**Verbatim:**

**Nicholas Rees**

**Working group 1 – Children’s exposure to environmental toxicants**

Firstly, thank you Ritu. That was an excellent speach on how air pollution affects the lives of children – how it affects their ability to go to school, their health, and their overall wellbing, and a multitude of their rights.

Ritu has provided a good assessment of how air pollution affects the lives of children. I’m going to briefly discuss the scale of the problem.

This is not a minor issue.

According to WHO, around 600,000 children died from diseases which are linked to indoor and outdoor air pollution. That is more children than who die from malaria and HIV, combined.

The vast bulk of the number of children dying from indoor air pollution are in Africa and Asia.

And while it has gotten better in some places, it is not one that is improving in many others. According to recent trend projection from the OECD, many forms of air pollution are likely to increase over the next 50 years.

This could have a profound affect on global premature deaths. The OECD predicts that deaths from particulate matter and ozone could double during that time period.

Air pollution does not only kill – studies have shown that it affects many facets of a child’s life – their health and wellbeing. It is responsible for about half the cases of pneumonia. Studies have shown that it can exacerbate asthma. New research is also pointing to the effect it has on cognitive development. It also affects mothers during pregnancy.

Children are uniquely vulnerable. Their lungs are still developing. Their brains are still developing. Exposure to anything that harms these development processes is extremely detrimental – potentially affecting them for their whole life. The number of alveoli (air sacs) in the human lung increases from 24 million at birth to 257 million by the age of four.

The effects of air pollution on the child are not limited to the moments that they are exposed – but can last throughout their lives. Severe and chronic exposure has been shown to have health effects far down the line – including well into adulthood. It can affect their education in terms of being able to go to school and learn. It can affect their long-term health, which can lead to costly health expenditures later in life. Chronic and severe exposure to air pollution, therefore, can arguably can result in wider social and economic deprivations and inequities.

What is even worse, is that this could be an invisible threat in many places. We know from the many ground level monitors in Asia how bad the air can be. However the latest estimates from the World Health Organization indicate that this is not just an Asian problem - three African cities: X, Y, Z are amongst the top ten most polluted in terms of PM10. And it is not just capital cities – but also smaller cities, industrial centres on the outskirts of major mega cities.

Here we can see the air pollution levels from over 3000 ground-level monitoring stations around the world. In Europe and North America, there are regions with concern, but it appears most severe in Asia and the Middle East. But what I find most striking is how few ground-level monitors exist in Africa.

Now look at this satellite map. There is an air pollution problem in Africa. And the few ground level monitoring stations in some countries help to verify that.

We need more monitoring stations – as this will be a first and major step to address air pollution in regions where it often goes under-recognized.

I am going to leave with three straight-forward overall recommendations:

1. Reduce air pollution
2. Prevent children’s exposure to it
3. Improve children’s overall health so that when they are exposed they are more resilient
4. Monitor air pollution better