

Measures against endocrine disrupting chemicals

The example of Denmark, Sweden and France



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Introduction

The importance of taking action against endocrine disrupting chemicals

The harmful effects of endocrine disrupting chemicals have been known for years. Now that political leaders are about to take crucial decisions on their regulation, WECF, PAN Europe and Wemos want to create awareness and disseminate knowledge about the risks and regulatory possibilities. We want the Dutch government to implement protective measures both here and in the European context. The measures taken by France, Denmark and Sweden, which we have analysed in this report, are examples of effective policy.

Endocrine disrupting chemicals (EDCs) are foreign chemicals that act as natural hormones because their chemical structure partly resembles those molecules. As a result, they cause changes in the hormonal balance. Endocrine disrupting chemicals are associated with an increase in hormone-related cancers, and with a decrease in sperm quality in Europe. These days, more than a quarter of the men in Northern Europe suffer from fertility problems, and cases of breast cancer in the Netherlands have increased by 30 percent since 1989. Other hormone-related disorders, such as autism and ADHD, have also been linked to these chemicals.

According to the World Health Organization, one in five cancer cases are attributable to environmental factors, including exposure to harmful chemicals. In 2013 eighty-nine leading scientists from around the world signed the Berlaymont Declaration¹ on endocrine disruptors. This declaration challenges the notion that the increase in hormone-related diseases in the European Union can only be explained by genes or by lifestyle. The scientists stress the importance of public health policies and protection against chemicals.

Recent research by Utrecht University has shown that Europe's health costs attributable to EDC's are between 46 billion euros and 288 billion euros.² It costs Dutch society 5.8 billion euros each year to deal with the effects of exposure to endocrine disrupting chemicals. Scientists claim that these chemicals pose a risk to unborn babies and young children. There is even a chance that they could suffer permanent damage during their development.

Measures have already been taken at national level in various European countries. Countries such as Denmark, France and Sweden, as well as Austria and Belgium, have taken action to protect their populations. In Denmark, for example, the government issues a folder to pregnant women that provides information about endocrine disrupting chemicals. Furthermore, Danish toys for children under three years of age contain no phthalates. Sweden sued the European Union because it delayed the publication of criteria needed for future legislation. The Netherlands has carried out a great deal of work on Bisphenol A (BPA). For the Netherlands, increased awareness of the effects of endocrine disrupting chemicals and

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http://www.brunel.ac.uk/__data/assets/pdf_file/0005/300200/The_Berlaymont_Declaration_on_Endocrine_Disrupters.pdf

² http://www.uu.nl/sites/default/files/rijk_et_al_2016_-_report_iras_-_health_cost_associated_with_edcs_3.pdf

action to restrict exposure to BPA represent the first steps in the right direction. This report gives examples of national measures and shows that national measures are possible and necessary in addition to European measures.

Current state of affairs: Europe

The deadline for setting criteria for endocrine disrupting properties was December 2013. This was determined in the 2012 Biocidal Products Regulation, which indicates that biocidal products may pose a risk to the health of humans, animals and the environment. When no criteria were put forward, Sweden filed a lawsuit against the European Commission, which it has now won: **In December 2015, the European Court of Justice ruled that the European Commission is in breach of the law.**³

In 2013, the Commission shifted internal responsibility for EDC criteria from the Environment Directorate to the Directorate for Health and Consumers. It was subsequently decided that a large-scale impact assessment should be conducted before any further steps were taken. This study examines the ecological, economic and societal impacts of various policy options. One effect of this impact assessment was to further postpone the new legislation.

The European Council supported Sweden's lawsuit, as did the European Parliament and the governments of Denmark, France and the Netherlands. It took the view that the Commission had neglected to establish scientific criteria for endocrine disrupting properties (of biocidal products). It failed to respect the deadline for this.

The European Commission stated that the impact studies were being continued, and that the criteria would have to wait until the summer of 2016. However, the impact studies are not a requisite component of the process of establishing criteria. The European Commission must establish criteria to protect human health and the environment against the threat of endocrine disrupting chemicals without, at the same time, weighing up other factors such as the associated economic effects.⁴

Many members of the European Parliament were very critical of the continued delay. They demanded that the Commission take immediate action and apply the criteria that were established in 2013⁵. Criteria have been published by the European Commission on the 15th of June 2016. According to the Endocrine Society, the criteria fail to protect human health. The European Parliament and member states have to agree on the proposal of the Commission, which was perceived weaker than interim rules and not enough to protect society. It is of continuing importance that EU Member States work actively for national and European measures.

³ <http://www.wemos.nl/news/?v=6&lid=1&id=420#.Vx3guPI97IU>

⁴ http://www.wemos.nl/news/?v=2&lid=1&id=427&cid=11#.Vx3hO_I97IU

⁵ http://www.environmentalhealthnews.org/ehs/news/2013/pdf-links/2013.06.11%20EDC_Recommendation%20Commission%20Draft.pdf

1. Danish measures to combat endocrine disrupting chemicals

1.1. Introduction

In the 1990s, many young men in Denmark were diagnosed with infertility and testicular cancer⁶. Scientists associated this trend with exposure to endocrine disrupting chemicals. This finding sent a shockwave through Danish society. The government subsequently decided to take measures to regulate the use of endocrine disrupting chemicals. In 2002, the Danish parliament approved a report which formed the basis for tackling endocrine disrupting chemicals. The development of test methods and regulations, as well as knowledge acquisition, is central⁷ to the Danish strategy for protecting its population against endocrine disrupting chemicals.

