

## **UN Committee on the Rights of the Child 2016 Day of General Discussion: *Children's Rights and the Environment***

### **Working Group 1 – Children's exposure to environmental toxicants**

The responsibilities and powers of the Children and Young People's Commissioner Scotland are set out in the Commissioner for Children and Young People (Scotland) Act 2003 (and as amended in 2010 and 2014). The Commissioner is appointed by the Queen on the recommendation of the Scottish Parliament and is independent of the Scottish Government.

The Commissioner's main duty is to promote and safeguard children's rights in Scotland. He works to ensure that children and young people enjoy their rights and lead lives where they are free from discrimination, their best interests are always taken into account, they have the opportunity to maximise their development and their views are given due regard in decisions affecting them.

### **Introduction**

The right to a healthy environment is a precondition for the enjoyment of other rights set out in the United Nations Convention on the Rights of the Child. The Convention covers the full range of civil, political, economic, social and cultural rights and emphasises the interdependence of these rights. The right to life, survival and development (article 6) is deemed so important that the Committee on the Rights of the Child has identified it as one of its four guiding principles.

That fundamental right is currently under threat, with many scientists and academics raising

concerns that future generations would be able to reproduce viable populations<sup>1</sup>. Warning signs have appeared in 20 industrialised countries of a change to the usual birth ratio of about 105 boys to 100 girls, with declining numbers of boys being born: the new ratio has been recorded as low as 56 boys to 100 girls in Sarnia, Ontario, a town known for petrochemicals<sup>2</sup>. An alteration in birth ratios has also been shown by Stirling University, Scotland – a study which used data on historical trends in birth ratios<sup>3</sup>. In short, the pollution of our planet and of our bodies and those of living organisms are threatening life itself.

*The combined evidence shows that neurodevelopmental disorders caused by industrial chemicals has created a silent pandemic in modern society, The Lancet. (Nov 8<sup>th</sup>, 2006)*

## **Background**

Our polluted world has caused unprecedented rises in global temperatures and is also having a serious and unacceptable toll on our children's physical and mental health. The major source of this environmental pollution comes directly from burning fossil fuels, from everyday objects derived from fossil fuels and from industrial and agricultural practices. Man-made toxic chemicals are ubiquitous: they are now found in toys, furniture, clothing, toiletries, electrical appliances, food packaging and cleaning products. We face daily contamination through the air we breathe, the food we eat and the products we use. Many of these chemicals and pollutants can interfere with health and brain development. Examples of these include organophosphate (OP) pesticides, polybrominated diphenyl ether (PBDE) flame retardants, combustion-related air pollutants including polycyclic aromatic hydrocarbons (PAHs), nitrogen dioxide and particulate matter, lead, mercury, polychlorinated biphenyls (PCBs) and phthalates<sup>4</sup>.

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1 Di Renzo, G.C. et al. (2015) *International Federation of Gynecology and Obstetrics opinion on reproductive health impacts of exposure to toxic environmental chemicals.*

2 Thanks to the Women's Environmental Network, Scotland for highlighting this example. See: Mackenzie, C.A. et al. (2005) *Declining sex ratios in a first nation community.*

3 McDonald, E. et al. (2014) *Multi-factorial influences on sex ratio: a spatio-temporal investigation of endocrine disruptor pollution and neighborhood stress.*

4 Project TENDR (2016) Targeting environmental neuro-developmental risks.

Although many 'toxic diseases' existed throughout history, it was only in 1775 that a disease was found to be due to occupational toxic exposure<sup>5</sup>. In 1897, Lucy Dean, one of the UK's first female factory inspectors, identified asbestos exposure as causing respiratory illnesses: the UK banned it in 1999, but there is still no world ban. The neurotoxic effects of lead were known in Roman times, but it took until 1904 for an Australian report to raise the issue of epidemic lead poisoning in children; the source of the outbreak was revealed to be the ingestion of lead based paint by children playing on verandahs with peeling paint<sup>6</sup>.

