/dynamix-events>.

2 Opening: Policy mixes for resource efficiency and decoupling in Europe

The Policy Platform was opened by Martin Hirschnitz-Garbers (Ecologic Institute, Germany) who welcomed all participants and shortly introduced DYNAMIX and its main objectives.

The opening session aimed at giving an overview on current resource efficiency policy debates, topical issues and initiatives in Europe, as well as to link the project work to wider policy goals and current challenges. The opening session comprised a keynote presentation by Carina Vopel (DG Environment, European Commission) and a discussion with the event participants.

Keynote presentation:

Carina Vopel (Head of Unit, directorate F.1, DG Environment, European Commission)

“The need for policy mixes for resources efficiency and decoupling in Europe”

In her keynote, **Carina Vopel** gave an overview on activities and progress of the European Commission in its efforts to foster resource efficiency, with a focus on the most recent policy documents released on the topic, on the efforts needed to integrate and harmonize these within the Commission’s work, and on the necessity to keep the resource efficiency issue on top of the EU policy agenda.

Ms. Vopel introduced the most important and recent policy documents on resource efficiency: the Manifesto and Policy Recommendations by the European Research Efficiency Platform (EREP) (released in March 2014), and the Circular Economy Communication which is expected to be published by the European Commission in June 2014. The EREP Manifesto and Policy Recommendations highlight the need to: (1) identify and remove main barriers on resource efficiency, necessary to be removed to move forward, (2) identify policy instruments to address resource efficiency in the framework of a new circular economy, and (3) set a clear framework of targets and indicators (in addition to the already established indicator Resource Efficiency Scoreboard), that Member States should be able to adopt and implement in order to monitor progress towards a resource efficiency economy. The document puts particular emphasis on the development of measures addressing production and consumption side. In particular, adopted measures need to address SMEs and businesses with innovative business models and Public Procurement and Extended Producers Responsibility topics. From a consumption perspective, the document recommends the development of policies to support and encourage sustainable consumption patterns, such as a more intensive information and education campaigns, but also a more transparent and understandable labelling of products and services.

The Circular Economy Communication, expected to be adopted in June 2014, aims at summarize the existing paradigms on resource efficiency under a common denominator. In line with the EREP policy recommendations, the Circular Economy Communication will emphasize the need for innovative business models, to provide support to SMEs, better information and share of best practices related to the business-to-business cooperation and on products. In addition, the Communication will put particular emphasis on policies for waste management and recycling to keep

valuable resources within the economy, and help support the review of the EU framework on waste policy and targets.

Ms. Vopel mentioned a number of additional EU initiatives supporting the transition towards a resource efficiency society, including the 7th Environmental Action Programme (that entered into force in January 2014 and lists resource efficiency as one of the thematic priorities to guide European environment policy until 2020), and the European Green Week (3-5- June 2014, Brussels), the biggest annual conference on European environment policy, that will focus on Circular Economy, Resource Efficiency & Waste.

In addition, Ms. Vopel mentioned that different Directorates General, including DG Enterprise, collaborate to jointly work on issues such as: creation of green jobs, involvement of SMEs, sustainable food and building, and development of single market for green products, like test methods based on life cycle approaches for measuring companies' environmental performances. In conclusion, Ms. Vopel raised the question if absolute decoupling should be the ultimate aim of resource efficiency.

During the Q&A session following Ms. Vopel's speech, the following issues were raised:

Q (1): Is there some land policy in the policy package?

Ms Vopel replied that Zero Landfilling as such is not possible, but the political approach is nevertheless towards zero landfilling.

Q (2) How far is the climate change issue tackled in the Commission's work on resource efficiency?

Ms Vopel answered that the issues of resource efficiency and climate change are kept separate, also in terms of responsibilities within the European Commission. Ultimately, however, there are synergies for which collaboration is necessary.

Q-(3) Is the European Commission looking at education and information of consumers at Member State level in the context of resource efficiency?

Ms Vopel said that a lot of discussions took place in the Resource Efficiency Platform, but the EU does not have the responsibility to act in the Member States: due to cultural differences, the unification of measures and strategies in so different countries turns out to be problematic (e.g. similarly as a certain product that should be presented in very different ways to, for instance, Finnish or Spanish consumers).



3 Session 1: Towards resource efficiency policy mixes: a systems perspective

The main objectives of this first session were: (1) Giving an overview on main objectives of the DYNAMIX project, (2) identifying the need for a systemic view in resource efficiency policy, and (3) brief participants on the three policy areas (overarching, metals, land) which have been selected in DYNAMIX to propose policy mixes for achieving resource efficiency. The session was opened by a keynote presentation from Christian Hudson, Ecologic Institute (Germany), followed by the keynote presentation from Christina Wolf, IVL Swedish Environmental Research Institute (Sweden), and concluded with an interactive working group that focused on drivers and barriers for resource efficiency in the three policy area.

Keynote presentation:

Christian Hudson (Ecologic Institute, Germany)

“The systems perspective and policy areas of DYNAMIX”

In his presentation **Christian Hudson** gave an overview on DYNAMIX’ main approach and objectives, as well as on the aims of the 3rd Policy Platform.