1.2. Knowledge centre

In 2008, a knowledge centre for endocrine disrupting chemicals was founded. This Centre on Endocrine Disruptors is an interdisciplinary scientific network whose purpose is to gather and share knowledge about endocrine disrupting chemicals. Several Danish universities are affiliated with the knowledge centre. The centre plans and coordinates research, provides scientific advice to the government, and organizes meetings.⁸ The steering committee includes representatives from the Environmental Protection Agency (EPA), the National Board of Health, the Danish Veterinary and Food Administration, and the Danish Working Environment Authority.

1.3. Phthalates

Phthalates are used as plasticisers in plastic, as coatings for pharmaceutical products such as pills, and as fixing agents in perfumes. The Danish government argues that it is important to regulate the use of phthalates because these chemicals have disrupting effects on the endocrine system and have been linked to fertility problems.

In 1999, Denmark imposed a ban on all phthalates in toys and personal care products for children under three years of age. Since 2007, the use of six specific phthalates in these products has been banned in the European Union.

In 2012, the Danish Environment Minister Ida Auken announced her intention to work towards a more broad-based national ban on the use of phthalates. Due to their endocrine disrupting properties, she also planned to ban four specific phthalates (DEHP, DBP, DIBP and BBP) from other products. However, the European Commission and the European Court of Justice blocked this general ban on phthalates. Denmark responded by opting to put these four phthalates on the candidate list of REACH (Registration, Evaluation and Authorization of Chemicals), due to their endocrine disrupting properties. These phthalates were already on

⁶ Anim.Reprod.,v.9,n.4,p.760-771,Oct./Dec.2012

⁷ <http://eng.mst.dk/topics/chemicals/endocrine-disruptors/endocrine-disruptors-and-combination-effects/>

⁸ <http://eng.mst.dk/topics/chemicals/endocrine-disruptors/endocrine-disruptors-and-combination-effects/>

REACH's candidate list, due to their potential reproductive toxicity effect. This means that, in addition to fertility problems, they can cause damage to the unborn child.

1.3.1. Taxation of phthalates

In cooperation with the Ministry of Environment, the Ministry of Finance has prepared a tax on phthalates in polyvinyl chloride (PVC), with the aim of reducing and eliminating the use of phthalates in soft plastics. Under the Danish PVC Tax Act (Law no. 253, of 19 March 2007), goods that contain phthalates are taxed based on the weight of phthalates they contain.⁹ The tax only applies to goods that are either produced domestically or imported into Denmark. If such goods are exported, any tax deducted will be refunded.¹⁰ This tax stimulated the use of alternatives. Between 1998 and 2011, the use of 17 different phthalates halved.

1.3.2. Research and development

The Danish government funds research to, and the development of, alternatives to phthalates and other harmful chemicals. In the context of the action plan entitled 'Towards a life without toxins', the government set aside 25 million Danish krone (3.3 million euros) for the development of alternatives to chemicals of concern and for the monitoring of harmful chemicals in consumer products.

1.3.3. Green public procurement

At the request of the Danish Environmental Protection Agency (EPA), local and provincial authorities are giving priority to phthalate-free alternatives in all public procurements. The government encourages manufacturers to develop alternatives. It also urges consumers to use phthalate-free products, as a way of reducing demand for phthalates. The Ministry of Environment and Food of Denmark drafted a number of environmental directives between 1997 and 1999. These guidelines will help public purchasers to integrate environmental considerations into public procurement.¹¹ The Ministry also drafted the Partnership for Public Green Purchasing.¹²

1.3.4. Medical devices

The manufacturers of medical devices such as infusion lines use phthalates (particularly DEHP) to make these lines soft and pliable. European legislation requires them to indicate which devices contain CMR chemicals. CMR chemicals are carcinogenic (cancer-causing), mutagenic (induce changes in hereditary characteristics) or reprotoxic (harmful to reproduction or offspring).

National governments cannot prohibit the use of medical devices that meet European requirements. In the light of this European legislation, Denmark abandoned the prohibition of medical devices containing harmful phthalates. Instead, the Danish government chose to adopt an information-providing and facilitating role:¹³

⁹ <http://www2.mst.dk/Udgiv/publications/2013/06/978-87-93026-22-3.pdf>

¹⁰ The tax rate is 2 Danish Kroner per kilogram of PVC on all PVC products and 7 Danish Kroner per kilogram of phthalate.

¹¹ Alvaro de Prado Trigo (2013) DYNAMIX policy mix evaluation, Reducing PVC and phthalates use in Denmark, p. 17.

¹² <http://www2.mst.dk/Udgiv/publikationer/2014/10/978-87-93283-05-3.pdf>

¹³ <http://www2.mst.dk/Udgiv/publications/2013/06/978-87-93026-22-3.pdf>

The EPA drew up a list of safer alternatives to often used phthalates in medical devices¹⁴, to enable buyers to make informed decisions.

The Danish Ministry of Health set up a working group to cut the use of phthalates in medical devices. The working group, which is led by the Danish Health and Medicines Authority (DHMA), consists of representatives of the medical profession, patient and consumer groups, medical device manufacturers and the government.¹⁵

The DHMA published a manual for provincial and local authority procurement departments tasked with purchasing medical devices for healthcare facilities. The objective was to ensure that these departments purchased fewer medical devices containing classified phthalates. Provincial and local authorities use phthalate-free alternatives as a selection criterion in public procurement. They have agreed to share details of each other's experiences and best practices in this area.

