

# | Playing with hyenas, summary |

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## 1. Text summary

### General

With Consumption Sustained/Playing with Hyenas, the Dutch NGO SNM<sup>1</sup> have developed a novel strategy for the greening of our consumption. For a sustainable consumption within 35 years, SNM aim at a - what they call - second round for action. Playing with Hyenas formulates targets for forty-four product groups and sees innovation and system transitions as key mechanisms for their advance. The methods used in Playing with Hyenas have been applied to the Dutch economy, but are applicable to any economy with sufficiently detailed economic and environmental data.

### Legitimization

In the late eighties/early nineties the emerging science of LCA<sup>2</sup> created dynamics in environmental product policy and design across European countries. These have now virtually come to a stand-still. Amongst the causes, the authors reckon at least four shortcomings of LCA as a sole base for accounting and improvement: 1) the absence of a connection between product level environmental targets and macro-economic environmental aims, 2) the impossibility to judge and rank absolute innovations (new product concepts), 3) the incapability of scientific methods to defend management against pressure group attacks, thus making environment a no-go-area for product communication, 4) the creation of product *function* as the key for environmental comparison, leading to statements that for instance a Lotus equals a Smart equals public transport. For millions of users this is too far from reality.

Neither of the authors accepts an in memoriam of environmental product policy. Several reasons are given for this, perhaps the most important being that focusing on products easily gives an outlook on innovation, while fundamental innovation being a key in reaching long-term environmental targets.

### Product selection

The report crosses environmental and economic data of seventy product groups and ten environmental stressors (data sources '01-'04). The result is 44 *hyenas*, defined as those product groups scoring worst on the ratio *environmental impact per euro product value* (E<sub>2</sub>-ratio). Together, hyenas combine small volumes of consumption with major parts of impact, thus being a perfect selection indeed for a second round for action.

### Aims general

Through benchmarking product groups against impact per value, Playing with Hyenas connects LT impact reduction targets for ten environmental impact stressors of production/consumption chains, national and international environmental agreements and targets, macro-economic outlooks and autonomous environmental developments. It does so as accurate as possible.

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<sup>1</sup> Stichting Natuur en Milieu is a leading ngo in environment & nature in the Netherlands ([www.natuurenmilieu.nl](http://www.natuurenmilieu.nl))

<sup>2</sup> Life cycle analysis, a method to compute a product's environmental impact throughout all production, consumption and disposal stages

### **Aims per hyena**

To each hyena a specific innovation target is assigned for the medium term future (ten years, or three to four product generations) and system transition assignment for the long-term (2040).

### **Decision making and tracking tools**

For a specific hyena actors constellation, two reference tools help to verify whether their product group transition is on track: 1) the current product group performance against the above mentioned LT-aims, 2) the product group performance against up-to-date technical potential explorations.

The report adds two tools for verifying whether investments are justified: 1) the comparison of a specific investment's yield against yields anywhere else in the product group economic network (yield in terms of environmental improvement out against money in), and 2) comparison of specific investments against so-called shadow prices.

### **The playing**

The authors use a game metaphor when it comes to roles, characters and interaction patterns. They reckon producers, consumers and governments amongst the key players with the data providers (administrators) as conditional. Amongst the jokers are scientists and other knowledge providers, NGOs, media, and trade branches, popping-up every now and then to change data gathering methods, product group rankings, transition play styles, and even environmental goals. These dynamics call for a periodic update of visions on a product group's position, future and milestones.

#### *Mid-term and long-term strategies*

A hyena's mid-term strategy could focus on knowledge and innovation diffusion amongst all parties. The playing style here for companies ranges from strictly individual to collective action and all sorts of in-betweens.

In long-term strategies however, co-operation seems inevitable for most hyena actor constellations. With increasing Dutch societal transition policy experience, here Playing with Hyenas advises strongly to couple the societal transition policy infrastructure to the 44 product groups.

#### *Voluntary or forced*

The authors regard strictly voluntary play patterns as too vulnerable to rely on only. They suggest a network to be formed per hyena, in which initially a shared vision on situation, future and stepping stones could develop. Next each actor's natural role should be played for the sake of the future's legitimization of that network:

- a gradual pressure increase on the system should be built up by national and international consumers organizations, and especially governments and NGOs
- regional authorities helping to create room for experiments
- researchers and technical scientists finding technical alternatives
- companies transferring all these impulses into working business propositions and through this, stimulating others to go on
- scientists separating truths from lies, generating new inputs and concepts, changing goal positions even occasionally
- media usually taking the following position, serving one of the above actors depending on their specialization and colour
- education bringing developments and motivation to the new generation.

