32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

Senate Community Affairs References Committee
Inquiry into the impact of microplastics, toxics and forever chemicals on human health

Submitted by: **Mr Ravi Krishnamurthy**
President, **Australian Multicultural Action Network (AMAN)**

Date: 30/11/2025

---

1. About AMAN and this submission

The Australian Multicultural Action Network (AMAN) is a community-based, volunteer-led organisation that advocates for the rights, wellbeing and inclusion of culturally and linguistically diverse (CALD) communities, migrants, refugees, international students and multicultural seniors across Australia. We work closely with community groups, faith leaders, elders, young people and people with disability to improve access to health, education, transport, housing and social participation.

As President of AMAN, I have the privilege of hearing directly from communities about their lived experience of environmental risks, health inequity and the daily realities of navigating complex systems. While most of our members are not scientists, they are the people who live near industrial sites, rely on public housing, use lower-cost products and services, and often have limited access to health information in their own language. These factors can compound environmental and toxic exposures over a lifetime.

AMAN welcomes this inquiry into the impact of microplastics, toxics and forever chemicals on human health. We particularly commend the Committee for explicitly considering reproductive health, early life stages and chronic disease, and for implicitly recognising that these issues intersect with social determinants such as income, language, housing and education.

Our submission offers:

- A brief overview of the emerging scientific evidence on microplastics, endocrine-disrupting chemicals (EDCs) and forever chemicals such as PFAS;
- A focus on how these exposures may disproportionately affect CALD, migrant and low-income communities;
- Responses to each term of reference, with practical recommendations for policy, regulation, research and community engagement.

---

2. Context: microplastics, toxics and forever chemicals as a public health equity issue

Plastic production and use continue to increase globally, and microplastics and nanoplastics are now detected in water, food, soil, air and human tissues. Recent reviews emphasise that microplastics can

32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

enter the human body through ingestion, inhalation and possibly dermal routes and may trigger inflammation, oxidative stress and cellular damage with potential impacts on multiple organ systems.

The World Health Organization's plastics and health initiative and its work on nano- and microplastic exposure highlight important knowledge gaps but also underline that precautionary action is warranted, particularly for vulnerable populations. Similarly, international evidence on endocrine-disrupting chemicals, including phthalates, bisphenols and certain pesticides, shows associations with reproductive disorders, hormonal dysregulation and developmental impacts.

Forever chemicals such as per- and polyfluoroalkyl substances (PFAS) are persistent, bioaccumulative and now widely found in human biomonitoring studies. Australian health agencies and expert panels have acknowledged associations with raised cholesterol, altered kidney function and immune effects, while emphasising ongoing uncertainty and the need for precaution.

From the perspective of AMAN, three cross-cutting themes are critical:

1. **Distribution of exposure** – People in lower-income areas, those living near industrial facilities, and families with limited access to "green" consumer alternatives are more likely to be exposed to higher levels of pollutants and low-cost plastic products.
2. **Differential vulnerability** – Young children, pregnant women, older adults, people with chronic conditions and workers in certain occupations (e.g. food handling, cleaning, hair and beauty, manufacturing) may be more vulnerable to the same level of exposure.
3. **Information and agency** – CALD communities often have less access to clear, culturally appropriate information about environmental health risks, and fewer realistic options to avoid exposure even when they are aware of the risks.

From this lens, microplastics and toxics are not only scientific and regulatory issues, but also questions of equity, justice and trust.

---

3. Reproductive health impacts (Term of Reference a)

(a)(i) Women's fertility, hormonal disorders, endometriosis, PCOS and premature menopause

International evidence increasingly links exposure to endocrine-disrupting chemicals to adverse reproductive outcomes in women, including reduced fertility, altered ovarian function, endometriosis and polycystic ovary syndrome (PCOS). While much of this evidence relates to specific chemical groups such as phthalates and bisphenols, microplastics can act as carriers for these chemicals, as well as for heavy metals and persistent organic pollutants.