The DHMA has agreed with the largest Danish suppliers of medical devices that they will label these products to show that they contain classified phthalates. In addition, the suppliers will publish this information on websites, data sheets and in other publications.¹⁶

1.3.5. Result

In 2015, an evaluation of all these measures highlighted positive developments. As part of their public procurement process, provincial and local authorities are imposing an increasing number of specific requirements on the use of classified phthalates in medical devices. Some provincial and municipal purchasing departments even incorporate phthalates as a suitability requirement (grounds for exclusion).

The suppliers of medical devices have noticed a growing demand for phthalate-free products. They stated that the increased awareness of classified phthalates in public procurement has facilitated the development and use of phthalate-free medical devices. Their websites and product descriptions now provide more information about the use of phthalates. In addition, manufacturers are increasingly marketing alternative items of medical equipment that are free of classified phthalates.¹⁷

1.4. Parabens

Parabens are widely used as preservatives in cosmetics and personal care products. A study by the Danish National Food Institute found that parabens have endocrine disrupting effects.¹⁸ Laboratory animal studies have linked parabens to reproductive disorders, such as infertility.

In 2011, Denmark became the first country in the world to ban propylparaben and butylparaben in all personal care products for children up to three years of age.¹⁹The

¹⁴ <http://www2.mst.dk/Udgiv/publications/2014/03/978-87-93178-27-4.pdf>

¹⁵ <http://www2.mst.dk/Udgiv/publications/2013/06/978-87-93026-22-3.pdf>

¹⁶ <http://sundhedsstyrelsen.dk/~media/FFE15DA45F104787971CCB7AA02C540F.ashx>

¹⁷ <http://sundhedsstyrelsen.dk/en/news/2015/~media/ABBB1032ABE942EAAE1041284401FB16.ashx>

¹⁸ http://chemsec.org/images/stories/2011/chemsec/In_focus_Parabens.pdf

¹⁹ <http://eng.mst.dk/media/mst/Attachments/Engelskparabenbekendtgelse.pdf>

European Union followed suit a few years later, when it banned the use of these two parabens in nappy creams.²⁰

1.5. Bisphenol A (BPA)

BPA is one of the most widely produced industrial chemicals in the world. It is used in the coating on the interior surface of tins of food, in kitchen appliances and in many other products that incorporate hard plastic. There have been concerns about BPA for quite some time, as there are suggestions that it can disrupt the endocrine system. In March 2010, Denmark introduced a ban on the use of BPA in food contact materials for children under three years of age²¹. This was prompted by concerns about BPA's potential effects on brain development in children. Since 2011, the use of BPA in baby feeding bottles has been banned in the European Union.²²

1.6. Pesticides

Since 1986, the measures used by the Danish government to regulate pesticides have been stricter than those that are officially approved at European level.²³ The main reason for this is that the country's drinking water is drawn from subterranean sources, and Denmark wants to keep this clean at all costs. At European level, Denmark votes against the authorization of pesticides that pollute groundwater. In cooperation with farmers and their interest groups, the Danish government has instigated a range of measures aimed at protecting consumers and farm workers from exposure to pesticides through food and drinking water. Farmers are given agricultural advice, a tax on pesticides was introduced, and Denmark has established pesticide-free zones in areas bordering rivers and lakes.

Denmark has invested a great deal of effort in the development of test methods, which have been approved at OECD level. The country is also one of the few European Union member states to favour the use of new scientific knowledge as a basis for such test methods. Denmark took the lead in developing tests such as the Fish Sexual Development Test.

1.6.1. Result

From 1998 to 2003, fewer pesticides were found in Danish groundwater sources. In 2003, fruit from Denmark was found to contain much lower levels of pesticide residues than comparable imported fruit: 45 percent versus 79 percent. Of all the vegetables produced in Denmark, only seven percent contain residues, compared to 42 percent in equivalent imported vegetables.²⁴ Unfortunately, since 2003, the use of pesticides has increased again, thus negating the declining rates. Denmark has responded by increasing taxes on those products that contain the highest levels of pesticides. It remains to be seen whether or not this tax measure will prove to be effective.

²⁰ http://europa.eu/rapid/press-release_IP-14-1051_en.htm

²¹ <http://www2.mst.dk/Udgiv/publications/2014/03/978-87-93178-18-2.pdf>

²² http://ec.europa.eu/dgs/health_consumer/dyna/consumervoice/create_cv.cfm?cv_id=716

²³ Nielsen, H. (2005) Danish Pesticide Use Reduction Programme, The Danish Ecological Council.

²⁴ Nielsen, H. (2005) Danish Pesticide Use Reduction Programme, The Danish Ecological Council. En: http://ec.europa.eu/environment/enveco/taxation/pdf/ch17_pesticides.pdf

1.7. Information to pregnant women

In 2006, the Danish government launched an information campaign targeting pregnant women, to inform them about endocrine disruptors and other harmful chemicals. Through intermediaries such as midwives, GPs, hospitals, and maternity assistants, the government issued clear, practical advice about how pregnant women can avoid harmful chemicals as best as possible.²⁵

In 2011, Denmark launched another public campaign, prompted by a study of pregnant women and exposure to endocrine disrupting chemicals in everyday personal care products, food and domestic chemicals. The campaign included an information day in a hospital, television appearances by specialists, and an information flyer.

In April 2015, the government launched a campaign in which GPs advised pregnant women about endocrine disrupting chemicals. In Denmark, pregnant women usually visit their GP first, after which the GP refers them to a midwife. Social media and other agencies provide advice to women who are planning a pregnancy.

