

MSP Institute - Multi-Stakeholder Processes for Sustainable Development e.V.  
Gutzmannstr. 24  
14165 Berlin

Dr. Marcos A. Orellana, Special Rapporteur on Toxics and Human Rights  
OHCHR-UNOG  
Avenue Giuseppe Motta 48,  
CH-1202 Geneva  
Switzerland

**MSP Institute, 15.03.2021**

**Submission: input for the upcoming thematic report on the right to benefit from science progress and its applications**

Dear Dr. Marcos A. Orellana, Special Rapporteur on toxics and human rights,

Thank you for your call for submissions to support preparations for your upcoming report on the right to benefit from science progress and its applications. We very much appreciate the opportunity to share with you information relating to gender equality, and we hope this helps to address the disregard of gender aspects in the report.

Since 2017 we at MSP Institute (<http://msp-institute.org/>, a small NGO based in Berlin), have been doing advocacy work for the integration of gender in the SAICM Beyond 2020 process. More Information on our project, background materials, position papers and webinars are available at our project website: <http://gender-chemicals.org/>.

For further information or if you have any questions please do not hesitate to contact us.

Best regards,

Anna Holthaus and Minu Hemmati, MSP Institute

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## Ensuring that all gender benefit from science progress and its application

In the following, we aim to demonstrate that countries do not take sufficient action to ensure that all gender benefit from science progress and its application and thus the human right to scientific progress (Article 15 of the International Covenant on Economic, Social and Cultural Rights (ICESCR)) is continuously violated by many governments.

We would like to address four different violations of Article 15:

1. countries disregard the need to ensure that the benefit of science is given to all gender through gender-responsiveness and data disaggregation.
2. countries neglect the right of women to information concerning science and technology,
3. countries neglect the right of women to participate in the process of science, and
4. countries interfere in the freedom of individuals and institutions to develop science on gender studies and gender-sensitive research.

### **1. Countries disregard the need to ensure that the benefit of science is given to all gender through gender-responsiveness and data disaggregation.**

Within the General comment No. 25 (2020) on science and economic, social and cultural rights the United Nations Committee on Economic, Social and Cultural Rights (CESCR) states in paragraph 30 that: *“it is very common that scientific research and new technologies are gender biased and not sensitive to the particularities and needs of women”* and highlights that *“[a] gender-sensitive approach is not a luxury for scientific research, but a crucial tool in order to ensure that scientific progress and new technologies adequately take into account the characteristics and needs of women and girls. This approach should not be relegated to the last stages of research, but incorporated from the first stage, such as the choice of the subject and the design of methodologies, and must be present throughout all steps of scientific research and its applications, including during the evaluation of its impacts. Decisions concerning funding or general policies must also be gender-sensitive.”*

In our view, the disregard of the need for gender-sensitive approaches also applies to scientific research on toxics and chemical exposure:

- The need for gender-disaggregated information is crucial. “In the absence of such data, environmental analyses remain inadequate and partial, and establishing baselines, monitoring progress and assessing outcomes is almost impossible.” (UNDP 2016: Global Gender and Environment Outlook)
- “[...], men and women are exposed to differing levels of toxic chemicals and they have different health reactions when they are exposed to toxic chemicals. Thus, gender is a critical component to consider when formulating policies and programmes in the area of sound management of chemicals. However, current health and exposure models have not been targeted by gender. Going forward, it is important to collect epidemiological health data on chemical exposures that are gender-specific.” (UNDP 2011: Chemicals and Gender)
- “Overall, there is limited data or hard numbers on how different gender roles differentially expose men and women to hazardous chemicals.” (SAICM 2017: Gender and the sound management of chemicals and waste).
- “There is limited hard data and exact figures on how the different gender roles expose women and men in a different manner to chemicals. More research is required to attain information such as absolute numbers of exposed women, exposure pathways, typical chemicals and their effect on women’s health.” (WECF 2016: Women and Chemicals. The impact of hazardous chemicals on women).