At first, Mr. Hudson introduced the DYNAMIX project’s main goal, aiming at “identifying the most appropriate policy mix leading to sustainable use and management of natural resources and contributing to societal advances“ by coming up with fresh policies, demonstrating benefits of different policy instruments, and setting up guidance on how to design policy mixes.

By doing so, the DYNAMIX project will try to assess the transition pathways to absolute decoupling, different policy measures delivering the transition, as well as the interactions between different policy measures that could enable it to make more progress.

In order to address these issues, DYNAMIX approaches the challenge in a systemic way and examines complementarities of policy mixes, such as cumulative effects and re-enforcements. This process is applied to the short-, medium-, and long-term (i.e. 2020, 2030, 2050 and beyond).

Mr. Hudson then gave an overview on the state of progress in the project, that by now delivered the following milestones: (1) approach and targets setting, (2) identification of resources inefficiencies, (3) comparative assessment of existing policy mixes, (4) exploration of alternative future scenarios, and (4) description of policy mixes on land, metals and overarching resource efficiency issues.

Finally, Mr. Hudson presented the objectives of the 3rd Policy Platform which aims at shaping the ongoing work in the projects with inputs and feedback from participants. In particular, the interactive sessions of the platform events should help define the relationship between policy instruments and to identify the most important aspects of policy instrument mixes to be examined in detail (e.g. relationships between individual policy instruments and objectives, outcome metrics).

Mr. Hudson concluded his speech by remarking that a systemic approach is necessary in order to take into account the complexity of variables, actors and interactions in the resource efficiency policy arena.

Keynote presentation:**Christina Wolf (IVL Swedish Environmental Research Institute)****“Sensitivity modelling of three resource efficiency policy areas”**

In her presentation, **Christina Wolf** provided an overview on the DYNAMIX approach used to design the sensitivity modelling for the three policy areas presented in the course of the Policy Platform (overarching, metal, and land).

At first, Ms. Wolf described the DYNAMIX approach in relation to the understanding and modelling of complex systems. This typically requires the establishment of a process, a forum and a decision support tool: the process helps multidisciplinary groups to develop a systemic view on complex problems, the forum supports the discussion among relevant stakeholder groups on the problem, whereas the decision support tool helps in establishing all the interrelations. Ms. Wolf also clarified the systems in DYNAMIX presents a high degree of complexity and that the approach applied for this reason requires a simplification of the system, such as a high aggregation level of the main describing factors.

Ms. Wolf described the approach applied within DYNAMIX for the design of a sensitivity modelling of the policy systems. At first, a process developed in order to describe the complexity of the system, understand its function, analyse critical parts in more detail, evaluate the total system, and, finally, develop a strategy. For the description of the system, it was crucial to identify the most important features, but also to get a broader overview to understand the complexity and interaction between the various variables of the complex system.

Ms. Wolf then outlined the Impact Matrix, the tool used in DYNAMIX to understand the interrelation between the different variables considered when designing the proposed policy mixes. In this process, the crucial step lied in the understanding of how each variable affects the other variables, and how changes related to a variable will affect the other variables. The sensitivity model then calculates the resilience to change for all accounted variables.

Finally, Ms. Wolf introduced the first interactive group work session.

Interactive group work: Identifying drivers and barriers for resources efficiency and their consequences.

During the interactive group work (duration: about 45'), participants were asked to join one of the three groups (each based on one the proposed policy mixes on overarching, land and metals), in order to initiate a discussion around two key questions on the variables that characterise each policy areas in the sensitivity model: (1) Do you feel that important barriers, drivers are missing? If so, which? (2) Between which variables would you see relevant interlinkages/ interrelations?

At the end of the group work, the rapporteur of each working group presented the reflections and highlights to the plenary. The barriers and drivers highlighted during the group work will be taken into account for the further development and fine tuning of the policy mixes. Please find below the barriers and drivers for each policy area identified by the participants:

Overarching group:

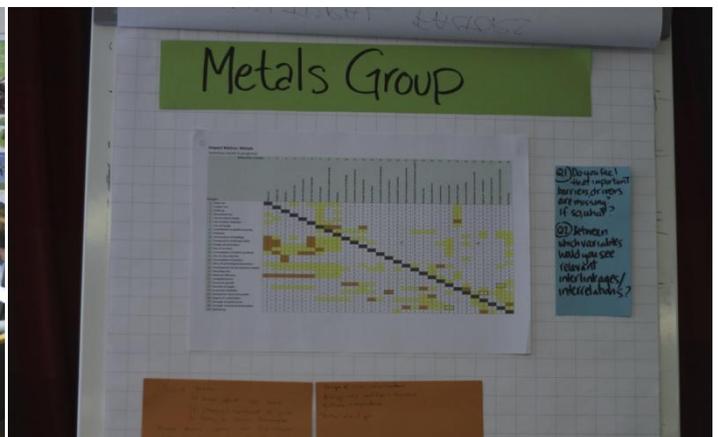
- A lack of appropriate business models, especially with regard to product service systems. Businesses may have to wait for the regulators to provide the right conditions to invest; on the other hand, the cost difference is rather marginal these days. Therefore, what can we do politically to address these issues?
- Lack of feedback and lack of incentives to behave 'correctly', as well as knowledge and information exchange between consumers and producers.
- The cultural and mindset barrier, e.g. the common believe that "we own the Earth".
- Policy lock-ins – for instance, if we change policies too quickly we may degrade any existing support by overriding positive subsidies, etc.