The most important advice for pregnant women with regard to endocrine disrupting chemicals is:²⁶

- Select products that have an eco-label and that are, preferably, free of perfume.
- Vacuum the house on a weekly basis, and air it at least twice a day.
- Have as little contact as possible with chemicals such as paint, aerosols and hair dye.
- Introduce daily variations into your diet.
- Only use medications and dietary supplements in consultation with a doctor. This includes non-prescription medication, alternative medicines, or herbal medicines.

1.8. Interaction between regulators, science and business

The Danish approach to endocrine disrupting chemicals is characterized by interaction and cooperation between NGOs, scientists, industry, trade associations and government. The Danish EPA actively supports efforts to establish a dialogue between industry, scientists and policymakers on the one hand and the ministries on the other. Here are some examples:

Kemi i Kredsloeb: an EPA-funded partnership tasked with supporting companies in their efforts to replace harmful chemicals in their products. Kemi i Kredsloeb's total budget for 2015 to 2018 amounts to DKK 20 million²⁷ (EUR 2.6 million).

Knowledge centre for endocrine disrupting chemicals: the aforementioned interdisciplinary scientific and political network. The EPA monitors the centre's activities. In addition to the EPA, the board includes representatives from the National Board of Health, the Danish Veterinary and Food Administration, and the Danish Working Environment Authority.

²⁵ Nørgaard Andersen, D., Møller, L., Buchardt Boyd, H. (2012) Exposure of pregnant consumers to suspected endocrine disruptors. En: <http://eng.mst.dk/topics/chemicals/endocrine-disruptors/campaigns-and-folders-on-endocrine-disruptors/>

²⁶ <http://mst.dk/borger/kemikalier-i-hverdagen/kampagne-gravid-kend-kemien/>

²⁷ http://eng.kemiikredsloeb.com/wp-content/uploads/sites/14/2015/09/KemiIKredsl%C3%B8b_EN.pdf

The Medical Devices Working Group (arbejdsgruppen OM Medicinsk udstyr), founded by the Danish Health and Medicines Authority, the Consumers' Association, trade associations dealing in medical devices, industry, provincial authorities, local authorities, and the EPA.

1.9. Biomonitoring

Biomonitoring can be used to estimate the extent to which the population is exposed to harmful chemicals, and to assess their effects. Several biomonitoring projects have taken place in Denmark. One of these is the Aarhus Birth Cohort Biobank. This project, which started in 2008, examines the development of the foetal hormonal system in relation to exposure to harmful chemicals.²⁸ To date, 11,500 families have been included in the study. The project is funded by the Danish Council for Independent Research, the Danish Council for Strategic Research, and a number of private individuals.²⁹

²⁸ <http://norden.diva-portal.org/smash/get/diva2:853435/FULLTEXT01.pdf>

²⁹ <http://norden.diva-portal.org/smash/get/diva2:853435/FULLTEXT01.pdf>

2. Swedish measures to combat endocrine disrupting chemicals

Sweden has a long tradition of phasing out or reducing the use of hazardous chemicals at national level. The main policy instruments used by Sweden in this connection are regulatory frameworks, monitoring and enforcement of the rules, the provision of information³⁰, and a dialogue with civil society.

Within the European Union, Sweden is actively involved in reducing the risks associated with the use of hazardous chemicals. Sweden sees the European Union as the most important arena in which to achieve objectives in this area. However, it is also a country that draws up and implements national action plans, such as the Action plan for a toxic-free everyday environment 2015-2020. This plan has contributed to the European Union's Seventh Environment Action Programme, which includes the objective of a non-toxic environment in the European Union.

Sweden has also been actively involved in the debate on criteria for endocrine disrupting chemicals in the European Union. The European Commission was tasked with putting forward these criteria by the end of 2013, but it failed to do so. At the end of 2014, Sweden summoned the Commission to appear before the European Court of Justice. Both the European Parliament and the European Council rallied behind Sweden's lawsuit. In December 2015, the judge ruled in favour of Sweden.

2.1. Non-toxic environment

In December 2010, at the instigation of the Swedish government, the Swedish Chemicals Agency (KEMI) drew up an initial action plan for the implementation of a non-toxic environment in the period from 2011 to 2014. KEMI is part of the Ministry of the Environment and Energy. A non-toxic environment is one of the sixteen environmental quality objectives set by the Swedish government.³¹ The action plan consisted of measures which mainly focused on adults' reproductive health and on children's health, by protecting them from exposure to hazardous chemicals. Local authorities, provincial authorities, industry, the scientific community, as well as environmental and consumer organizations were involved in the implementation of this action plan. Based on its experience with the initial action plan, Sweden has drawn up a new plan for the period from 2015 to 2020³². This plan, 'Action plan for a toxic-free everyday environment 2015-2020', consists of the following pillars:

³⁰ PRIO is a web-based tool designed to assist companies with risk reduction, sustainable procurement, and product development. KEMI launched PRIO in 2004, to improve knowledge about chemicals and to obtain information about the associated environmental and health hazards. The database contains details of approximately 4400 substances whose properties comply with selection criteria drawn up in accordance with the national environmental quality objective and REACH.