- “It is [...] important to have access to both gender- and sex-disaggregated data, i.e. data and information collected that records responses separately for women and men and presents the results in a way that makes it possible to identify differences between these two groups. When analyzing issues related to gender equality in the workforce, gender-disaggregated data could for example include the percentage of the workforce that identify as male/female and their salary levels, whereas sex-disaggregated data would focus on the sex-specific differences in e.g. impact of chemical exposure at the workplace. Only when both types of data are available can progress towards gender equality be tracked and evaluated. However, gender-disaggregated data in labour statistics is unfortunately often lacking for occupational exposure to hazardous chemicals. This lack of data makes occupational epidemiology challenging in many cases.” (SAICM/IPEN 2020: Women, Chemicals and the SDGs.)
- According to the General Comment No. 25 by the CESCR “a gender-sensitive approach is of particular relevance to the right to sexual and reproductive health” (paragraph 33). This is particularly true with as “*exposure to certain hazardous chemicals has been shown to effect sexual functioning and fertility in both women and men, as well as developmental disorders in the foetus and o spring. Preconception and prenatal exposure to toxic chemicals is a critical issue for both women and men of childbearing age*” (UNDP 2019: Global Chemicals Outlook II).

→ Countries must therefore provide much more and more systematic support for gender-responsive research, analysis methods and data collection, wherever relevant.

## 2. countries neglect the right of women to information concerning science and technology

Within the General comment No. 25 (2020) on science and economic, social and cultural rights the CESCR states in paragraph 17 that “scientific progress and its applications should be accessible for all persons” and that “information concerning the risks and benefits of science and technology should be accessible without discrimination.”

In regard to toxics and chemicals exposure, it seems that countries neglect this right to information especially for women:

- Women are the largest group of consumers or shoppers worldwide, making day-by-day purchasing choices. However, consumers only have very limited information about chemicals in purchased products. In many countries, there is no labelling or declaration of contents in place at all. (WECEF 2016: Women and Chemicals. The impact of hazardous chemicals on women). Additionally, women in particular have a responsibility to make healthy consumer decisions: organized through the feminization of reproductive labour, precautionary consumption exerts pressure on women to identify and purchase goods that are deemed non-toxic, natural, or organic in order to avoid toxic exposures.
- In the development of training/awareness and information campaigns, biases in educational systems need to be considered. For example, participating women might be less equipped to understand, cope with and anticipate the implications of chemicals exposure and environmental change or resource conditions (UNDP 2011: Chemicals and Gender).  
Example on pesticides: Differences in exposure are closely linked to the general level of education and specialized knowledge about pesticides to ensure their safe handling and usage. Gupta et al. (2012) show in a questionnaire-based study among 200 men and 120 women in India, that women know less about standardized labels and safety precautions than men. The authors highlight that this is especially a problem in developing countries due to lower literacy rates, less training and income as well as small-scale or subsistence operations with less capacities for and control of systematic risk mitigation strategies.

→ Countries have to ensure equal accessibility to information for all gender by implementing gender-responsive information and education systems, programs and policies which promote transparency and

access to data. This will allow both workers and consumers to make informed decisions that minimize their vulnerability to harmful chemical exposure. In this regard, we also wish to refer to the United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Arhus Convention), which has been ratified by 47 countries.

### 3. Countries neglect the right of women to participate in the process of science

Within the General comment No. 25 (2020) on science and economic, social and cultural rights the United Nations Committee on Economic, Social and Cultural Rights (CESCR) states in paragraph 29 and 30 that: *“Women are frequently underrepresented in scientific activity. Sometimes this is owing to situations of direct discrimination in access to education or professional employment and promotion. In other cases, discrimination is more subtle and is based on stereotypes or professional practices that discourage women’s participation in scientific research. In particular, women’s advancement in scientific careers, both in academia and in industry, is cumulatively limited as they climb the hierarchical ladder.”* and that *“women have the right to participate in scientific research on an equal footing with men; thus, unequal access to scientific education or scientific careers constitutes discrimination in principle.”*

With regard to chemistry, it seems that countries continuously neglect the right of women to participate in the process of science:

