



DYNAMIX

Decoupling growth from resource use
and its environmental impacts



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POLICY OPTIONS FOR A
RESOURCE EFFICIENT ECONOMY

Policy packaging in support of resource efficiency and absolute decoupling: *A conceptual model*

Martin Hirschnitz-Garbers / Henning Wilts

WRF 2015, WS7: “Resource Efficiency and the Circular Economy:
Policy Mixes and Scenarios”

14th of October 2015

<http://dynamix-project.eu/>

<http://www.polfree.eu/>





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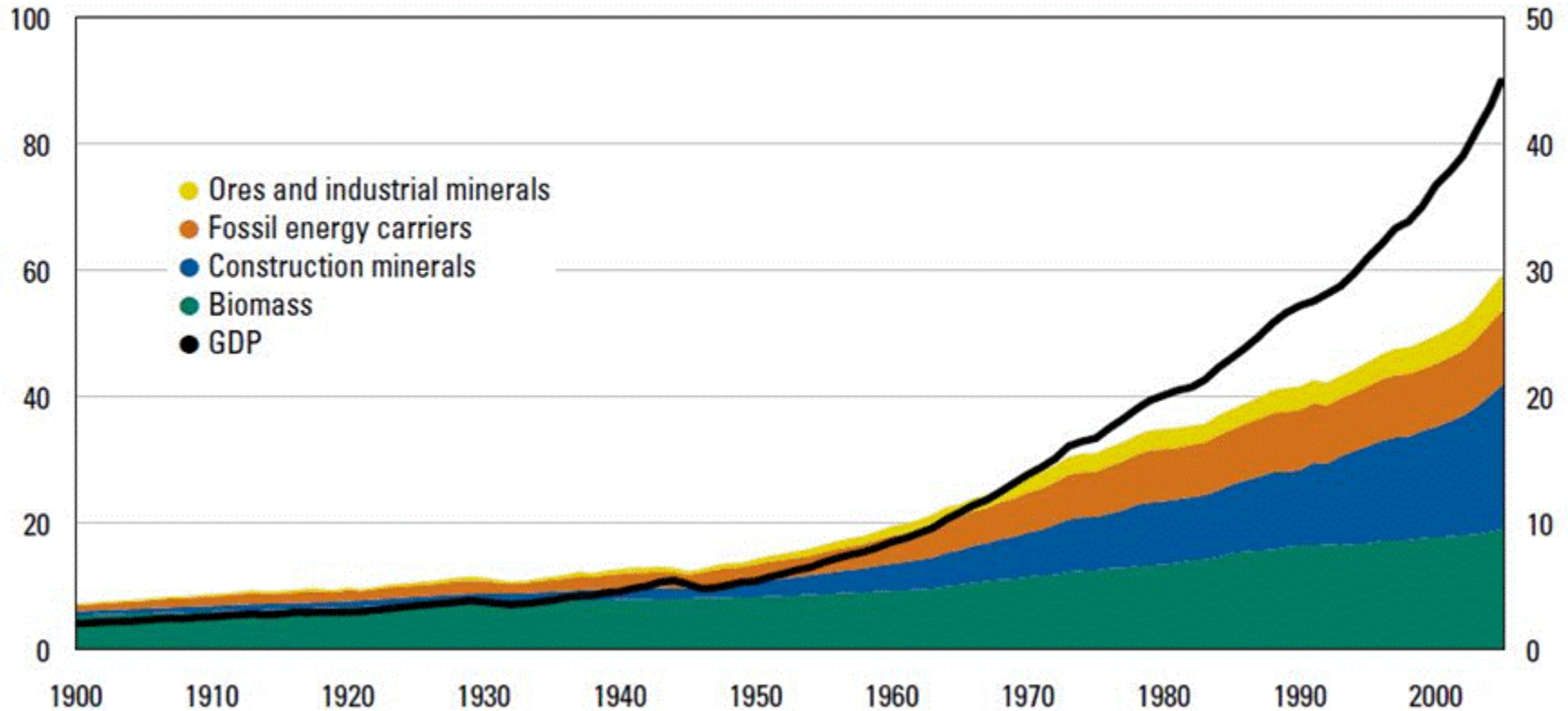
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WHY POLICY MIXES – SCOPE OF THE PROBLEM

Material extraction
Billion tons

GDP
trillion (10¹²) international dollars



Global Material Extraction in billion tonnes, 1900 – 2005; Krausmann et al. 2009





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WHY POLICY MIXES – SCOPE OF THE PROBLEM