World War Two stimulated the invention of thousands of new chemicals and substances. In 1992, Theo Colborn and scientists issued the Wingspread Consensus Statement on Endocrine Disruptors (EDCs) which stated '*Unless the environmental load of synthetic hormone disruptors is abated and controlled, large scale dysfunction at the population level is possible*<sup>7</sup>.'

## **Pre-polluted babies**

People's exposures to toxic chemicals begin from the moment of conception. Adverse effects can occur through the placenta from toxins in maternal blood and are epigenetic (i.e. influencing, but not initiated by DNA) and there is much evidence to show that these are numerous, serious and irreversible, even if some are treatable<sup>8</sup>. In 2005, the US Environmental Working Group (EWG) found an average of 200 industrial chemicals and pollutants in the umbilical cord blood of ten babies born in August and September of 2004<sup>9</sup>. Tests revealed a total of 287 chemicals in the group. Broken down by category, 28 came from waste by-products, while 47 came from different consumer products such as flame retardants and pesticides. Most disturbing of all was that 212 industrial chemicals and pesticides were found which had been banned more than 30 years before the

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5 In 1775 Percivall Potts published his findings on the connection between soot and scrotal cancer in chimney sweeps. Argentinian oncologist Angel Roffo (1931) produced skin tumours in rabbits with tobacco tar, building on similar work on tars and skin cancer that began with Pott's UK studies.

6 Grandjean, P. and Landrigan, P.J. (2006) Developmental neurotoxicity of industrial chemicals, p.2169.

7 Wingspread 1991: Chemically-induced alterations in sexual development: the wildlife/human connection. In: Colborn, T (1996) Our stolen future.

8 Women's Environmental Network, Scotland (WENs)

9 Houlihan, J. et al. (2005) *Body burden: the pollution in newborns: a benchmark investigation of industrial chemical pollutants and pesticides in umbilical cord blood.*

samples were taken. Of the 287 chemicals found, 134 were known carcinogens, 217 were toxic to the brain and nervous system, 151 were associated with causing birth defects, 154 caused hormone disruption and 186 infertility. The chemicals included neurotoxins such as lead, PCBs and mercury that we know can have profound effects on the developing child and many of these chemicals have ‘multiple toxic effects’.

There is now substantial scientific evidence linking toxic environmental chemicals to neurodevelopmental disorders such as autism, attention deficit disorder and intellectual disability, along with so called ‘modern day epidemics’ such as obesity, type 2 diabetes and respiratory disease<sup>10</sup>. The EWG’s findings dispelled the idea that the placenta shields cord blood and the growing foetus from chemicals and pollutants in the environment. This time is seen now as a critical period of vulnerability and chemicals can disturb the sensitive biological processes which occur during this important developmental period. Industrial pollution begins in the womb and we are right to be concerned. The EWG refers to this as the human ‘body burden’ — the pollution in people that permeates everyone, including the foetus.

### **The myth of the ‘low dose’**

Chemical industries continue to use the argument that the doses of these chemicals are so low (i.e. at parts per billion (ppb)) that they are completely safe, but ‘permitted’ levels of exposure to a toxin are not the same as ‘safe’ levels. Research on the effects of low doses of carcinogens and endocrine disrupting chemicals (EDCs) in animals and humans show that the idea of a cut-off point below which no harm is assumed is misleading. Risk may be very small but it never disappears, even at the lowest levels of exposure.

### **Mixtures**

We do not know the effects of multiple exposures as the total toxicity of a mixture of chemicals can be more than that of the toxicity of its most toxic component, an example being asbestos and tobacco which are more toxic together than independently of each other.

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<sup>10</sup> Grandjean. P. (2013) *Only one chance: how environmental pollution impairs brain development - and how to protect the brains of the next generation*. See also the work of Project TENDR and *Little Things Matter – the impact of toxins on the developing brain* (2014) [online] YouTube. Available from <https://www.youtube.com/watch?v=E6KoMAbz1Bw> [Accessed 31/08/2016].