For CALD women, reproductive health is often influenced by cultural expectations, stigma around infertility, and barriers to care. In our community conversations:

32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

- Women in shift-based, low-wage roles (cleaning, hospitality, food processing) report daily contact with plastics, solvents and chemical products with little or no training about long-term reproductive impacts.
- Some migrant women rely heavily on low-cost plastic food containers and bottled water due to housing conditions, lack of trust in local tap water, or cultural food storage practices.
- Many report poor access to specialist care for endometriosis and PCOS, with symptoms normalised as "just part of being a woman".

We recommend:

1. **Targeted research** on reproductive outcomes among women in high-exposure occupations and CALD communities, with appropriate language and cultural support.
2. **Stronger labelling and regulation** of consumer products with known or suspected endocrine disruptors, with specific attention to products heavily used by women (cosmetics, personal care, food packaging).
3. **Investment in culturally tailored education** programs on reproductive health and environmental exposures delivered through multicultural health services, women's centres and community organisations.

(a)(ii) In utero transmission, placental function and foetal development

Microplastics and associated chemicals have been detected in human placenta and foetal tissues in emerging studies overseas, raising concern about potential impacts on placental function, nutrient transfer and immune development. EDCs are already linked to altered foetal growth, genital malformations and long-term reproductive dysfunction.

For many migrant and refugee women, pregnancy care is fragmented by language barriers, low health literacy and immigration-related stress. Pregnant women from CALD backgrounds may:

- Live in overcrowded housing close to major roads or industrial zones, increasing exposure to polluted air and indoor dust (a recognised source of microplastics and chemical contaminants);
- Work in manual or service sector jobs right up to late pregnancy, with limited control over workplace exposures;
- Have limited access to independent interpretation when discussing risks with clinicians, reducing opportunities to ask questions or negotiate safer environments.

We recommend:

4. **Routine inclusion of environmental exposure questions** (e.g. plastics, occupational chemicals, indoor air) in antenatal assessments, backed by updated clinical guidance and interpreter support.

32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

5. **Funding for longitudinal birth cohorts** in Australia that specifically recruit CALD families, to examine in utero exposure to microplastics and chemicals and follow children's development over time.

(a)(iii) Maternal health, pregnancy outcomes and loss

Endocrine-disrupting chemicals and PFAS exposure have been associated internationally with pregnancy complications, including pre-eclampsia, gestational diabetes and some adverse birth outcomes, although evidence remains mixed and often confounded. Emerging work on microplastics suggests potential for chronic inflammation and oxidative stress, which are biologically plausible pathways for pregnancy loss and complications.

From a community perspective, miscarriage, stillbirth and preterm birth carry profound stigma in many cultures. Women often internalise blame and rarely connect these experiences to environmental or occupational exposures. AMAN has heard repeated stories of women who worked in chemically intense environments (for example, repeated use of cleaning agents in poorly ventilated spaces) and later wondered whether this contributed to their losses, but felt unable to raise these questions with clinicians.

We recommend:

6. **Development of culturally safe counselling and information materials** for women who experience pregnancy loss, including simple explanations of known and suspected environmental factors.
7. **Inclusion of environmental exposure questions in perinatal data collections**, with an option to capture occupation, housing type and proximity to industrial or high-traffic areas.

(a)(iv) Fertility across all populations, including men's fertility

Evidence increasingly suggests that hormonal disruptors can affect male fertility, leading to reduced sperm count, motility and morphology, and that they may also contribute to testicular disorders and hormone imbalance. Microplastics and plastic-associated chemicals are a likely part of this wider pattern of exposures.

Men in CALD communities may be disproportionately represented in occupations with higher chemical exposure, including:

- Food packaging and manufacturing;
- Construction and painting;
- Automotive and mechanical work;
- Waste management and recycling.

Yet conversations about fertility often focus solely on women. We therefore recommend:

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

8. **Worker-focused interventions** in high-risk industries: safer product substitution, improved ventilation, PPE, and mandatory training in plain English and key community languages.
9. **Public health messaging that explicitly includes men's fertility**, framed in culturally respectful ways that do not assign blame but emphasise shared responsibility and the benefits of reducing exposure.