Land use group:

- These issues are included in the policy mix: eating habits, personal preferences, consumers' habits on non-bio fruits and food, cosmetic standards (e.g. 'wonky' fruits), but could be hard to change.
 - Overconsumption, health problems, obesity: these issues are hard to get across and sensitive.
- Main barriers/drivers not currently included in scope:
 - Problem of food waste;
 - Farmers having contracts with consumers;
 - Radical technical innovation in the food production should be addressed.

Metals group:

- Need to consider future trends (consumption, and especially cultural):
 - How we value things: gold as status vs. wealth storage. Why do we value gold higher than other cultural issues?
- Metals play a large role in infrastructure – need to think about the design of future infrastructure, and also the maintenance of current infrastructures.
- Metals are a traded commodity – how might policies affect global trade levels and obligations?
- Recycling has to be looked at carefully, as it is not the answer to everything and could be even environmentally damaging.



4 Session 2: Policy mixes for resource efficiency and decoupling in selected areas

In session 2, “Policy mixes for resource efficiency and decoupling in selected areas”, presentations by Tomas Ekvall (IVL Swedish Environmental institute, Sweden), Leonardo Mazza (Institute for European Environmental Policy – IEEP, Belgium), Katharina Umpfenbach, (Ecologic Institute, Germany), Daniela Russi & Martin Nesbit (Institute for European Environmental Policy – IEEP, UK), aimed at providing participants with an overview on the preliminary work conducted to develop the three policy mixes already introduced in session 1. Moreover, an interactive group work was designed to receive new inputs from participants on three key questions regarding the policy mixes.

Keynote speaker

Tomas Ekvall (IVL Swedish Environmental Research Institute)

“Introducing the DYNAMIX policy mixes”

In his presentation, entitled “Introducing the DYNAMIX policy mixes”, Tomas Ekvall (IVL Swedish Environmental Research Institute), aimed at giving insights on concepts and criteria used to develop the presented policy mixes.

At first, Mr. Ekvall gave a brief overview on the vision standing behind the development of the policy mixes. The work has been performed under the assumptions that policy mixes can be successful: absolute decoupling of resource use from environmental impacts and GDP growth will be achieved, well-being and economy increase, and development happens within environmental planetary boundaries and global fairness.

Mr. Ekvall then provided an overview on the criteria for policy mixes to assess: divergent (meaning that they had to address different policy areas); effective in addressing resource efficiency, drivers, barriers and lock-ins; contributing to societal paradigm changes; relevant to policy makers and stakeholders; addressing little managed resources; adaptive to changes that occur over time; not yet sufficiently investigated; and possible to assess quantitatively.

Mr. Ekvall then outlined the most important project outcomes driving the development of the policy mixes, based on: the identification of reasons for inefficiency investigated in WP2 (e.g., as diets and food choices for food, that influenced the development of policy mix on land); the key factors for success and shortcomings (conflicting objectives, gaps, etc.) of existing policies and policy mixes assessed previously; the analysis of paradigms, and finally the “most popular” policies voted by participants during the 2nd Policy Platform. Through this, it was possible to define a procedure (identification of drivers, barriers and lock-in), targets and vision to design the proposed policy mixes up to 2030 and 2050 respectively. The three proposed policy mix are: (1) Overarching policy mixes for decoupling growth from resource use and impacts, (2) Policy mixes targeted at metals, and (3) Policy mixes targeted at land-use.

“Policy mix areas and challenges – an overview of three resource efficiency policy-mixes”

This part of the session served to introduce the three developed policy mixes to participants, in order to provide them with all relevant information necessary for taking part to the interactive group work.

Keynote presentations:**Leonardo Mazza (Institute for European Environmental Policy - IEEP)****“Overarching policy mixes for decoupling growth from resource use and impacts”**

In the keynote presentation, “Overarching policy mixes for decoupling growth from resource use and impacts”, **Leonardo Mazza** (Institute for European Environmental Policy, IEEP, Belgium) focussed on drivers, barriers, targets, visions and policy instruments taken into account to shape the **overarching policy mix** developed within DYNAMIX project.

At first, Mr. Mazza framed the problem, characterized by a continuous increase in the EU of consumption of goods, services, and raw materials by households and companies, as well as the demand and use of materials. In addition, according to the well-known work of Rockström et al. (2009)¹, some planetary boundaries have already been exceeded (as for the nitrogen cycle and the rate of biodiversity loss) or in danger of being exceeded (as for climate change).

Secondly, Mr. Mazza introduced the vision which gives an indication of the targets that should be ideally achieved by 2050: (1) All EU citizens enjoy high quality of life, (2) at the same time, significant shifts in production and consumption patterns have resulted in the EU consuming within sustainable limits, (3) potentials for efficiency improvements and recycling in the economy have been fully exploited, including through system innovation, (4) consumers use low environmental, health and social impact products and consumption habits have changed, and (5) products that are adaptable, long-lived, and designed for remanufacture are easily available and affordable.