Chemicals are currently only assessed for toxicity on an individual basis, but the effects chemicals may have in combination with each other are not considered.

## **Substitutions**

Project TENDR (Targeting Environmental Neuro-Developmental Risks), a collaboration of US scientists, health professionals and children's and environmental advocates, came together in 2015 out of concern over the scientific evidence linking toxic environmental chemicals to neuro-developmental disorders. In their consensus statement, they note that when a toxic chemical or category of chemicals is removed from the market, chemical manufacturers often substitute similar chemicals which may pose similar concerns or be virtually untested for toxicity<sup>11</sup>. This practice can result in 'regrettable substitution' which often makes things worse.

It is worth noting that EU Regulations differ from those in the United States. However, the Registration, Evaluation Authorisation and Restriction of Chemicals (REACH)<sup>12</sup> originally estimated 106,000 chemicals to be in commercial use in the EU. About 1000 new ones are added yearly, but only about 7% have had full toxicity testing. Many of these substances are toxic, endocrine disrupting chemicals (EDCs) or chemicals that can cause cancers (carcinogens).

## **Children's Rights**

The public are much more aware of the causes and effects of anthropocentric environmental degradation, especially regarding climate change, and the interrelationship between human rights and environmental protection is becoming well-accepted internationally. There is now a recognition that water shortages, food shortages and natural disasters are due to increased global temperatures and that those who carry the heaviest burden are the least able to protect themselves, notably children and young people— especially those in the non-industrialised world<sup>13</sup>. The pollution of children and young people's bodies is also seldom discussed or even acknowledged and, despite having to bear the brunt of this, they are seldom heard or asked for their views. This is mainly due to power imbalances existing

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11 Project TENDR (2016) *Targeting environmental neuro-developmental risks. The TENDR Consensus Statement*.

12 Reach <http://www.reachonline.eu>.

13 Governments recognised that those most affected by environmental issues should be part of the solution: Principle 10 refers to environmental justice and Principle 10 (and Chapter 25, agenda 21) recognises the key role of children as agents of change. Progress has however been slow.

between adults and children, but there are further disparities between rich and poor and between those living in industrialised and non-industrialised countries.

Every child has the right to grow up in a safe, clean environment, to lead a healthy life and to look forward to a safe and sustainable future. Many rights are relevant to this, but the right to a healthy environment is a prerequisite for all of them. It is thus the fundamental duty of all member states to protect the natural environment so that all other rights can be fully enjoyed. As Terre des hommes point out, '*environmental protection is child rights protection*<sup>14</sup>'.

### **Article 6**

As noted, a child's right to life, survival and development is fundamental for the exercise of other rights in the Convention on the Rights of the Child. This right necessitates action to ensure that there is no threat to life or survival, and it may entail strict regulation of – or the imposition of bans on – industrial activities which might impact on this right. How can a child enjoy the right to play (article 31) if their play areas have been recently sprayed by pesticides classified as 'probably carcinogenic' and which have the potential to affect that child's health and ability to learn? The same applies with regard to living near an incineration facility or a fracking site. What impact would this have to a child's healthy development?

The Precautionary Principle introduced at the United Nations Conference on Environment and Development 1992 ('the Rio Conference) states that when there is evidence of harm or potential harm to people or the environment from a substance or process, action should be taken to remove that hazard even in the absence of definitive scientific evidence. The magnitude of the potential risk to children's health warrants serious consideration of this principle.

Some argue that the widespread application of this principle will lead to many regulatory false positives (i.e. over-regulating minor risks and regulation of non-existent risks, often due to unwarranted public fears). The European Environment Agency in '*Late Lessons from Early Warnings*' note that understanding and learning from past false positives and false negatives is essential for improving decision making about public health and the environment. The first chapter of their report considers incidents of 'false positives', where regulation was

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14 Schubert, J. (2012) *Protecting environmental children's rights*.

undertaken based on precaution but were unnecessary. Only 88 cases were identified as 'false positives' and, after analyzing these, most were either real risks, cases where 'the jury is still out', unregulated alarms, or risk-risk trade-offs rather than false positives<sup>15</sup>.