- Beyond zone of uncertainty (high risk)
- In zone of uncertainty (increasing risk)
- Below boundary (safe)
- Boundary not yet quantified

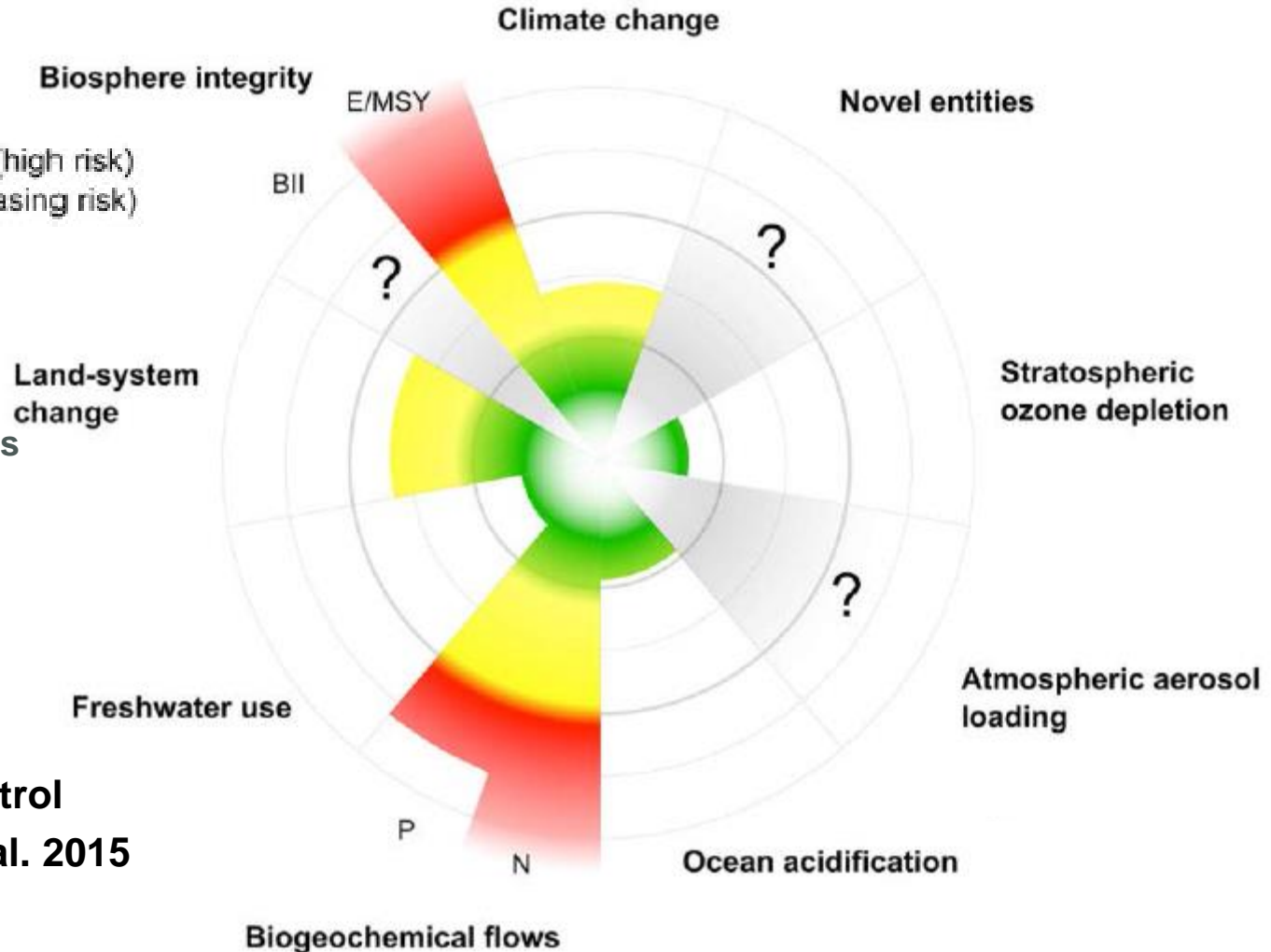
BII = Biodiversity Intactness Index

E/MSY = extinctions per million species-years

P = Phosphorus

N = Nitrogen

Current status of control variables; Steffen et al. 2015





WHY POLICY MIXES?