In addition, Mr. Mazza stated that, before reaching the vision, some milestones have to be identified and achieved by 2030. These comprise: (1) Europe’s ecosystems and associated biodiversity are recovering, (2) stocks of renewable resources are managed more extensively and depletion of non renewable is slowed or halted, (3) consumption in the EU has shifted towards more sustainable goods, (4) products are better designed, more durable and recyclable, (5) public sector leads by example, (6) today’s niche markets have become more mainstream, (7) quality of labelling has improved, (8) infrastructure investments and urban and land use planning enable more sustainable habits (mainly mobility, waste reduction), (9) schools and university address issues of system thinking to raise awareness for environmental limits, (10) decision making is becoming more transparent with the science, (11) policy interface strengthened, and (12) beyond GDP metrics are widely used to inform public decision making.

Finally, Mr. Mazza presented an overview on policy instruments taken into account to address the vision for 2030 and 2050. In general, these comprise: (1) resource pricing upstream informed by scarcity, environmental limits and internalising external costs, (2) subsidy reform to abolish environmental harmful subsidies, (3) instrument set for shifting consumer choices and consumer habits (including discourse on social norms, instruments to enable substitution from income to leisure, infrastructure expenditures and planning decisions for enabling sustainable practices, changed rules on advertising, information, education and awareness raising), (4) strengthened standards on liability and warranty, (5) increasing efficiency and other product standards, (6) increased R&D expenditure, venture capital and green public procurement to support technological and social innovation, (7) instruments to improve transparency and accountability of business and political decision- making, (8) improved implementation of existing EU regulation, and (9) promotion

¹ Rockström et al., 2009: A safe operating space for humanity. *Nature*, 461, 472-475, doi:10.1038/461472a.

of shareholder responsibility, changing the incentive structure for investors to allow for accounting of long-term impacts, and promotion of not-for-profit business models.

Keynote presentations:

Tomas Ekvall (IVL Swedish Environmental Research Institute)

“Policy mixes targeted at metals”

In his presentation, entitled “Policy mixes targeted at metals”, **Tomas Ekvall** (IVL Swedish Environmental Research Institute), presented drivers, barriers, targets, visions and policy instruments taken into account to shape the **policy mix on metals** developed within DYNAMIX project.

At first, Mr. Ekvall presented a graph showing the trend on metals consumption in EU within the past decade: this evidenced that steel, copper and gold present an overall major demand in comparison to the quantity of metals normally employed in the society. These metals are normally employed in a variety of sectors, including building, infrastructures, vehicles (e.g. steel), wires production, plumbing and roofing (copper), jewellery, decoration, technology and investments (e.g. gold).

As Mr. Ekvall stated, the policy objectives should overall target an increase in recycling, material efficiency and substitution of metals with other materials.

Finally, Mr. Ekvall listed the policy instruments to be assessed within the mix, which include: (a) a strategy for dematerialization, (b) information campaigns, (c) green tax reform, (d) a package to stimulate leasing and sharing, (e) the establishment of recycling/reuse centres, (f) standard for products (e.g., modularity of products to make them easy to be repaired), and (g) research and development.

Keynote presentations:

Daniela Russi (Institute for European Environmental Policy - IEEP)

“Policy mixes targeted at land”

In her presentation, **Daniela Russi** (Institute for European Environmental Policy, IEEP, Belgium) talked about drivers, barriers, targets, visions and policy instruments taken into account to shape the **policy mix on land**.

At first, Ms. Russi introduced the policy mix’ overall objective, which aims at reducing EU agricultural land footprint and its related environmental impacts. In particular, the objective can be achieved by taking into account both production and consumption perspectives. On the consumption side, specific objectives include the reduction in the EU of meat, dairy products and eggs consumption (as they have a much higher land consumption per calorie than any other kind of food), the reduction of food waste (as globally about a third of the food for human consumption is wasted), and the reduction of the demand for first-generation biodiesel (which present in general a high land requirement and a low energy intensity).

On the production side, the main objective concerns an overall decrease of the environmental impacts of agricultural activities. In addition, policies should target the loss of biodiversity, the improvement of water quality and the reduction of water consumption, and the improvement of the carbon storage capacity of soil.

Accordingly, the developed policy mix comprises a set of instruments targeting the consumption and the production side respectively. In relation to consumption, the proposed policy mix includes instruments targeting food habits, food waste and bioenergy. Regarding food habits, these should comprise: increased VAT on meat products, the establishment of public canteens to supply recommended dietary limits and proposing vegetarian days, the development of targeted information/education campaigns on changing diets, as well as a series of sectorial agreement with large food retailers to display recommended healthy dietary limits of meat and dairy products. Concerning food waste, the instruments should comprise: review of eat-by labelling, the development of food redistribution programmes, a set of clear guidance on how to store products in retail, as well as education and information to consumers through food waste campaign. Concerning bioenergy, the instruments should include the strengthening of the biofuel feedstock sustainability criteria in the RED and their extension to incorporate indirect impacts of land use change;

From a production perspective, the instruments should comprise: stronger and more effective environmental and climate dimension for EU land management in future CAP reforms (targeting GHG emissions, soil quality, water quantity and quality, biodiversity), a revision of emissions levels in National Emissions Ceilings Directive (NECD) to reduce eutrophication, a set of measures for better management of the nitrogen cycle on farmland, an increase in irrigation water prices to cover at least full supply costs (e.g. by linking prices to cubic meters), a strengthen of pesticide reduction targets, an improved implementation of EIA on permanent grassland conversion, afforestation, and other agricultural developments, the increase in management plans/measures for Natura 2000 sites, the promotion of PES programmes financed by private actors, the establishment of a EU soil legislation which provides a mandate for cost-effective tackling of soil problems, the development of a LULUCF regulation setting targets for net carbon emissions from the land use sector, and finally the promotion of the research, monitoring and data collection and systematisation that is needed to improve the environmental performance of the agricultural sector.