### **Article 3 (best interests)**

Article 3(1) CRC states that '*In all actions concerning children, (...) the best interests of the child shall be a primary consideration*'. This includes actions that indirectly impact on children, such as those related to the environment. This is elaborated on in the Committee on the Rights of the Child's General Comment 7 on 'implementing child rights in early childhood'<sup>16</sup>. The Committee states that when governments determine the degree of environmental protection, the best interests of the child must be a guiding principle for decision-making.

Para 6 (b) states *that young children experience the most rapid period of growth and change during the human lifespan, in terms of their maturing bodies and nervous systems, increasing mobility .....* and para 13 (a) notes that *by virtue of their relative immaturity, young children are reliant on responsible authorities to assess and represent their rights and best interests in relation to decisions and actions that affect their wellbeing, while taking into their views and evolving capacity.*

The responsibility of adults to safeguarding these rights is made abundantly clear.

Para 13 (b) continues and stresses *that all law, policy development, administrative and judicial decision making and service provision that affect children must take account of the best interests principle. This includes actions directly affecting children .....as well as actions that indirectly impact on young children (e.g. related to the environment, housing or transport.)* This begs the question as to what procedures and mechanisms Government have put in place to ensure that best interests of the child are taken into account and how their views have been considered during this process.

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<sup>15</sup> European Environment Agency (2013) (EEA) *Late Lessons from early warnings: science, precaution, innovation.*

<sup>16</sup> GENERAL COMMENT No. 7 (2005) *Implementing child rights in early childhood*

## **Article 12**

This is also a fundamental right and guiding principle. Given that children and young people will inherit the earth we leave behind, it is important their voices are heard on decisions affecting them now and in their future. Governments also have a duty to inform and educate children and involve them in thinking through solutions. A child rights approach recognises children, both individually and in groups, as autonomous rights holders.

## **Article 24**

Article 24 refers to the right of the child to the enjoyment of the highest attainable standard of health, and this is dependent on the quality of the environment. However, and as noted, this is compromised even in the womb, during childhood and beyond. Article 24 also explicitly mentions environmental pollution and obliges states to consider the dangers and risks of environmental pollution when *combatting disease and malnutrition. through, inter alia, the application of readily available technology and through the provision of adequate nutritious foods and clean drinking-water, taking into consideration the dangers and risks of environmental pollution.* (24) (c)

## **General Comment No 15**

The CRC's General Comment No 15 (2013) on the right of the child to the enjoyment of the highest attainable standard of health (art. 24) notes that *this is an inclusive right which extends beyond timely and appropriate prevention, health promotion, curative, rehabilitative and palliative services, but also includes the right to grow and develop to their full potential and live in conditions that enable them to attain the highest standard of health ....* ' (para 2)

It points to the indivisibility and interdependence of children's rights that enable all children to develop their mental and physical abilities, personalities and talents to the fullest extent possible, noting that not only is the child's right to health important in its own right, but that its realisation is indispensable for the enjoyment of all the other rights in the Convention and dependent on the realisation of other rights in the Convention.

Para 49 of General Comment 15 refers to environmental pollution, calls on states to take measures to address the dangers and risks that local environmental pollution poses to children's health in all settings and calls on states to regulate and monitor the environmental impact of business activities that may compromise children's right to health, food security and access to safe drinking water and sanitation. The Committee recognises that climate change

and public health are linked and recommends that environmental interventions address climate change, as this is one of the biggest threats to children's health. Children's health concerns should be at the centre of Governments' climate change adaptation and mitigation strategies.

## **Article 29**

Article 29 calls on states parties to ensure that the education of the child shall be directed to:

(a) The development of the child's personality, talents and mental and physical abilities to their fullest potential. 29 (e) refers to the development of respect for the natural environment. The principle of non-discrimination (article 2, CRC) which requires all children to have equal access to safe environments is also underlined by the Committee on Economic, Social and Cultural Rights (CESCR) in its General Comment on the right to health.