³¹ <http://www.kemi.se/en/Content/A-Non-toxic-environment/The-objective-and-interim-targets/>

³² <http://www.kemi.se/en/global/rapporter/2014/rapport-5-14-handlingsplan-giffri-vardag-2015-2020.pdf>

2.2. Measures in the area of endocrine disrupting chemicals

The Swedish government is very concerned about the effects of endocrine disrupting chemicals on fertility and on the development of children (including unborn children). Accordingly, measures in the area of endocrine disrupting chemicals make up an integral part of the non-toxic environment objective. Sweden is developing the endocrine disrupting chemical action plan in consultation with the business community, civil society and the scientific community.³³

2.3. Measures in the area of highly fluorinated chemicals

Highly fluorinated chemicals are particularly persistent. Even after a ban has been introduced, they will still be present in our environment for many years to come. These chemicals are associated with disruption of the endocrine and immune systems.³⁴ The Swedish government wants to involve scientists and the business community in a concerted approach to successfully deal with these chemicals. In mid-2016, KEMI is expected to introduce a set of measures involving government agencies, scientists and the business community. In addition to measures at national level, the Swedish government will also call for European action to eliminate these harmful chemicals.

2.4. Adding to school communities' knowledge of harmful chemicals

The Swedish government considers it important that future generations be made fully aware of prudent consumption patterns that are free of harmful chemicals. The Keep Sweden Tidy Foundation is cooperating with the government to this end. The foundation is an NGO with experience in the field of education about the natural world and about the environment. This organization also has a large school network (including nursery schools). Schools can be awarded the Green Flag certificate for incorporating environmental topics into their educational activities. It is hoped that this will eventually contribute to sustainable consumption behaviour.

2.5. Surveillance

One essential instrument for the environmental quality objectives being pursued by Sweden is an effective and competent surveillance organization. KEMI provides guidance in the form of seminars and written information (fact sheets and guidelines). It also supports inspectors from local and provincial authorities. The majority of inspections involve chemical products. In recent years, KEMI's supervisory activities have increasingly focused on pesticides and chemicals in products (including imported products).³⁵ The Swedish government has expressed the view that these inspections generate a knock-on effect. Companies that are

³³ <http://www.kemi.se/en/global/rapporter/2014/rapport-5-14-handlingsplan-giftfri-varldag-2015-2020.pdf>

³⁴ https://www.niehs.nih.gov/health/materials/perflourinated_chemicals_508.pdf

³⁵ http://www.un.org/esa/dsd/dsd_aofw_ni/ni_pdfs/NationalReports/sweden/Chemicals.pdf

aware of audits carried out at other companies will be more likely to adapt their behaviour and to eliminate harmful chemicals from their production processes, as a preventive measure.

2.6. Green public procurement

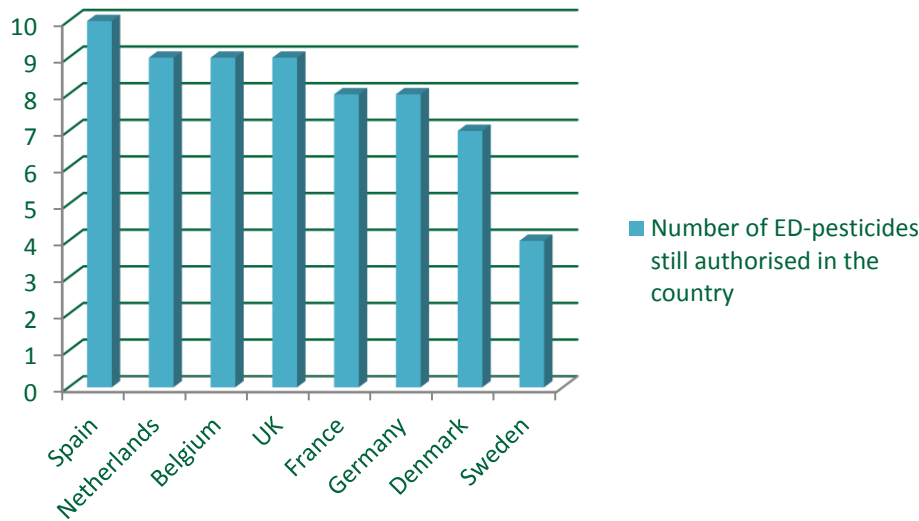
Local and provincial authorities have a total annual budget of about SEK 600 billion (65.5 billion euros) for the purchase of items and services (public funds). Together, therefore, the government, local authorities and provincial authorities are in a sufficiently powerful position to demand that the products they purchase must be free of harmful chemicals.³⁶The Swedish National Agency for Public Procurement supports various parties with sustainable procurement policy. Some of the criteria used by that organization relate to avoiding products that contain BPA and phthalates. In a parallel initiative, KEMI and SALAR, the Swedish Association of Local Authorities and Regions are working to build a network of local authorities, to combine their efforts to achieve an environment free of harmful chemicals. The government offers guidance, expertise, and lists of alternatives. Stockholm is at the forefront in this area. In May 2014, the city introduced a system of green bonds.³⁷

2.7. Pesticides

Sweden is leading the field in terms of banning well-known endocrine disrupting pesticides. This is shown in the graph below, which is based on a random sample. The graph shows how many of the ten recognized endocrine disrupting pesticides are permitted, at national level, in each country. Rather than using special criteria, Sweden assesses the risks using a completely different scientific approach. This applies not only to endocrine disrupting pesticides, but to all chemicals. To a far greater extent than other countries, Sweden actively seeks out any published details on chemicals' harmful effects. Also, it makes far greater efforts than any other country to try to identify the effects that specific chemicals have on the human body. Sweden bases its approach on a far greater number of sources than industry alone. Industry often tweaks the methods and calculations used, which makes it seem as if the safe limit has not been exceeded. As industry's methods are generally based on assumptions and speculation, Sweden tends to give it less credence than is the case in other countries. For the purposes of assessment, Sweden always adopts the most critical position as its guiding principle. The country also rejects industry's claims that any adverse effects are 'recoverable' or 'indirect' and, therefore, irrelevant.