Finally, despite this group-working atmosphere, the authors warn against neglecting the necessary room for individuals during change processes, for disruptive innovations coming from outsiders and for entrepreneurial behaviour within all actors groups.

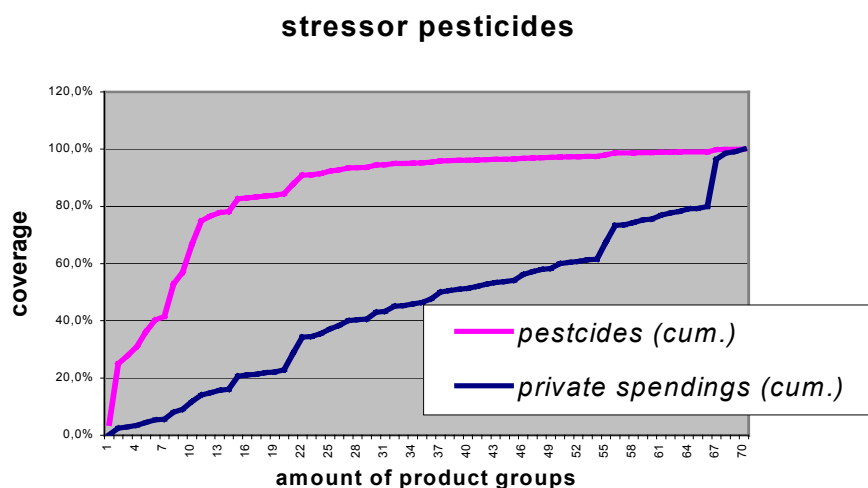
The report adds plenty of case story boxes to accompany the above concepts with case histories and future potentials.



## 2. Key graphs

### *Selecting product groups*

Taking environmental impact per euro product value as an indicator, all seventy product groups of the Dutch private consumption have been ranked for each of ten environmental stressors. Here's the pesticides graph as an example. Left on the X-axis stand product groups



where each product euro delivers high levels of pesticides. Cleansing agents is the front runner here (!) with potatoes/veggies/fruit on second, coffee/tea/cocoa on third, and indoor plants on fourth position. Two cumulative curves have been plotted. Following the pesticides-curve, roughly three points of abrupt gradient change can be marked (after two, after eleven and after 22 product groups). For pesticides the first eleven product groups are labeled a hyena. These eleven pesticide hyenas cover only 10% of the expenditures but a striking 80% in pesticides pressure.

What has been done for pesticides can be done for nine other stressors (see next page). The ten show similar patterns. Most graphs start with a bunch of fast risers, product groups scoring high in pressure per euro. Depending on the stressor, these hyenas contain three to twenty-seven product groups, with eleven on average and 44 in total.

The worst for climate appears to be Room heating, followed by Energy for personal care, Food energy, and Electricity for leisure.

The worst for acidification is Fish (!), followed by Dairy products, Electricity house, and Meat & meat products.

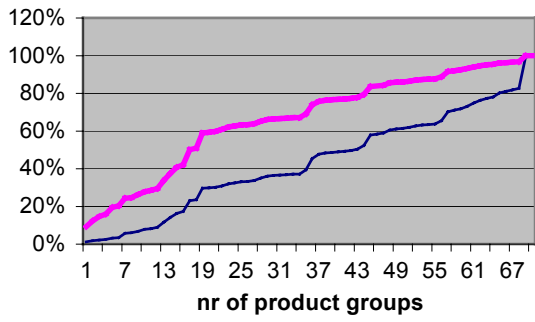
The worst for eutrophication is Coffee/tea/cocoa, followed by Dairy products, Others personal care, Meat & meat products.

The worst for fresh water use is Electricity house, followed by Coffee/tea/cocoa, Electricity leisure, and Jam & sweet products.

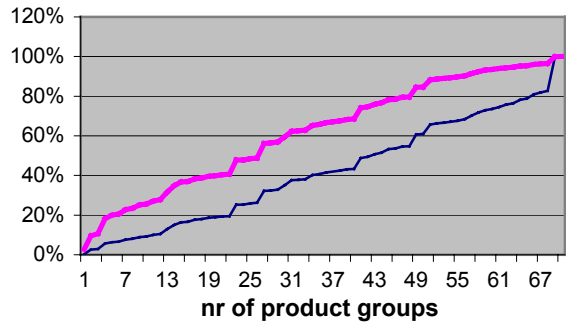
And so on.

In general, Hyenas are product groups combining 1) high impact per product value, 2) significant amounts of impact, and 3) only small parts of the expenditures.