The UN Committee on the Rights of the Child recently published its recommendations to the UK following the UK state examination<sup>17</sup>. Whilst not specifically referencing toxic chemicals, the Committee raised the question of 'environmental health', noting *concern at the high level of air pollution, which directly affects child health in the State party and contributes to the negative impact of climate change affecting various rights of the child, both in the State party and in other countries* (paras 67-78). This important recognition helps to underpin the arguments in this paper regarding harmful toxic chemicals. It also underlines the fact that the toxins that cause climate change are the very ones which damage our health. The Royal College of Paediatrics and Child Health and the Royal College of Physicians report 'Every Breath We Take', *the lifelong impact of air pollution*' echoes this and states....

*'just as climate change is primarily caused by the release of greenhouse gases, the warming climate itself alters atmospheric chemistry in ways that can damage health and wellbeing'<sup>18</sup>.*

The Committee also expressed concerns about the extremely low rate of breastfeeding in the UK, the fact that only one percent of women maintained exclusive breastfeeding for six months in 2010 and the inadequate regulation of marketing of breastmilk substitutes.

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<sup>17</sup> Committee on the Rights of the Child (2016) *Concluding observations on the fifth periodic report of the United Kingdom of Great Britain and Northern Ireland*.

<sup>18</sup> Royal College of Physicians (2016). *Every breath we take: the lifelong impact of air pollution*, p. 100.

## Two Scottish Case Studies

### Glyphosate

The World Health Organisation (WHO) lists about 900 known, probable or possible carcinogens and about 1000 substances are now listed as known or suspected EDCs. In 2015, the International Agency for Research on Cancer (IARC) classified glyphosate (the active ingredient in Monsanto's herbicide, 'Roundup') as 'probably carcinogenic for humans.' At the end of June 2016, the European Commission controversially adopted the extension of the current approval of glyphosate for a limited period and recommended to member states that its use in public parks, public playgrounds and gardens be minimised<sup>19</sup>. Some member states have gone further and banned its use. In June 2015 the French Government restricted the sale of glyphosate weedkillers in garden centres and is striving for a full ban. Malta banned it earlier this year and local authorities are phasing it out, recognising the dangers it poses and following the precautionary principle (as outlined on page 6). Despite this, glyphosate continues to be used liberally across Scottish local authority areas—sprayed in parks, children's playgrounds and play areas. This is often done without notice, without consent and without any information around the dangers this might pose, nor warning signs as to when spraying is occurring. It is worth noting that under article 29 (e) that they have to a duty to ensure that the education of the child should be directed to development of respect for the natural environment.

### Fracking and Unconventional Gas

Those who are most vulnerable, particularly children and those with health conditions, face the greatest threat from toxic chemicals. There are also high risk factors to living near to chemical facilities, such as fracking sites or wastewater treatment facilities. The Scottish Government has introduced a moratorium on shale gas fracking and coal bed methane, and a separate one on underground coal gasification whilst full health impact assessments and public consultation is carried out. The results of these are expected in autumn 2016. There has been little (if any) involvement of children and young people in its consultation events, nor has there been information published about potential decisions which will considerably

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<sup>19</sup> European Commission (2016) *Pesticides: after EU Member States fail to take responsibility for the decision on glyphosate extension, Commission extends the approval until European Chemical Agency issues its opinion.*

affect their futures. Over 700 chemicals, (many of which are EDCs) are used in fracking processes.<sup>20</sup> Kassotis and Nagel, who made this claim, stated:..

*We found more endocrine-disrupting activity in the water close to drilling locations that had experienced spills than at control sites. This could raise the risk of reproductive, metabolic, neurological and other diseases, especially in children who are exposed to endocrine-disrupting chemicals." (Susan Nagel (2013))*

Fracking fluids contain mixtures of chemicals that may be persistent, bio-accumulative and highly toxic. Flowback can contain these chemicals, as well as high concentrations of salts, heavy metals and NORMs (naturally occurring radioactive materials) which can contaminate soil and groundwater, leak into the atmosphere and have serious public health impacts. The leakage of highly toxic chemicals in drilling muds, fracking fluids, toxins and NORMs also have consequences for both the climate and public health.