Interactive group work and presentation of group work results in plenary:

"Policy mixes and selection of policy instruments for resource efficiency and decoupling with 3 sub-groups on: overarching policy mix for decoupling; policy mixes for metals; policy mixes for land"

During the interactive group work (duration: about 45'), participants were asked to join one of the three groups (each based on one the proposed policy mixes), in order to discuss three key questions: (1) Do you feel that important policy instruments are missing? If so, which? (2) How do you consider the effectiveness and political feasibility of the mix? and (3) What policy targets and instruments can be quantified? Please find below the results of the three groups:

Overarching group:

Do you feel that important policy instruments are missing?

- To bring about change, we don't only need information and awareness building-type education, but also professional skills (e.g. building sector: architects needing to bring about the change in those sectors that is needed).
- To encourage recycling, we shouldn't just focus on incineration capacity (e. g. Sweden has overcapacity of waste incineration plants) - ban on incineration of certain types of waste in order to encourage recycling could even be considered

-
- Green tax reform.
- Tax incentive for business model innovation.
- Innovation/ Eco-patent pooling: groups of companies that sign up to share patents.
- A regulatory framework that regulates innovation so patents can be pooled – this would promote the sharing of technological innovation
- Cap and trade at the local level.

How effective and politically feasible are the policy mixes?

- We should go for instruments that can be embraced by high-level multipliers so that they spread quickly across the economy.
- We should distinguish instruments in terms of objectives where legislation is key for achieving change vs. where there are softer means (where actors can pursue their own interests).

What policy targets and instruments can be quantified?

- Amount of waste going to landfills.

Metals group:

Do you feel that important policy instruments are missing?

- For the value chain: a combination of Life Cycle Assessment and Circular Economy Approach
- Need for international harmonisation and a level playing field.
- Leasing society – but keeping a life-cycle approach.
- Standards, auditing and certification.
- Information and incentives (although the main aim should be for the layman to understand the why. This should also be specific to the product – e.g. cars, mobile phones etc.).
- Systemic approach to address complexity: understand first the value chains, and afterwards take a step back to look at the whole system & interactions.

What policy targets and instruments can be quantified?

- a) Instead of having a material reduction target, it would be better to have a reduction in environmental impact.

How effective and politically feasible are the policy mixes?

- The implementation of point (a) mentioned above, could make the policy more acceptable for companies.
- A target wouldn't be enough; we also need appropriate price signals.

Land group:

Do you feel that important policy instruments are missing?

- Information sharing and consumer behaviour change, especially food waste.

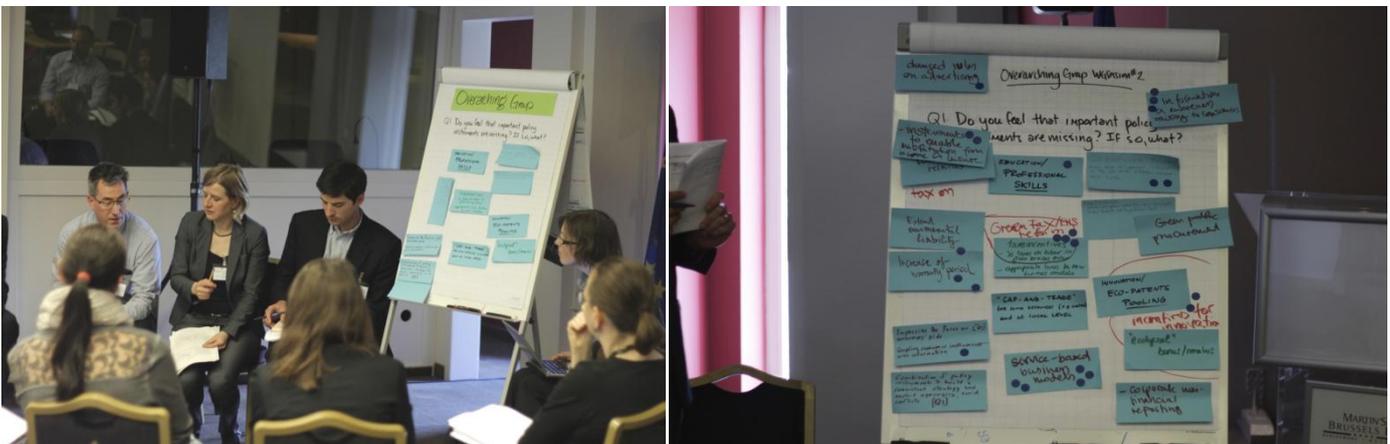
- More radical innovation, e.g. vertical farming (hydroponics).
- Key areas: retail sector and past-sell-by food.
- Mandatory separate collection of bio-waste.
- Different kinds of energy sources, not only biofuels. There are other land uses that are important – bio-plastics and food.

