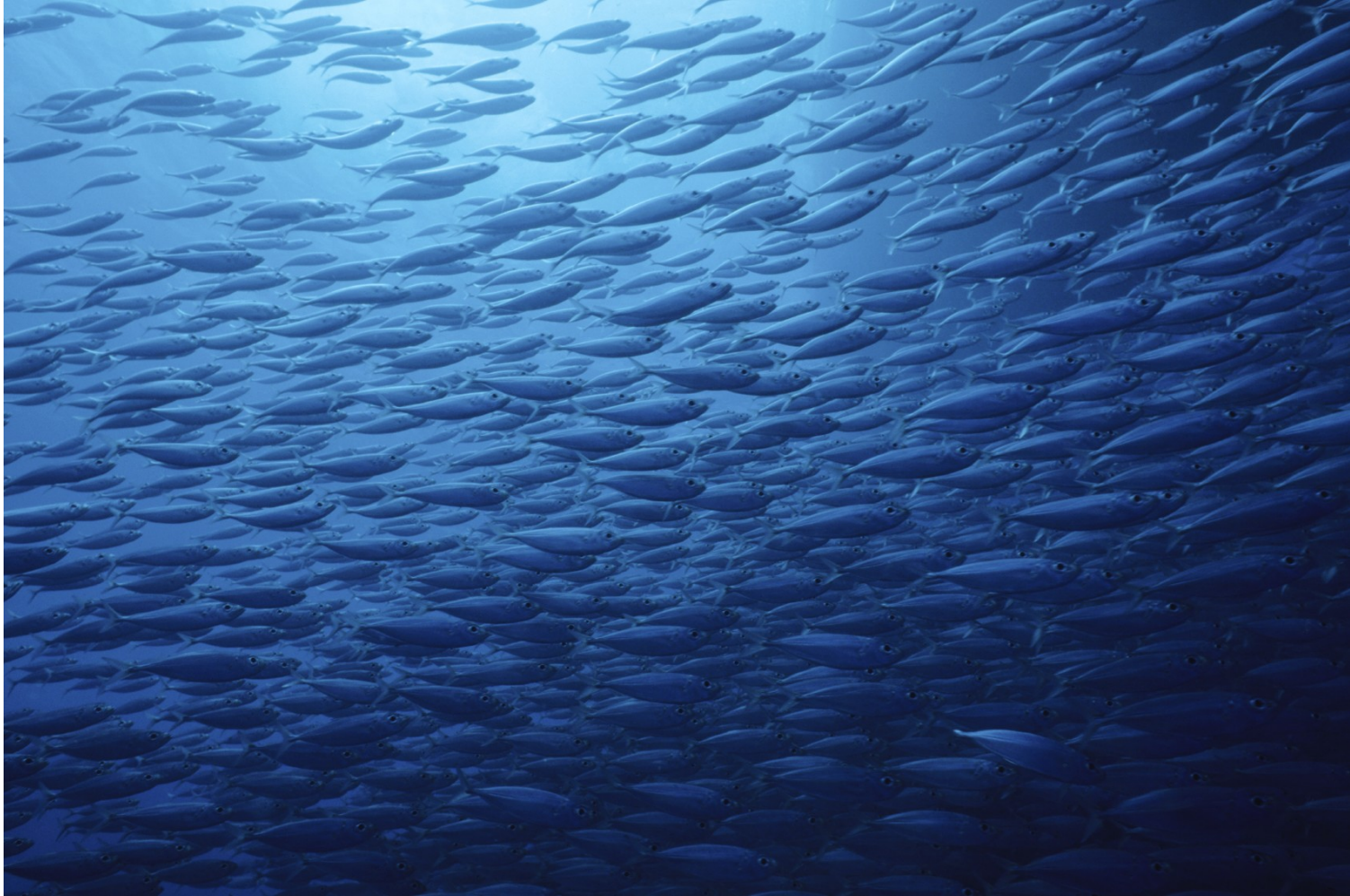




Environmental assessment of policy mixes

The qualitative environmental assessment of the Over-arching Policy Mix, the Land Use Policy Mix, and the Metals Policy Mix was based on desk research of the available literature, and identified environmental impacts against the environmental objectives established for the DYNAMIX project. Key challenges in carrying out the assessment, and in interpreting the results, were the degree of uncertainty around the success of instruments; and difficulties in assessing their scope, and boundary issues in determining impacts. Unsurprisingly, our assessment identified primarily positive impacts, but in some cases tempered by countervailing negative impacts, particularly for land use instruments.

Method

The core approach for assessing the expected environmental impacts of each of the policies from the three mixes selected for detailed evaluation was to review available evidence on potential impacts. This primarily involved reviewing existing literature and case examples, to identify past impacts of similar policy approaches and estimate from that the likely effects of each individual policy. The assessment focused on impacts related to the key DYNAMIX environmental objectives on raw material use, greenhouse gas emissions, land use, and water use. In addition, some of the land use policies were assessed for their impacts on biodiversity.