³⁶ Report 5/14 (2014) Action plan on Toxic-free environment 2015-2020, KEMI, p. 22 and <http://www.kemi.se/en/about-us/our-work/action-plan-for-a-toxic-free-everyday-environment>.

³⁷ <http://www.sll.se/om-landstinget/Information-in-English1/Green-bond/>.



Source: <http://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/public/?event=homepage&language=EN>

2.8. Bisphenol A (BPA)

In July 2010, following the example set by Denmark, the Swedish government decided to ban the use of BPA in feeding bottles for infant formula. The following year, a ban on the use of BPA in baby feeding bottles came into force throughout the European Union. In April 2012, Sweden also introduced a ban on the use of BPA in food packaging materials for children up to three years of age, as a preventive measure and in line with the Action plan for a toxic-free everyday environment.

A general national ban on the use of BPA in food packaging materials would not be legally possible within the framework of European regulations. There was, however, a lack of detailed European legislation with regard to the use of BPA in paints and coatings, which allowed sufficient scope for national legislation in this area.³⁸

2.8.1. BPA in drinking water pipes

At the instigation of the Swedish government, KEMI, the National Board of Housing, Building and Planning, and the National Food Agency investigated BPA emissions in renovated tap water pipes. Until 2011, Sweden used two-component epoxy for this purpose, a material that can contain and release BPA. As a result, hot water in particular will contain higher concentrations of BPA. Parents often prepare infant formula using lukewarm tap water, even though the National Food Agency advises against this. KEMI, the National Board of Housing, Building and Planning and the National Food Agency have therefore announced a national ban on the use of two-component epoxy in drinking water pipes.³⁹

³⁸ Christensen, F.M., Clausen, A.J., Brinch, A., Mikkelsen, S.J. (2014) Background for national legislation on bisphenol A in EU and EFTA countries Environmental, The Danish Environmental Protection Agency, p. 32.

³⁹ Report 7/13 (2013) Emission of bisphenol A (BPA) from restored drinking water pipes, KEMI.

2.9. Phthalates strategy

In June 2013, the Swedish government commissioned KEMI to push ahead with the phasing out of endocrine disrupting phthalates. The phthalates strategy involves the following measures:

2.9.1. Limiting the use of hazardous phthalates in building materials

The construction industry makes extensive use of PVC that contains phthalates, even though scientific research has linked the use of PVC flooring indoors to phthalate levels in house dust. KEMI has therefore scrutinized European regulations pertaining to construction goods. However, these regulations impose no demands on product characteristics. They only describe the way in which construction products are assessed and defined when they are marketed. Product requirements are generally determined at national level. In 2012, for example, Belgium introduced emission limit values for chemical products in the construction industry. KEMI has asked the Swedish government to order competent authorities to set national limit values for the most hazardous phthalates used in construction products.⁴⁰

2.9.2. Green public procurement

The public sector uses a green procurement policy to encourage innovation and research into alternatives to harmful phthalates. This is particularly relevant in the educational and healthcare sectors, where the government is the primary purchasing party. The Swedish Competition Authority has established criteria for toys, hobby materials, kitchen utensils, furniture and textiles for nursery schools, and it plans to do the same for the healthcare sector.^{41,42} Here, too, Stockholm is a leader. It has drawn up its own list of banned phthalates.⁴³

2.9.3. Surveillance

The Swedish government wants more checks on phthalates in products on the Swedish market. At local level, KEMI can offer surveillance officers support in carrying out their checks. In addition, Sweden is calling for further cooperation between various authorities at European level. Finally, KEMI maintains that the potential sanctions available for use against those who violate the regulations are often limited and inconclusive. A review of these sanctions would greatly enhance their impact.⁴⁴

2.9.4. Better information on phthalates in products (including imported products)

The Swedish Government notes that there is still a great deal of ignorance among companies involved in importing articles that contain chemicals. In partnership with industry, the Danish EPA has drawn up a set of guidelines in which it advises companies on how to replace hazardous phthalates and on the requirements they must impose on their suppliers.

⁴⁰ <http://www.kemi.se/global/rapporter/2014/rapport-7-14-ftalatuppdraget.pdf>

⁴¹ More information: <http://www.upphandlingsmyndigheten.se/omraden/giffri-forskola/>

⁴² Report 4/15 (2015) Phthalates which are toxic for reproduction and endocrine-disrupting – proposals for a phase-out in Sweden, KEMI, p. 80.

⁴³ Stockholm County Council's phase-out list for chemicals hazardous to the environment and human health 2012–2016

⁴⁴ Report 4/15 (2015) Phthalates which are toxic for reproduction and endocrine-disrupting – proposals for a phase-out in Sweden, KEMI, p. 19-20.

KEMI has distributed details of the Danish guidelines to Swedish companies. The guidelines can now also be found on KEMI's website, to provide consumers with information on chemicals that will help them make informed choices. In April 2015, at the instigation of the government, the Consumers' Association launched an information service called *Hallå Consument* (Hello, Consumer), that enables consumers to obtain information by email and telephone.

