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Persistent Organic Pollutants in North Africa:

Research Gaps and Opportunities for Action in Tunisia

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Regional Context

Regional Impact

North Africa faces challenges from legacy and emerging POPs.

Data Deficiencies

Significant gaps exist in data, lab capacity, and enforcement.

Growing Interest

Political interest is increasing (NIP updates, UNEP/MAP).

Tunisia’s National Efforts on POPs:

Actions

- Elimination of ~1,800 tonnes of legacy POP pesticides
- Disposal of ~1,200 tonnes of PCBs + 400 tonnes
- Fire-fighting foam stock (~1.2 million liters) phased out
- PFOS inventories: 4.9M kg imported, halted 2011
- National Implementation Plan (NIP): Inventories, training, draft regulations

Monitoring

- Tunisia monitors legacy POPs like DDT and PCBs through Stockholm Convention programs
- Participation in GMP monitoring (PFOS)
- Air sampling in Tunis show among Africa's highest PCB levels (~419 ng/PUF)

Emerging POPs: New Risks, Sparse Data

PFAS in Seafood

First PFAS data in Tunisian seafood: (2.24 ng/g dw).

Flame Retardants

Sediment analyses reveal old and novel flame retardants.

Monitoring Needs

Routine monitoring is absent;

SCCPs are virtually unstudied.

PFOS data gaps

for aviation fluids & electronics waste.

Limited stakeholder cooperation

- No access to Industrial data
- Waste sector not tracked

Laboratory & Infrastructure Gaps

Limited Instruments

High-end instruments like LC-MS/MS are rare.

Analytical Capacity

Few labs confidently analyze PFAS or SCCPs.

Regional Centers

Tunisia's NIP calls for regional Centers of Excellence.

Policy Links to Circular Economy

1

Waste Management

Tunisia aligns POPs with waste management strategies.

2

Missing Links

Recycled plastics lack flame retardant screening.

3

Reintroduction Risk

Wastewater reuse doesn't monitor PFAS, risking re-contamination.

Key Research Gaps

1. **Insufficient regional data & environmental monitoring**
2. **Lack of longitudinal health & exposure studies**
3. **Weak toxicological & risk assessment capacity**
4. **Scarce research on local POPs sources & pathways**
5. **Limited studies on co-exposure & emerging POPs**
6. **Low development of greener, safer, local alternatives**

Recommendations for Regional Action

Equip and train

National labs – prioritize MS capacity

Create regional hubs

for POPs monitoring and analysis

Include PFAS/SCCPs

in national NIPs and action plans

Mainstream POPs

Incorporate into circular economy policies.

Standardize Monitoring

Use UNEP and Stockholm tools.

Engage Universities

Boost academic research and awareness.

From Detection to Action

We must move from sporadic studies to a structured, data-driven response.

With global partner support, the region can close data gaps and prevent re-contamination.

This protects both people and ecosystems, building a POPs-safe future.