Communities in Australia are already suffering from symptoms associated with exposure to these chemicals and the state of Victoria agreed to ban fracking on August 30<sup>th</sup>,2016. There is much external evidence – such as the *Physicians, Scientist and Engineers (PSE)* review of 400 peer-reviewed papers – on impacts of shale gas development which led to fracking ban in New York. This found that 98% of all papers published on health impacts indicated potential risks or adverse health outcomes, 87% of original research studies published on health outcomes indicated potential risks or adverse health outcomes, 95% of all original research on air quality indicated elevated concentrations of air pollutants and 72% of original research studies on water quality indicated potential, positive association, or actual incidence of water contamination<sup>21</sup>.

A complete ban of fracking and other unconventional gas production is the wisest approach. We cannot and should not risk the health of our children.

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20 Kassotis et al. (2013) *Estrogen and androgen receptor activities of hydraulic fracturing chemicals and surface and ground water in a drilling-dense region.*

21 See also for example: Concerned Health Professionals of NY (2015) *Compendium of scientific, medical and media findings demonstrating risks and harms of fracking (unconventional gas and oil extraction).*

## **What should be done?**

These two case studies illustrate the need for an inventory of current Scottish industrial chemicals use (some of this will be necessary under REACH<sup>22</sup>), the information from which can be matched with health studies where concerns have already been raised. A biomonitoring programme should also be introduced, not to inform individuals about which diseases they may or may not be at risk of developing but to guide government action to remove further risk and get a better idea of the extent of contamination of the Scottish population. Scotland is also well placed to progress the replacement of hazardous substances with safe alternatives given the growing field of research and development in green chemistry.

In line with the above, there should be a public 'right to know' which should include clearer labelling of products, along with a government programme to inform the public of possible toxic exposures. In line with CRC article 29, there is a duty to help to develop respect for the natural environment and children and young people should be much better informed.

There is also a need to introduce biomonitoring studies of cord blood, breast milk, and workplace studies in association with the unions. REACH and ETUC data will help to determine the most prevalent contaminants and so help to decide where the most urgent action should be taken. Industrial chemicals found in breast milk and cord blood should immediately be eliminated, as happens in Sweden.

Other articles (especially social rights) also have strong environmental dimensions— without the right to a healthy environment, we may breach other rights, such as rights to food, water and health. Air quality and water monitoring is already undertaken in Scotland. This should be extended and cover more detailed environmental monitoring of air, food, water, as well as every-day products, and cover workplaces, homes, streets, parks and gardens and schools.

The child's right to food also depends on a healthy environment free from hazardous substances such as pesticides. The Scottish Government should promote organic agriculture, rather than intensive agriculture which tends to deplete soils of nutrients whilst organic farming methods tend to preserve these. Less damaging food production and diets

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<sup>22</sup> See page 4

are key to a healthy environment as poor diet and obesity make people much more vulnerable to pollution. The child's right to water also depends on having safe water free from contamination (i.e. substances that might affect a child's right to health).

Do we need a specific right to a healthy environment? As Terre des hommes point out their report 'Protecting Environmental Child Rights', the International Bill of Rights (the Universal Declaration, the International Covenant on Civil and Political Rights (ICCPR) and the International Covenant on Economic Social and Cultural Rights (ICESCR) were written before international environmental law started to develop, but the Committee on the Rights of the Child has compensated for the lack of substantive environmental rights by highlighting the dependence of protected rights on preserving a healthy environment. They also suggest that governments tend to be more willing to include environmental rights in national constitutions and in regional treaties such as the African Charter on Human and People's Rights (1980). It may be that this is exactly the right time to consider this.

The General Day of Discussion to be held in September 2016, will provide an opportunity to consider these issues further and potentially look towards developing a General Comment.

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