How effective and politically feasible are the policy mixes?

- Taxes feature heavily in the stimulation of the circular economy.
 - A meat tax seems particularly challenging.
 - VAT on meat probably wouldn't work because of complicated rules.
- Behaviour change:
 - Behaviour change is currently going fast in the wrong direction.
 - Food waste and meat consumption both increasing.
- Interaction between CO₂ targets and food targets (biofuels).

What policy targets and instruments can be quantified?

- Land use per capita.
- GDP per square meter? But this could be a perverse incentive to increase settlement.



5 Session 3: Requirements for policy mix assessment

Session 3 was opened by Tomas Ekvall (IVL Swedish Environmental Research Institute) and followed by an interactive group work, in order to define the needs for policy assessment with sub-groups on the three policy mixes.

Keynote presentations:

Tomas Ekvall (IVL Swedish Environmental Research Institute)

“DYNAMIX policy assessment”

In his presentation, **Tomas Ekvall** aimed at providing an overview on the work on qualitative assessment and on the ex-ante analysis model of the three policy mixes (overarching resources, lands and metals) carried out in DYNAMIX.

Firstly, Mr. Ekvall referred to the applied methodology, which involved the use of specific economic models, such as ICES (Intertemporal Computable Equilibrium System), to take into account the variables related to sectors and countries, and MEMO II (Macroeconomic Mitigation Option Model) to integrate dynamics and market imperfections into the model. The economic models were complemented by a toolbox of methods to model physical flows in the assessment, such as Life Cycle Assessment, Material and Substance Flow Analysis, Material Pinch Analysis, Water Footprint, and Dynamic Carbon Footprint.

Mr. Ekvall then provided some further details on the qualitative and quantitative assessment, mentioning that this was performed according to different dimensions: environmental, economic, social, and government dimensions. The environmental assessment aims at looking at the cause-effect relationship (e.g., on how effectiveness of information campaigns can be assessed) and other important parameters, such as biodiversity, toxicity, noise, etc; the economic analysis looks at allocation costs, market power, transition costs impacts of asymmetric information, etc; the social assessment looks at labor market, social welfare and inequity; and, finally, the governance assessment looks at legal barriers and public acceptability and behaviour.

Finally, Mr. Ekvall introduced the guiding questions that participants were invited to discuss during the interactive group work following the presentation (see below).

Interactive group work and presentation of group discussion results:

“Defining needs for policy assessment with 3 sub-groups on: overarching policy mix for decoupling; policy mixes for metals; policy mixes for land”

During the 45 minutes of interactive group work, participants were asked to join one of the discussions (on overarching, land, and metal policy mixes respectively) and to discuss (first in pairs, and then within the group) the following questions:

1. On what impacts should the assessment focus?

2. What do we need to consider in the assessment of the specific impacts?

Participants were then asked to write their reflections on moderation cards, which were collected on a flip chart, and then clustered into bigger themes. Finally, the results were presented by rapporteurs to the panel.

Overarching policy mix assessment:

The discussion focused on three specific kinds of policies: introduction of green taxation, service oriented business models and information, and awareness campaigns targeting consumers.

Considering these policies, the impact assessment should focus mainly on raw material consumption: some possible indicators could be linked to the overall footprint of products throughout their lifecycle (e.g. a reduction could be a measure of success), the number of jobs created, and the potential changes in the health impact (e.g. on trade-offs: dirty recycling activities may affect the health of who is working in the plants).

Participants agreed that issues of personal preferences of consumers may determine whether a particular policy is successful or not, and pointed out that information alone could be not sufficient alone to change people's behaviour; instead, they agreed that if more environmental issues start appearing in the media and newspaper articles, this could indicate progress. In this framework, some indicators can help in understanding the impacts on the importance of green public procurement, such as the use of plastic bags, venture capital, investments in energy efficiency and incentives for eco-tourism.

Metals policy mix assessment:

The participants addressed the questions by focusing on the three dimension of sustainability (environmental, economic and social dimensions). Concerning the environmental dimension, the assessment of impacts should refer to existing studies (on water, climate change, etc.), LCA categories, environmental media, etc, and build on what has been already published.

Concerning the economic impacts, the policy mix should be evaluated on the basis of economic factors: e.g. competitiveness, security of supply, jobs, efficient use of products, innovation, research & development of funding schemes, in order to assure sustainable use of products and development of innovation and sustainable business models. Concerning the social assessment, participants pointed out that the impacts of certain policies should be estimated for existing infrastructures (as for instance on waste water treatment facilities).

On a more general level, participants agreed that policies should always aim at minimizing environmental burdens. In addition, these should not contradict with existing policies, should be consistency across legislation, should look at market structure (e.g. How does policy affect market) and finally take into account diverging rules in markets, meaning that the global dimension of the market should be nevertheless taken into account.

Land policy mix assessment:

According to the outcomes of the group work, the impacts of the policy mix on land should take into account different factors. At first, it would be necessary to look at the impacts on soil productivity in relation to climate changes, reduced water availability, intensification of agriculture and degradation of ecosystem services. Secondly, it would be important to take into account and clarify the concept

of “sustainable intensification”, its related impacts and entailed policies. Participants also pointed out that at the actual state, a standardized classification of soil use cross EU is missed.