- Complex, interdependent and large-scale environmental problems
- Multitude of actors along international value chains
- Experiences of unintended (negative) side effects of policies
- Increasingly interwoven policy targets in many policy areas
- Complex multi-actor and multi-level governance systems

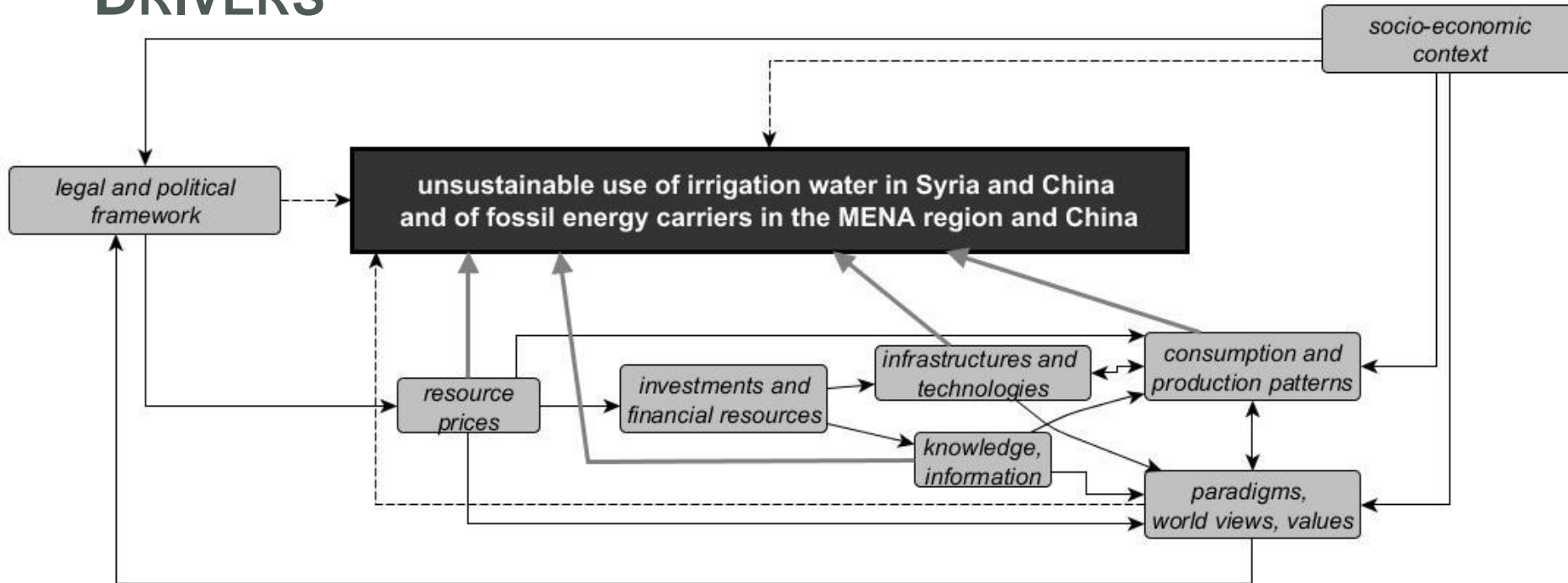
⇒ Tinbergen Rule „Optimal ratio of the number of tools to targets is 1:1“ (1952) does not fit in this context of interactive effects and complex policy design processes





WHERE TO START? IDENTIFYING INTERVENTION POINTS:

DRIVERS



direct effects (grey solid arrows) —————>

indirect effects (black dashed arrows) - - - - ->

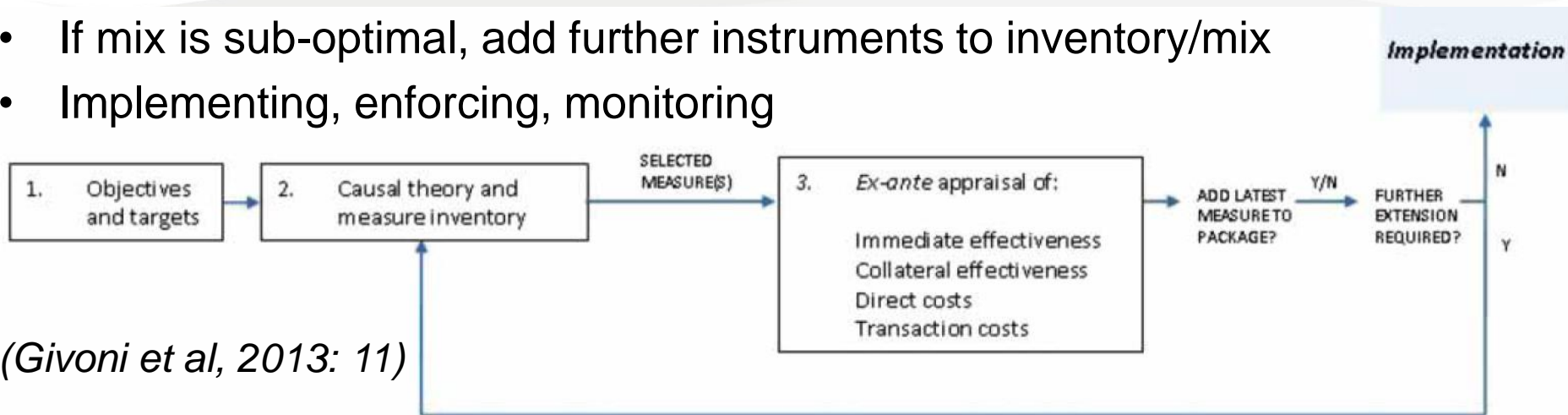
(based on *Hirschnitz-Garbers et al. 2015*)