---

4. First 1,000 days of life: developmental pathways and later-life disease (Term of Reference b)

The first 1,000 days of life—from conception to age two—are recognised as a critical window in which exposures can shape long-term risk of obesity, cardiovascular disease, diabetes and neurodevelopmental outcomes. EDCs and microplastics may interfere with hormone signalling, immune programming and metabolic regulation during this period.

In CALD and migrant families, this developmental window often coincides with:

- Settlement stress and financial hardship;
- Overcrowded or substandard housing with higher dust and mould burden;
- Heavy reliance on packaged, ultra-processed foods due to cost, convenience, or lack of culturally appropriate fresh options;
- Limited access to child health nurses, developmental screening and early intervention due to language and system navigation barriers.

Children in these settings may therefore experience **higher exposure** to microplastics (via indoor air, dust and low-cost food packaging) at the very time their bodies are most vulnerable.

We recommend:

10. **Embedding environmental health questions and guidance** into early childhood services (child health clinics, playgroups, early learning centres), including practical steps families can take to reduce plastic use in food storage, feeding and play where feasible.
11. **Funding place-based, multicultural early-years initiatives** that integrate environmental health, nutrition, housing advocacy and developmental support, rather than treating these issues in isolation.
12. **Ensuring that any national microplastics strategy explicitly considers children in the first 1,000 days as a priority group**.

---

5. Cardiovascular impacts (Term of Reference c)

32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

Recent studies have detected microplastics and nanoplastics in atherosclerotic plaque in human carotid arteries, with affected patients showing a markedly higher risk of heart attack, stroke or cardiovascular death. These findings are early but concerning, suggesting that microplastics may contribute to vascular inflammation and plaque instability.

Cardiovascular disease already disproportionately affects some CALD communities due to diet, stress, genetics and barriers to preventive care. Layering potential microplastic exposure on top of these existing risks raises important equity concerns.

With emerging evidence that microplastics may be present in high concentrations in indoor air and road dust, people living and working in dense urban environments with poor ventilation—such as migrant workers in hospitality, warehouses, rideshare vehicles and some social housing—may carry a higher burden of exposure and therefore potential cardiovascular risk.

We recommend:

13. **Incorporating microplastics exposure considerations into cardiovascular prevention strategies**, particularly for high-risk communities, while emphasising that traditional risk factors (smoking, diet, exercise) remain central.
14. **Supporting Australian cardiology and public health researchers** to examine the relationship between microplastic exposure and cardiovascular outcomes in local cohorts, including oversampling of migrant and low-income communities.
15. **Tightening regulations on major sources of airborne microplastics**, including waste management, synthetic textiles and tyre wear, in alignment with broader air quality strategies.

---

6. Endocrine disruptors, cancer and immune dysfunction (Term of Reference d)

EDCs and forever chemicals have been linked in international studies with increased risks of certain cancers (e.g. breast, testicular), hormone dysregulation, respiratory disease, inflammatory conditions and changes in immune function. While the absolute risks at current population exposure levels remain under active debate, the potential for cumulative effects and interaction with other risk factors cannot be ignored.

From a community standpoint, we observe:

- Families living near industrial sites or contaminated land who are deeply worried about "invisible" exposures but struggle to interpret technical reports or risk assessments.
- CALD communities receiving mixed messages: some sources warn of catastrophic health impacts from pesticides, plastics and PFAS; others reassure that risks are negligible. This inconsistency undermines trust in both government and science.

32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

- People with chronic inflammatory conditions (e.g. asthma, autoimmune disease) wondering whether environmental exposures play a role, but rarely having these questions explored during clinical consultations.

We acknowledge recent Australian reviews on PFAS which suggest that, at current exposure levels, cancer risks are likely low, but also recognise that these conclusions are accompanied by uncertainty and calls for ongoing monitoring and stronger regulation.

We recommend:

16. **Adopting a precautionary approach** to regulating known and suspected endocrine disruptors, particularly where safer alternatives exist.
17. **Ensuring that risk communication materials** about PFAS and other chemicals are co-designed with communities, including CALD groups, and are available in multiple languages and formats.
18. **Strengthening data linkage** between environmental monitoring, cancer registries and chronic disease datasets, while protecting privacy, to enable better detection of patterns and hotspots.