On a more general level, participants agreed that the impact assessment should take into account the typology of the land, the land use and quantitative consumption (referring in particular to the sustainability of production of high quality land, and on what is the soil delivering), the sustainability of aggregated production and on the protection of high quality land.



6 Session 4: Policy mixes for resources efficiency and decoupling: needs for design, selection and implementation

The last session comprised a panel discussion with six representatives from EU and national policy making, the business sector, research, environmental agency, and civil society organization: Carina Vopel (Head of Unit, Directorate F.1, DG Environment, European Commission), Gunilla Blomquist, (Ministry of the Environment Sweden), Christian Hagelüken, (Umicore), John Barrett (School of Earth and Environment, University of Leeds, UK), Pawel Kazmierczyk, (European Environment Agency, Denmark), and Keith James (WRAP, UK).

The main aim of the panel discussion was to reflect on the discussions during the Policy Platform and the group work results the participants developed during the day as well as to learn more on the panellists’ opinions on the needs, selection and implementation of policy mixes for resource efficiency and decoupling. At the beginning, each panellist provided a 5 minutes statement in order to discuss the following questions:

- What are your general experiences with policy instruments and policy mixes for resource efficiency in Europe? What works well, what needs to be improved?
- Which aspects of the discussion during PP3 and/or the group work results did you find most stimulating and why?

- How could these aspects be translated into policy mix design and policy assessment?
- Which aspects you would have liked to hear were not addressed?

After this first round, the panellists had the chance to give a short statement/take-away message from what they've heard from the other panellists, and on main aspects the project should focus on when going forward. The session was then opened for a plenary discussion.

Carina Vopel began her statement with a comment on the strength of policy measures, with references to the policy instruments presented during the 3rd Policy Platform. In her opinion, soft targets and measures are typically not the only solution whenever an issue has to be tackled, while on the other hand, stronger measures require a strong follow up and engagement. Therefore, the European Commission needs to focus on the proper implementation of policies that are already in place, but not yet effective. Ms. Vopel mentioned then that business and consumers behaviour is still largely costs driven, and that the polluter pays principles would need to be better implemented. Moreover, environmental taxation has been on the EU political agenda for a long time and is already on the agenda of many Member States, but it is difficult, at current times, to get political commitment for additional taxes. In addition, adopted measures should not be counter intuitive, in order not to lose credibility (as it happened, for instance, with incentives for investments on solar energy that disappeared two years after their implementation), need to address societal issues, and should not create any undesired effects. In this sense, great responsibility lies on the shoulder of policy makers who should be able to optimize policy effects, combine strong and soft policy measures, and also understand the stakeholders' needs that are affected by the decisions taken.

Gunilla Blomquist opened her intro by stating that, to achieve resource efficiency, better cooperation between different actors and political levels (especially from local to national) is needed, as many countries still suffer from a lack of policy coherence between different levels (national, regional, local). Concerning policy instruments and tools, Ms. Blomquist agreed with Ms. Vopel in arguing that it is necessary to collaborate with key actors and stakeholders, in order to identify contradicting instruments and avoid counterintuitive effects. Ms. Blomquist mentioned then the producers' responsibility, which in her opinion needs to be better evaluated. Ms. Blomquist insisted also on the importance to implement a combination of policies (e.g. regulation + taxes + information, etc), as individual instruments alone could be not sufficient to tackle a complex problem. In her view, we need a holistic thinking, better coordination, as well as integration of resource efficiency with other policy areas (e.g. with policies on climate changes). Ms. Blomquist then mentioned the importance of the consumers, meaning that their role and responsibility must be clarified; in addition, it would be necessary to get feedback from consumers, especially on the uptake of measures and on drivers of consumption patterns. From a producers' perspective, Ms. Blomquist stated that companies should target sustainable development in an integrative manner, for instance, by integrating education and information measures in their internal policies. In addition, industrial symbiosis should be seriously taken into account and integrated into the political agenda. Finally, Ms. Blomquist stated that a global perspective should always be taken into account, in order to avoid burden and responsibility shifts, and to achieve absolute rather than relative decoupling (as in the case of Sweden).

Christian Hagelüken in his statement, referred mainly to the metal sector as the sector in which he works. He argued that resource efficiency can mainly be achieved by closing the life cycle of metals, which needs indeed a proper implementation of the recycling system, but is currently hampered by a lack of proper policies and communication. Mr. Hagelüken then mentioned the issue of translating policies into practices, keeping in mind that the metal sector needs to be prevented from illegal

shipment of metal products (that could be achieved by putting in place meaningful recycling targets). Mr. Hagelüken insisted on the importance of consistency between different policies, as otherwise the opportunity to be more efficient is lost, especially when considering metal recycling. On a more general resource level, Mr. Hagelüken agreed with Ms. Vopel and Ms. Blomquist and argued that a major problem consists in the effective translation of policies into practice (e.g. the implementation of the legal framework). This is especially true from an industry perspective, where policies must be translated into a business case, for instance, by promoting fair competition and proper legal condition. Moreover, it would be important to have the support of the 'critical mass' of consumers (where public procurement could have a role). Mr. Hagelüken stated that specific solutions targeting different sectors are needed (as, for instance, cars require different policies and actions than mobile phones, etc.), that can be turned into win-win situations. In this regard, it is not difficult to identify win-win situation on a microeconomic level, but this may not be sufficient to be realized on a macro-level. In conclusion, Mr. Hagelüken stated that we need to improve communication between different stakeholders and optimize the overall optimum, so that beneficiaries are not limited to a restricted group of people.