2.10. Eco-labelling

The official ecolabel of the Nordic countries – the Nordic Ecolabel – was established in 1989 by the Nordic Council of Ministers. Endocrine disruption is one of the criteria used to determine whether or not a given product should be granted the Nordic Ecolabel.

2.11. Economic instruments

The Tax Committee is currently examining the feasibility of using environmental impact as an economic instrument for cutting the use of harmful phthalates. Sweden also wants to use chain liability to ensure that producers are held responsible for the entire lifecycle of a product, to minimize any adverse effects on the environment.⁴⁵

2.12. Information to pregnant women

The Swedish Society for Nature Conservation (*Naturskyddsföreningen*) is the most influential environmental pressure group in Sweden. In cooperation with the provincial council of Stockholm and the national association of midwives, the society has taken the initiative and published an information brochure for pregnant women. The brochure, which currently is in its design phase, provides simple tips on how pregnant women can reduce their exposure to hazardous chemicals in everyday life:

- Avoid hair colouring products and nail polish. Use environmentally friendly cosmetics and personal care products.
- Avoid fatty fish from the Baltic Sea, and some freshwater fish. These contain high levels of mercury, dioxins and PCBs. Some examples are Baltic herring, perch, pike and zander.
- Limit your intake of medications, painkillers and supplements. Consult your doctor or nurse first. This also applies to plant-based products, herbs, and traditional herbal medicines.
- Use cold tap water only for drinking or cooking. Lead is released into hot tap water, which can affect brain development in the unborn child.
- Avoid canned food. This may contain the endocrine disrupting chemical BPA. Instead, opt for fresh produce, food that is packaged in cardboard or glass, or frozen products.
- Heat food in a porcelain bowl or in a stainless steel pan, not in plastic. Heating plastic can cause it to release endocrine disrupting chemicals, which will then contaminate the food.
- Opt for organic food wherever possible, at least as far as fruit and vegetables are concerned. The most heavily sprayed crops include grapes (raisins), peppers, bananas, coffee, potatoes, onions, apples and strawberries. Pesticide residues can have endocrine disrupting effects.

⁴⁵ Report 4/15 (2015) Phthalates which are toxic for reproduction and endocrine-disrupting – proposals for a phase-out in Sweden, KEMI, p. 88.

- Use cleaning agents and perfume-free skin care products bearing the following Ecolabels: “Good Environmental Choice” and “Nordic Ecolabel”. Other products may contain allergens and endocrine disrupting chemicals. If this is inconvenient, then at the very least select products that contain no perfume, propylparaben and butylparaben, and avoid deodorants that contain triclosan.
- Avoid using electronic devices in the bedroom. Hot electronic devices release harmful chemicals such as flame retardants and phthalates. The alternative is to switch off all electronic devices (i.e. do not leave them in stand-by mode).
- Wash new clothes and other textiles before use. These may contain excess chemicals from the production process, such as anti-fungal agents and allergens.
- Avoid direct skin contact with shop receipts. Shop receipts can contain BPA, which is readily released and absorbed through the skin.
- If possible, postpone any visits to the dentist until after your pregnancy. Some dental materials contain BPA. If you should undergo any dental treatment, be sure to rinse your mouth thoroughly afterwards.

2.13. Operation clean nursery schools

In 2013, the Swedish Society for Nature Conservation investigated the extent to which children at nursery schools are exposed to hazardous chemicals. A total of 129 surveys in 41 Swedish local authorities showed that infants at school do indeed come into contact with undesirable chemicals. In response to the results of this investigation, the environmental pressure group developed a simple checklist for a safer environment⁴⁶ in nursery schools. Based on the survey results, the national government launched a nationwide campaign in which more than half of all Swedish nursery schools participated. The high turnout was partly due to the timing; the start of the campaign coincided with the process of defining public procurement contracts for nursery schools.

⁴⁶ Checklist: <http://www.naturskyddsforeningen.se/nyheter/12-punkter-som-giftbantar-forskolan>.

3. French measures to combat endocrine disrupting chemicals

3.1. How did the French national action plan come about?

France has drawn up a national action plan. On 29 January 2010, the French Food Safety Agency (L'Agence Française de Sécurité Sanitaire des Aliments; AFSSA) issued an advisory report on BPA, based on a reference to a study it conducted in October 2009. In its report, the Agency indicates that more research is needed⁴⁷, because a large number of 'red flags' have been raised. However, the nature of those red flags was not clearly explained, and no recommendations were included for the public at large. Nevertheless, this plan does represent a first step towards a French debate on endocrine disrupting chemicals.

In February 2010, the WHO and the United Nations (FAO) called for a reassessment of BPA's toxicity to human health and to the environment. This set an international process in motion. The use of products that had been commercially available for more than fifteen years should be weighed against a re-evaluation of their safety and health. This call underscored the French campaign

3.2. Bisphenol A (BPA)

In June 2010, France took the initial – if rather symbolic – step of adopting legislation⁴⁸ suspending the sale of babies' bottles containing BPA. This 'commercial suspension', which is of unlimited duration, is subject to conditions that make it a symbolic measure.

In September 2010, following a request from Denmark, the European Food Safety Authority (EFSA) issued its final opinion on BPA. Once again, France took action. When the government authority ANSES, or the French Agency for Food, Environmental and Occupational Health & Safety (L'Agence Nationale de Sécurité Sanitaire de l'Alimentation, de l'Environnement et du Travail), expressed its concern about BPA in frank terms, the French Environment Minister, decided to act. She planned to introduce mandatory labelling for BPA-containing food and beverage packaging in the near future. She also wanted to ban all BPA-containing products once safe alternatives are available.