---

7. Public education and information efforts (Term of Reference e)

At present, public information on microplastics and toxic chemicals is fragmented, technical and often contradictory. People are told simultaneously that:

- Microplastics are everywhere and harmful;
- Evidence of direct human health harm is limited and uncertain;
- They should avoid plastics but are given little practical guidance that fits within tight budgets and busy lives.

For CALD communities in particular:

- **Language barriers** mean that key documents are rarely accessible;
- **Digital exclusion** affects older migrants and newly arrived refugees;
- **Cultural beliefs and practices** may influence how risk messages are received and acted upon, especially when they appear to conflict with traditional food storage or preparation practices.

From AMAN's experience running health information sessions, we know that community members respond best to **practical, non-alarmist advice** that respects their realities. For example, suggesting simple steps such as avoiding very hot food in cheap plastic containers, choosing tap water over

32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

bottled where safe, increasing ventilation when cleaning, and reducing unnecessary single-use plastics.

We recommend:

19. **A nationally coordinated, culturally responsive communications strategy** on microplastics, toxics and forever chemicals, led by the Australian Government in partnership with multicultural health services and community organisations.
20. **Funding for community-led workshops** in multiple languages that combine environmental health with topics like nutrition, cooking and home safety, so that messages are delivered in a holistic, non-fear-based way.
21. **Clear, consistent messaging for clinicians**, including translated materials they can give to patients, to help align advice and avoid mixed messages.

---

8. Potential benefits of a national standard for consumer products (Term of Reference f)

A national standard for consumer products that addresses microplastics, endocrine disruptors and forever chemicals could provide:

- **Clarity for consumers**, reducing reliance on individual research and "greenwashing".
- **Consistency for industry**, especially small and medium businesses who currently face a patchwork of requirements.
- **Protection for vulnerable groups**, by prioritising standards for products used by pregnant women, infants and children, and those marketed heavily to low-income households.

Internationally, the European Union has introduced restrictions on intentionally added microplastics in products, including cosmetics and certain industrial uses, and has progressively banned microbeads in rinse-off products. Several jurisdictions have also taken steps to phase out specific high-risk EDCs and PFAS in consumer goods.

We recommend:

22. **Developing a national standard for microplastics and harmful chemicals in high-contact consumer products**, phased in over time, with clear labelling and a focus on:

- Children's products (toys, feeding equipment, school supplies);
- Food contact materials;
- Personal care and cosmetic products;
- Household cleaning products.

32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

23. **Introducing mandatory, simple hazard icons and plain-language warnings** for products containing certain high-risk chemicals, with icons tested for comprehension across different language and literacy levels.
24. **Supporting small businesses and multicultural retailers** with transition grants and technical assistance to source safer products, so that CALD communities are not left with only "cheap but toxic" options.

---

9. International protocols and policies (Term of Reference g)

Several international developments provide useful lessons for Australia:

- **EU microplastics restrictions and microbead bans** in cosmetics demonstrate that phased, category-based bans are feasible and can substantially reduce future environmental burden.
- **Global negotiations on a plastics treaty** are increasingly recognising the need to treat plastics as a public health issue across their full lifecycle, not just as waste.
- **Country-specific PFAS regulations** (e.g. in the EU and US) show the importance of setting ambitious drinking water standards, restricting non-essential uses and investing in remediation.

Australia has already engaged with some of these trends through PFAS reviews and draft guidelines, but there is an opportunity to:

- Align more closely with best-practice international exposure limits where feasible;
- Move beyond a chemical-by-chemical approach towards **class-based regulation** for families of chemicals with similar properties (e.g. PFAS as a class), to avoid "regrettable substitution";
- Ensure that any international commitments are translated into **on-the-ground benefits for communities**, rather than remaining at the level of treaties and technical standards.

We recommend:

25. **Adopting international best-practice restrictions** on intentionally added microplastics and high-risk EDCs, with appropriate transition periods but clear end-dates.
26. **Embedding health equity and CALD representation** in Australia's engagement with global plastics and chemical agreements, for example by including community voices in delegations, consultations and treaty follow-up.