CONCEPTUALISING POLICY MIXES

- Definition of objectives and setting of targets
- Elaborating a causal theory/heuristic for problem solving and inventorising potentially relevant instruments => measure inventory
- Selecting promising measures and ex-ante appraisal (anticipation, mental models, scenarios, modeling and simulation, etc.) of effectiveness, direct costs and transaction costs
- If mix is sub-optimal, add further instruments to inventory/mix
- Implementing, enforcing, monitoring

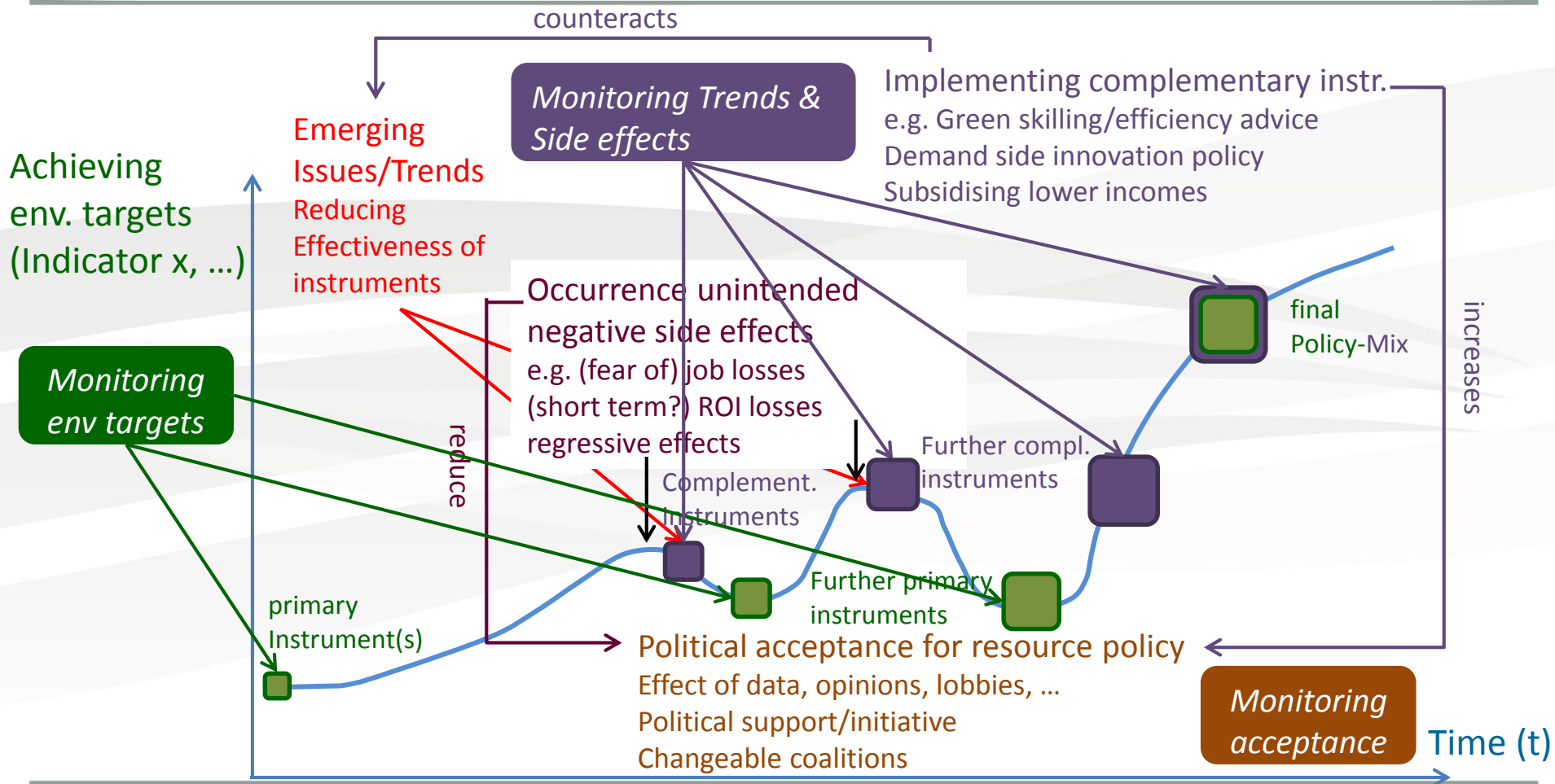


(Givoni et al, 2013: 11)





POLICY MIXES – SEQUENCING & ROADMAPMING





POLICY MIXES FOR RESOURCE EFFICIENCY

What kind of policy framework

- is needed to boost resource efficiency in Europe, and
- leads to absolute reduction of both primary resource use and global environmental burdens?

=> a policy-mix that

- optimises synergies and addresses trade-offs between different areas and policies, and
- stimulates pro-active approaches by business in potential lead markets.





POLICY MIXES: KEY CHARACTERISTICS

The transition towards a Circular Economy – expectations could not be higher: e.g. annual cost savings of more than 500 Mio. EUR (EMF 2013).

The concept of policy mixes helps to identify key obstacles and trade-offs:

Consistency:

1. Waste prevention vs recycling as job motor
2. Closing material loops vs incineration

Coherence: Europe as a recycling society vs national waste autarchy

Credibility: The ups and downs of the Circular Economy Package





POLICY MIXES: OBSTACLES AND TRADE-OFFS

If resource efficiency and the circular economy are win-win concepts, why don't we see faster progress?

- The more ambitious an instrument, the lower the immediate profitability for the actors involved
- Trade-off between the predictability of an instrument and its flexibility
- Trade-off between the level of specificity of an instrument and its depth, the level of inclusions of up- and down stream actors





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POLFREE POLICY MIX CASE STUDIES

- (1) Setting incentives for a more resource efficient product design by individual responsibility of producers
- (2) Specific eco-design requirements that make reuse and repair of products economically viable
- (3) Establishment of waste targets that focus on the production of high quality secondary resources – recycled content quota



DYNAMIX POLICY MIXES – BRIEF OVERVIEW

Land policy mix	Metals policy mix	Overarching policy mix