The ANSES report⁴⁹, which based its findings on laboratory animal studies, concluded that exposure to low doses of BPA can be potentially harmful to health. In compliance with the precautionary principle, ANSES stated that pregnant or lactating women should avoid exposure to BPA, and that infants should not be exposed to this chemical. The results of this study were presented to the EFSA. France introduced a national ban on BPA in food contact materials, and urged that this ban be instituted at European level. The country is also committed to restricting the use of BPA in shop receipts. Furthermore, France has proposed that BPA be designated as a chemical of very high concern (SVHC) in the European

⁴⁷ <http://www.projetnesting.fr/Les-effets-du-Bisphenol-A-sur-le.html>

⁴⁸ <http://www.projetnesting.fr/BPA-l-eternel-retour-ou-l-histoire.html>

⁴⁹ <http://www.projetnesting.fr/Perturbateurs-endocriniens-le,2347.html>

classification system, due to its endocrine disrupting effects on health and on the environment, and to its reproductive toxicity effect.

3.3. National strategy

For several years, there have been few developments involving endocrine disrupting chemicals. However, on 29 April 2014, the Minister of the Environment, Ségolène Royale, presented a French national strategy against EDCs.⁵⁰ This strategy sets out actions⁵¹ to reduce risks. It also involves the inspection and evaluation of products intended for children, such as toys. This national strategy made France one of the drivers of protective policies against endocrine disrupting chemicals within the European Union.

The development of the national strategy began in February 2013, with the first meeting of a multi-stakeholder group. The group met on a total of seven occasions during the spring of that year. This working group included representatives of ministries, agencies, NGOs and businesses, as well as scientists, researchers, and other stakeholders. These negotiations led to a public consultation in the period from July to September 2013, which generated 1065 substantive responses from civil society. French civil society, represented by thirty NGOs, produced a manifesto entitled *Endocrine disrupting chemicals: time for action*. In the autumn of 2013, the NGOs frequently made themselves heard, often with the help of MPs, Senators and MEPs who took part in the negotiations to deal with the obstructions and to advance the process. This broad support removed the remaining obstructions, leading to the proclamation of the national strategy in April 2014.

The French national strategy has five components. The core components reflect the priorities outlined in the civil society manifesto:

- Support for research to gain a better understanding of endocrine disrupting chemicals and their effects on health and the environment. This involves measures such as the funding of research programmes and the creation of a public-private platform. The goal is to reduce the time required to test for chemicals.
- Promoting 'green' innovation in the business community through a range of measures, such as encouraging the use of non-toxic alternatives.
- Capacity building in the analysis and evaluation of known and suspected endocrine disrupting chemicals. Each year, eight potential endocrine disrupting chemicals are evaluated.
- The issue of endocrine disrupting chemicals must be moved up the European agenda.
- The improved provision of information to the public, both at home and in the workplace.

3.4. Vulnerable groups in focus

According to France, there is sufficient evidence of the health impairments caused by endocrine disrupting chemicals to justify protecting pregnant women, children and other vulnerable groups in particular from exposure to these chemicals. The precautionary principle is applicable here. The action involved primarily focuses on endocrine disrupting chemicals in everyday consumer products, such as cleaning products, plastics, cosmetics, textiles, and paints.

⁵⁰ <http://www.projetnesting.fr/29-avril-2014-Segolene-Royal.html>

⁵¹ http://www.nvc.nl/userfiles/files/2014-04-29_Strategie_Nationale_Perturbateurs_Endocriniens.pdf

The Minister's actions were also seen as a powerfully symbolic move, as they were primarily related to vulnerable groups. The products covered by the strategy included children's toys: France has submitted a request that the Directive on the safety of toys be reviewed. In this request, the country calls for the replacement of BPA in toys within the European Union. France is focusing checks on phthalates in toys. Seven thousand checks were carried out in 2013, 800 of which involved toys.

The measures are in line with the accelerated process planned by France, which is intended to yield results in regulation and in the phasing out of endocrine disrupting chemicals. This also included the announcement of Ségolène Royal's six priority projects in the context of the Ministry of the Environment's new roadmap.

3.5. European action

Ms Royal wasted no time and presented the French national strategy to her counterparts at the European Environment Council on 12 June 2014. She called on the European Commission to take swift action against endocrine disrupting chemicals. During that meeting of the Environment Ministers of the 28 Member States of the European Union, the French delegation submitted a motion⁵² (supported by Denmark and Sweden) to compel the Union to take action on endocrine disrupting chemicals. France argues that action at European level is required to limit human and environmental exposure to endocrine disrupting chemicals.

⁵² <http://www.wecf.eu/francais/actualites/2014/LaFranceveutuneactiondelUESurlesPE11juin2014.php>

Colophon

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Acknowledgements: Gülay Batman, researcher



Stichting Wemos
Postbus 1693
1000 BR Amsterdam
The Netherlands

T +31 20 435 20 50
F +31 20 468 60 08
E info@wemos.nl
www.wemos.nl



Women in Europe for a Common Future
Korte Elisabethstraat 6
3511 JG Utrecht
The Netherlands

T +31 30 2310300
F +31 30 2340878
E wecf@wecf.eu
www.wecf.eu



Pesticide Action Network Europe
60 Rue du Trône (Box 11)
1050 Brussels
Belgium

T +32 2 318 62 55
M +31 6 55 80 72 55
E hans@pan-europe.info
www.pan-europe.info