---

10. Adequacy of Australian research, monitoring and measurement standards (Term of Reference h)

32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

Recent reviews of microplastics in Australia highlight that while environmental monitoring has grown, human health–focused research and standardised measurement approaches remain limited. There are particular gaps in:

- **Indoor air and dust monitoring** in homes, schools, workplaces and vehicles, despite evidence that these may be major exposure pathways;
- **Biomonitoring studies** that capture microplastics and chemical exposures in diverse population groups, including CALD communities, migrants and remote communities;
- **Longitudinal cohort studies** that can link early-life exposures to later health outcomes in an Australian context;
- **Community-engaged research**, where affected communities help define research questions and interpret findings.

Australia has made important progress in PFAS monitoring and health impact assessment, including through the ANU PFAS Health Study and national biomonitoring initiatives. However, lessons from PFAS—such as the need for early action despite scientific uncertainty—should inform broader policy on microplastics and EDCs.

We recommend:

27. **Developing national guidelines for the measurement of microplastics in environmental and biological samples**, ensuring comparability across studies.
28. **Embedding microplastics and chemical exposure modules in existing large-scale health surveys and cohort studies**, with oversampling of CALD, low-income and high-exposure occupational groups.
29. **Funding community-partnered research**, where organisations like AMAN work alongside universities and agencies to design studies, recruit participants ethically and communicate findings back to communities in accessible ways.

---

11. Any other related matter: trust, transparency and environmental justice (Term of Reference i)

For many of the communities AMAN serves, environmental issues are inseparable from broader questions of trust in institutions. Some key themes we hear include:

- "We were not told." Communities often learn about contamination incidents, new guidelines or industrial approvals after decisions have already been made.
- "We do not understand the documents." Technical reports and consultation papers are rarely translated or summarised in plain language, leaving people reliant on social media, hearsay or sensationalised media coverage.

32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

- "We do not see ourselves in the room." CALD communities are under-represented on advisory panels, in consultation processes and in the scientific workforce, which can lead to blind spots in research priorities and policy design.

Microplastics, toxics and forever chemicals are precisely the kind of complex, uncertain issues where trust and transparency matter most. If information is not shared early, clearly and respectfully, public anxiety can either become paralysing or, conversely, people may disengage and ignore warning signs.

We recommend:

30. **Establishing an Environmental Health Equity Advisory Group** (or expanding existing structures) with representation from CALD, First Nations, disability and low-income communities, to provide ongoing advice on microplastics and toxic exposure policies.
31. **Requiring meaningful community engagement** in environmental impact assessments and major infrastructure projects that may influence microplastic and chemical pollution (for example, wastewater treatment plants identified as significant sources of microplastics).
32. **Investing in capacity-building** for community leaders—training in environmental health literacy, data interpretation and advocacy—so that they can genuinely participate in shared decision-making.

---

12. Conclusion

Microplastics, toxics and forever chemicals present a multi-layered challenge for Australia. The scientific evidence is evolving and, in some areas, uncertain. Yet we already know enough to recognise that:

- Exposures are widespread and often higher in environments where disadvantaged communities live, work and play;
- Vulnerable life stages—pre-conception, pregnancy, early childhood and older age—are likely to be particularly at risk;
- Microplastics and harmful chemicals can interact with existing social and health inequities, deepening disadvantage.

From the perspective of AMAN and the communities we serve, the central question is not whether we wait for perfect evidence, but how we act ethically and equitably in the face of uncertainty. That means:

- Prioritising precaution where feasible, especially for products and environments that affect children and pregnant women;
- Ensuring that CALD communities are informed, engaged and represented in decision-making;

32

Australian Multicultural Acton Network Inc
32 Quandong Street, O'CONNOR ACT 2602
ABN: 40 172 914 431 Assn No: A06217

Mr Ravi Krishnamurthy JP
PRESIDENT

- Aligning Australia's standards and practices with best-practice international approaches, while tailoring them to our local context.

We thank the Committee for the opportunity to contribute to this important inquiry and would be pleased to provide further evidence, participate in hearings or facilitate community consultations if that would assist.

Signed

Mr Ravi Krishnamurthy
President, Australian Multicultural Action Network (AMAN)