- Science, technology, engineering and math (STEM) fields show a high level of gender imbalance, chemistry included, in all regions of the world. Given the mindset and gender stereotypes about girls’ and boys’ aptitude for mathematics and science at the primary and secondary school level, fewer women enroll in science and technology-related courses as compared to men. Gender stereotypes encourage women to pursue a career in child development, education, medicine (nursing) and a range of service sector occupations. While this may not be bad per se, women are often pushed into just a few vocations. In Asia, for example, this attitude has been challenged to a certain extent with the spread of manufacturing and the coming of the digital revolution. Many more young women in the region, especially in China, India, and Republic of Korea, now view vocational training, science and technology as viable career options, thereby enhancing opportunities (UNESCO Bangkok 2010: Gender issues in higher education).
- A UK study shows that a mere 9% of chemistry professors in the UK are women. This means that between undergraduate study and reaching senior positions in academia, the relative proportion of female chemists drops by 35 percentage points and that at a national level, progress in increasing diversity in the chemical sciences remains extremely slow. The study identifies academic funding structures, academic culture and lacking opportunities for part-time and flexible work as key barriers for women’s carriers in chemical sciences (Royal Society of Chemistry 2018: Breaking the Barriers. Women’s retention and progression in the chemicals sciences).
- Statistics on chemistry courses 2008-2018 by the German Society of Chemists show that in Germany there has been a slight and steady increase in the proportion of female chemistry students since 2011, from 36% to 43% in 2018. However, gender differences are bigger when it comes to degrees: only about a third are held by women - bachelor’s: 37%, master’s: 35%, doctorate 34% (as of 2018).

→ We recognize that countries are trying to increase women’s participation in chemical sciences with various STEM-related projects, initiatives and scholarships. Yet progress seems to be very slow, and significant barriers in academic culture as well as structural inequalities between women and men with regard to paid labour remain untouched.

That’s why we wish to underline the following, stated by the CESCR: *“States have to carefully design and implement quality scientific education programmes in order to allow all persons equal opportunities to gain a basic level of understanding and knowledge of the science and training needed to pursue careers in science, and to ensure access without discrimination to available employment in scientific research fields.”* that *“states must [...] immediately eliminate barriers that affect girls’ and women’s access to quality*

*scientific education and careers. Furthermore, States must take steps to ensure women's substantive equality in access to scientific education and careers by, for example, raising public awareness in order to eliminate stereotypes that exclude women from science or adopting policies for both men and women to balance domestic life with scientific careers. Temporary special measures, such as quotas for women in scientific education, might be necessary in order to speed up the attainment of substantive equality in the enjoyment of the right to participate in and to enjoy the benefits of scientific progress and its applications."*

#### **4. Countries interfere in the freedom of individuals and institutions to develop science on gender studies and gender-sensitive research**

Within the General comment No. 25 (2020) on science and economic, social and cultural rights the United Nations Committee on Economic, Social and Cultural Rights (CESCR) states in paragraph 14 that: "*States parties should not only abstain from interfering in the freedom of individuals and institutions to develop science and diffuse its results. States must take positive steps for the advancement of science (development) and for the protection and dissemination of scientific knowledge and its applications (conservation and diffusion)*".

With regard to women and gender studies we argue that countries interfere in the freedom to develop science and that states do not take sufficient steps for the advancement of science and the protection of scientific knowledge:

- Women and gender studies remain a marginal and contested field of research: only an extremely small proportion of the funds used for scientific purposes is channeled into gender research, with very little funding for its institutional embedding (10th European Feminist Research Conference, September 2018).
- Gender studies are currently under particular pressure due to the recent advancement of right-wing populist parties across western countries. These movements challenge the right to academic freedom and target gender studies (among other things) as an ideological field rather than a valuable area of academic knowledge production (ibid.).
- Some states interfere in the freedom to develop science: gender studies programs were banned in Hungary in October 2018. Several Eastern European Countries are discussing a ban of gender studies or indirectly complicate the development and dissemination of scientific knowledge on gender.

→ Gender studies are important as their research allows us to understand and unpack root causes of unsustainable behaviour and societies, and hence have a transformational potential also in regard to toxics. Countries need to need to tap into this potential by clearly promoting gender studies in order to develop better and more effective policies and to bring about sustainable development, justice and peace.