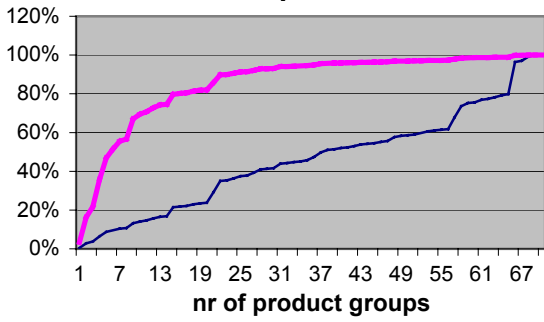
**Climate**



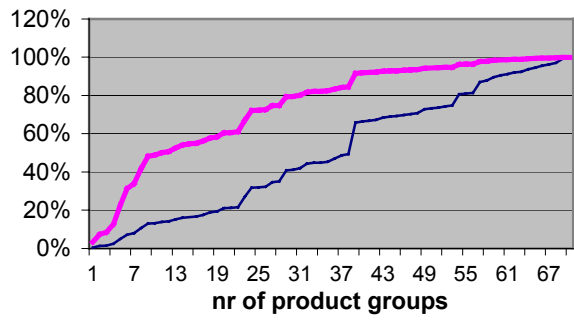
**Acidification**



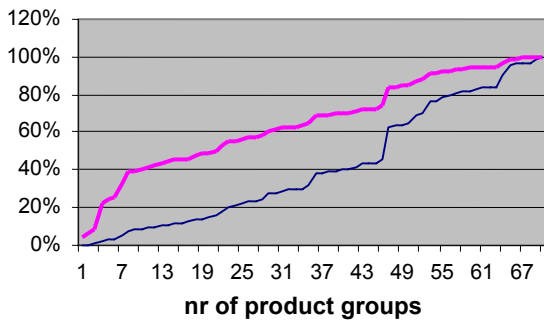
**Eutrophication**



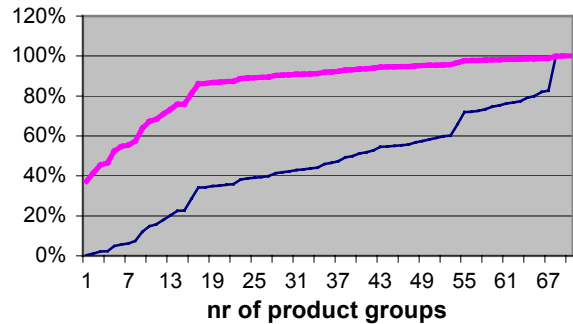
**Land use**



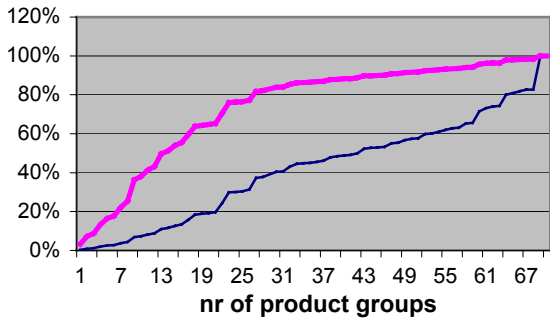
**Wood extraction**



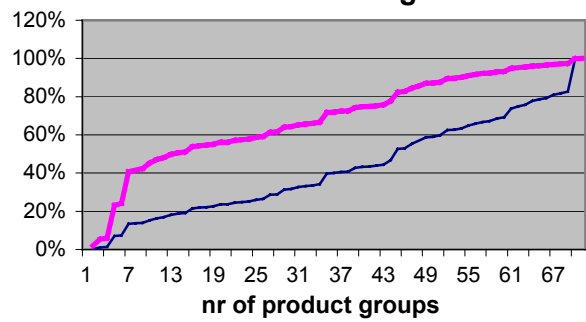
**Fish extraction**



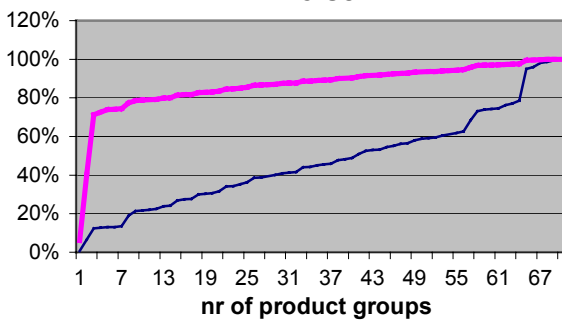
**Water extraction**



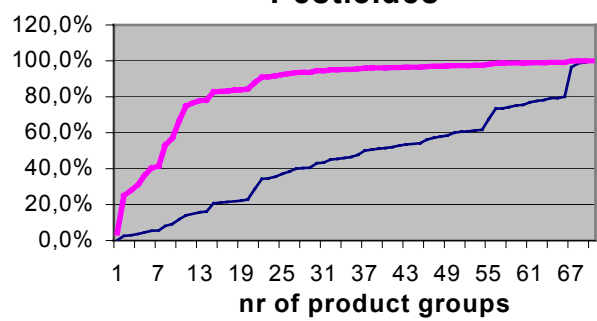
**Summer smog**



**Noise**



**Pesticides**



### 3. Key tables

#### Estimating macro-economic growth

Macro-economic growth is highly influential for the consumption's environmental impact. High growth asks for substantially larger ratio reductions. As an example a climate table with estimated CO<sub>2</sub>-emissions in 2040, based on two recent macro-economic growth scenarios and on a potential shift between consumption domains (domain: meso-level expenditure cluster).

<b>CO<sub>2</sub>eq emissions against two macro growth scenarios and two domain shift scenarios (CO<sub>2</sub>-level 2000 = 100)</b>	<i>Scenario Social values dominant (moderate growth)</i>	<i>Scenario Individual values dominant (high growth)</i>
<i>Consumption domains as in 2000</i>	<b>150 à 220</b>	<b>250 à 340</b>
<i>Consumption domains moderately shifted</i>	<b>148 à 216</b>	<b>246 à 335</b>

#### Reduction targets 2040

Against the bandwidth of macro-economic growth and with national and international policy targets in mind, the table below gives reduction targets for impact per product value for each of the ten environmental stressors.

*Table: average reduction targets for environmental impact per euro product value in 2040*

	<b>Moderate consumption growth</b>	<b>High consumption growth</b>
<i>Climate</i> - greenhouse gas emission	<b>factor 5 to 7</b>	<b>factor 8 to 10</b>