Pawel Kazmierczyk opened his statement by stating that we subjected the earth to our needs. He argued that a major problem lies in the fact that we rely on technological progress to address resource efficiency, but we lack education and awareness on proper production and consumption patterns, which is finally causing rebound effects. Thus, under these preconditions, technological fits will not be the answer. Mr. Kazmierczyk then talked about targets for resource efficiency: these are typically not binding, so that the trend is to continue with business as usual. Therefore, we would need more effective targets and indicators, in order to measure progress and to know if we are proceeding towards the right direction. Mr. Kazmierczyk extended the discourse to Member States by stating that the implementation of resource efficiency targets in the countries is still very inhomogeneous in terms of degree of implementation, but also in terms of common understanding of what can be considered successful. In this context the EU plays a critical role, as by now the resource efficiency targets that are already in place in the Member States basically originate from the EU regulations.

James Keith focused mainly on the drivers for resource efficiency and on their understanding. He argued that a crucial factor lies typically on the fact that we need to understand a lot about human behaviour, and on what is actually driving our choices. On the other side, Mr. Keith argued that it is necessary to put the right facilities in place for people to act "good": for instance, for making people conscious about the importance of recycling practices, it is crucial to give the right signals and to show that the waste management facilities are operating. Mr. Keith then mentioned the example of food: in his opinion, we need to find the right drivers and prompts to change our unsustainable nutritional habits (mainly referring to meat consumption), principally driven by cultural factors and old habits. In conclusion, Mr. Keith stated that whenever we propose innovative business model, we have to understand the complexity of individuals and their contexts in order to stimulate synergies and understand the drivers, and to look at and measures future scenarios where possible.

John Barrett stated that it is crucial to achieve systemic change. He then addressed some main barriers hampering resource efficiency, as the incredible inefficiency of machines, the inability of price as a single measure to address the issue of resource efficiency, and lacks in regulations. Concerning this issue, Mr. Barrett mentioned the case of steel employment in the building sector: instead of minimum amount of steel required by the law, a maximum allowed amount should be put in place. In this sense, some of the measures do not even need a technological breakthrough. Mr. Barrett then stated that we need to paint a coherent picture of the future and to achieve a robust

comprehension on the future scenario, that in his opinion is not yet enough “frightening”. In the meantime, it would also be necessary for governments to give right signals and demonstrate that achieving resource efficiency is possible.



Plenary Discussion: During the plenary discussion, participants raised a number of issues to the panellists. In particular, the following points were highlighted:

- In order to be successful, the message on resource efficiency must be sold in the right way, and the right conditions for investments have to be put in place.
- Resource efficiency is a robust concept, already on the EU political agenda since some years. We should, therefore, avoid reshaping things every time a new Commission gets in place.
- It would be good to have a “single figure” or indicator (e.g. similar to GDP) to get a global feeling on the success of EU in achieving resource efficiency. Similarly, it would be interesting to have some indicators to figure out which measures work and which don’t, as, for instance, an exchange of good practices at EU level and between Member States (e.g. peer-to-peer work between member states).
- Industrial symbiosis is an interesting option for tackling resource efficiency and waste recycling in the business sector, but it certainly needs the support of policies and governments to be implemented, combined with public investments – “it will not happen alone”, as one participant with experiences in industrial symbiosis pointed out.
- Some arguments were exchanges on the effectiveness of taxes as policy instrument for achieving resource efficiency, both alone (where the UK provides a good example with its taxation on landfill) or in combination with other policies.
- It was pointed out that there is a general resistance to adopt strong legislative measures and more willingness to accept soft measures in resource efficiency policy. The question was raised if soft policy measures should be coordinated at the EU level or should be national agencies, like WRAP UK, promote the implementation of soft measures?
- Participants raised the issue that resource efficiency is usually not an issue in the debates about competitiveness. Panellists answered that there is the potential, in many sectors, to

create innovative business models for products and services that are appealing for investors and resource efficient at the same time. An example concerns the automotive company Opel, which started to lease batteries: although this business model was adopted to make the product more attractive to industries, the “side” effect was indeed an increase in resource efficiency. In other words, it is necessary to make a business case out of resource efficiency and bring together environment and business benefits.



Closing – next steps and events in DYNAMIX

Martin Hirschnitz-Garbers, Ecologic Institute, Germany

In the closing speech, Martin Hirschnitz-Garbers thanked the participants for taking part in the event and informed the audience that the DYNAMIX consortium will use the results of this Policy Platform in their future work to develop an effective policy mix for resource efficiency. All keynote presentations, PPT slides, pictures and the event report are available online at the DYNAMIX website:

<http://dynamix-project.eu/3rd-dynamix-policy-platform-%E2%80%9Cpolicy-design-and-assessment-three-policy-mixes-resource-efficiency%E2%80%9D-6>

Participants of the 3rd DYNAMIX Policy Platform, Brussels, 6 May 2014