Assessments were summarised using the following scale of estimated magnitude of change (↗ = beneficial; ↘ = detrimental), and we noted where impacts were particularly subject to uncertainty:

↗↗↗↗ or ↘↘↘↘ = High (above 100% deviation from business as usual in the absence of the instrument)

↗↗↗ or ↘↘↘ = Medium high (50-100% deviation)

↗↗ or ↘↘ = Medium low (10-50% deviation)

↗ or ↘ = Low (less than 10% deviation)

DYNAMIX environmental objective	Indicator
Extraction of raw materials: Reducing use of virgin metals by 80 % (base 2010)	Change in the extraction of raw materials
Greenhouse gas emissions (GHG): 2t CO ₂ -equivalent per capita per year	Change in GHG emissions
Land use: Zero net demand of non-EU arable land	Change in the global land requirement required for EU consumption and production
Freshwater use: No region should experience water stress	Change in the water use

Discussion

The **impacts** of most individual policies assessed was regarded as **relatively modest** (notwithstanding a degree of optimism bias in our working assumptions). There are no magic bullets for achieving resource efficiency; and our findings reinforce messages emerging from the separate public acceptability assessment regarding the need for paradigm change.

A key problem in our assessment was how to deal with **uncertainty**, both in relation to individual policy instruments but also in assessing the impacts of a **policy mix**. Uncertainty was relevant to **governance challenges** (legal, but particularly **public acceptability**); to **technical feasibility**; and, of course, to the **nature and scale of impacts**.

Extra-EU impacts of policies require particular care – for example, reduced production from EU land in response to policies aimed at securing environmental improvement may lead to increased production pressures in other economies, including ones with less effective environmental constraints on, for example, deforestation. A key lesson is therefore that – as with climate policies – **full effectiveness of resource efficiency policies** may depend on the **extent to which similar policies are also adopted in other economies**.

An appropriate response to the problems of **uncertainty** and the **scope of impacts** identified above is to avoid a rigidly programmatic approach to implementation, and ensure that policy programmes are **flexible enough to deal with a range of real world responses**. Clarity of direction, through the adoption of over-arching policy statements, or enshrining key policy goals in legislation, may help to provide private sector actors with **credible signals of the direction of travel**.

Delivering broader societal objectives may require a move from traditional **quality control** instruments (point source emissions controls; limit values for substances in air and water, etc.) towards **volume control** instruments (limits on total emissions from an economy, or total inputs). The latter are more challenging to design, particularly for resource inputs to the economy.

Results

The table below sets out our assessment of each of the policy instruments in the Policy Mixes. A word of caution: the nature of the assessment, and difference in scope of the instruments, means that direct comparison between the estimated impacts of different polices is not possible. The table should be seen as an introduction to the detailed assessments rather than as a summary of them.

	(Potential) Environmental impacts				
	Raw materials	GHG emissions	Land use	Freshwater use	Biodiversity
Land use policy mix					
Information campaign on food waste	↗	↗↗	↗	↗	na
Food redistribution	↗	↗↗↗ to ↗↗↗	↗↗↗ to ↗↗	↗↗↗ to ↗↗	na
VAT on meat	↗ or ↘	↗↗↗ to ↗↗↗	↗↗ to ↗	↗ to ↗↗	na
An improved CAP	↗	↗↗	↗ or ↘(?)	↗	↗↗
An improved NEC Directive	↗	↗	↗	↗↗	↗
Payment for Ecosystem Services	↗	↗	↗ or ↘	↗	↗↗
LULUCF regulation	↗ (?)	↗↗	↗	↗ (?)	↗
Pesticide reduction and guidance*	↗	↗ or ↘	↗ or ↘	↗	↗↗↗↗
Metals policy mix					
Internalisation of environmental costs	↗↗	↗↗	↗	↗↗	na
Materials tax	↗	↗	↗	↗	na
Sharing systems	↗	↗	↗	↗	na
Increased R&D spending	↗↗	↗↗	↗	↗	na
Product standards	↗↗	↗↗	↗	↗ to ↗↗	na
Overarching policy mix					
Skills enhancement	↗	↗	↗	↗	na
Consumption to leisure	↗	↗	↗	↗	na
Restricting advertising	↗↗	↗↗	↗↗	↗↗	na
Local currencies	↗ (?)	↗ (?)	↗ or ↘(?)	↗ (?)	na
Circular economy tax trio	↗↗	↗	↗	↗	na
Feebate schemes	↗	↗↗ to ↗↗↗	↗	↗	na
Reduced VAT	↗ to ↗↗	↗↗	↗	↗↗	na
Extended producer responsibility	↗↗↗	↗↗	↗	↗	na

Key:

Likely very positive

Likely positive

Likely somewhat positive

Assessment uncertain

*NB Also assessed as ↗↗↗ for soil functionality and ↗↗↗↗ for water quality

References

The research and other literature used as the basis for the environmental assessment of each policy instrument is set out for each instrument in:

1. Nesbit M, Watkins E, Harris S (2015). Environmental assessment of DYNAMIX policy mixes. DYNAMIX project deliverable D5.1. London: Institute for European Environmental Policy.

Additional general literature of relevance to the assessment includes earlier outputs from DYNAMIX, especially:

1. Ekvall, T. et al. (2015): Development of DYNAMIX Policy Mixes – Deliverable D4.2. Gothenburg, Sweden: IVL Swedish Environmental Research Institute.

2. Tan, A. et al. (2013): The underlying reasons for resource (in)efficiencies? - Deliverable D.2.2., Paris: BIO Intelligence Service.

3. Umpfenbach, K. et al. (2015): How will we know if absolute decoupling has been achieved and will it be enough? - Common Approach for DYNAMIX, Deliverable D.1.3., Berlin: Ecologic Institute.