<i>Biodiversity and resources</i> - land use - acidification - eutrophication - wood extraction - fish extraction - fresh water extraction	<b>factor 3 to 4,5</b>	<b>factor 5 to 7</b>
<i>Other resource use</i>	<b>100% sustainable sources</b>	<b>100% sustainable sources</b>
<i>Health</i> - summer smog - noise - pesticides	<b>factor 3 – 4,5</b>	<b>factor 5 – 7</b>
<i>Other dangerous substances</i>	<b>depending on risk category</b>	<b>depending on risk category</b>

#### Hyena distribution over consumption domains

The Dutch consumption has been split up into seven consumption domains, seven clusters of logically connected product groups. The table below gives the hyena distribution over these domains. All domains appear to house hyenas, but nearly the entire Food domain is in a remarkably bad position.

The numbers in the table columns refer to the rank position a hyena takes for that stressor (= X-axis position in the ten graphs).



	<i>greenhouse gasses</i>	<i>acidification</i>	<i>eutrophication</i>	<i>land Use</i>	<i>wood extraction</i>	<i>fish extraction</i>	<i>fresh water Use</i>	<i>summer smog</i>	<i>road noise</i>	<i>pesticides</i>
<b>Domain clothing</b>										
clothing	-	-	-	-	-	17	23	-	-	-
footwear	-	-	-	-	-	8	-	-	-	-
accessoires	-	-	-	-	-	11	26	-	-	-
travel	20	-	-	-	-	-	-	8	-	-
washing drying ironing	12	-	-	-	-	-	12	-	-	-
others	-	-	-	-	-	-	24	-	-	-
<b>Domain food</b>										
bakery products	14	-	9	5	-	5	9	-	-	8
fruit & vegetables	15	-	5	6	-	14	13	-	-	2
jam & sweet products	9	-	7	2	-	3	4	-	-	6
coffee, tea, cocoa	11	-	1	1	-	7	2	-	-	3
non-alcoholic beverages	-	-	-	7	-	2	11	-	-	-
alcoholic beverages	-	-	-	-	-	-	-	-	-	-
table oil, frying fat & margarine	8	-	8	3	-	4	6	-	-	7
meat & meat products	13	4	4	8	-	10	18	-	-	10
fish & fish products	6	1	-	-	-	1	25	-	-	-
dairy products & eggs	7	2	2	9	-	12	17	-	-	11
others	10	-	6	4	-	6	7	-	-	9
catering	-	-	-	-	-	9	22	-	-	-
food processors & utensils	-	-	-	-	-	-	-	-	-	-
energy food (gas & electr.)	5	5	-	-	-	-	8	2	1	-