<ul style="list-style-type: none"> - Reduce the global agricultural land use due to EU consumption - Decrease environmental impacts of agricultural activities, in the EU and globally 	<ul style="list-style-type: none"> - Reduce the use of virgin metals by 80%. - No significant increase in the use of other resources or environmental impacts. 	<ul style="list-style-type: none"> - Support high levels of quality of life of European citizens - Reduce impacts associated with average household consumption
Regulation for Land Use Change VAT on meat products Strengthened pesticide reduction targets	Materials Tax Product Standards Increased spending on research and development	Circular Economy Tax Trio EU-wide feebate schemes Boosting Extended Producer Responsibility

2050 policy mix targets

selected instruments of policy mix



CONCLUSIONS & CHALLENGES

- A policy mix is much more than an instrument mix => **politics, policy processes, strategic and long-term orientation**
- Policy mix – **adaptive, time-dynamic combination of mutually supportive (non-conflicting) policy instruments (instrument mix) and institutional actors at different levels of government aiming at achieving various policy goals while at the same time maximising synergetic effects and minimising unintended negative side effects (own def., based on del Rio & Howlett 2013)**
- Policy mixing is not just picking the right instruments, it is the “**art of timing, combining, and sequencing instruments to meet multiple goals amidst changing circumstances**” (Sterner & Coria 2012)
- Hence much more difficult to design, to implement and to evaluate





CONCLUSIONS & CHALLENGES

- Difficult to undertake ex-ante assessments of cumulative effects
- Any effective policy mix will only be theoretically effective if it is politically feasible and socially accepted
- Time sequencing/roadmapping of policy mixes could reduce difficulties
- Close monitoring and policy consistency needed: long-term, stable policy framework more important than whether the policy is supportive or not
- Governance challenges of roadmapping and implementing policy mixes consistently over time in changing political contexts (e.g. elections)
- **Proactive, more strategic policy packaging depends on successful cross-departmental, multi-layered and polycentric governance**
=> we are/have to be on the way





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THANK YOU VERY MUCH!

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