DDT

Stockholm Convention Effectiveness Evaluation 2023 Highlights

Background information

DDT is an organochlorine insecticide initially used to combat malaria, typhus, and other insect-borne human diseases. Subsequently it was used as an agricultural and household pesticide.

The best-known toxic effect of DDT is egg-shell thinning among birds, especially birds of prey. The short-term acute effects of DDT on humans are limited, but long-term exposures have been associated with chronic health effects. DDT has been detected in breast milk, raising serious concerns about infant health.

DDT is currently listed in Annex B to the Stockholm Convention with its production and/or use restricted for disease vector control purposes when no equally effective and efficient alternative is available, and in accordance with related World Health Organization (WHO) recommendations and guidelines.

Measures to reduce and/or eliminate releases releases

In 2022, the DDT expert group estimated that the total global production of DDT for vector control had declined by 83 % in 2020 to 1,071 tonnes of active ingredient (a.i) in comparison to 2005, when the DDT expert group had estimated global production at 6,269 tonnes a.i.

Only a few countries still use DDT for disease vector control. In 2007, the DDT expert group estimated the total global use of DDT at 5,000 tonnes a.i. This decreased to 1,061 tonnes a.i. in 2020, representing a 79% decline. India, which has been the largest DDT user by far, and the only remaining DDT producer since 2008, has made commendable progress in malaria control and in phasing out the use of DDT. Its use showed a 53% decline from 1,491 tonnes a.i. in 2018 to 695 tonnes a.i. in 2020. Meanwhile, the use of DDT in the remaining DDT-using countries in southern Africa on aggregate has been relatively stable since 2012.

Data available suggest that, despite the significant global estimates of obsolete stocks, there has been little progress in the environmentally sound disposal of DDT since the entry into force of the Convention, particularly since the first cycle of the evaluation. This calls for a global strategy to promote sound disposal of DDT.

Export of DDT was reported only by India and during the period 2018-2020, DDT was exported to five African countries. Most export of DDT took place in 2018. Export of DDT for use (and likely also import for use) has declined substantially since the first effectiveness evaluation, which is reflected in the pattern of DDT use in the African Region.

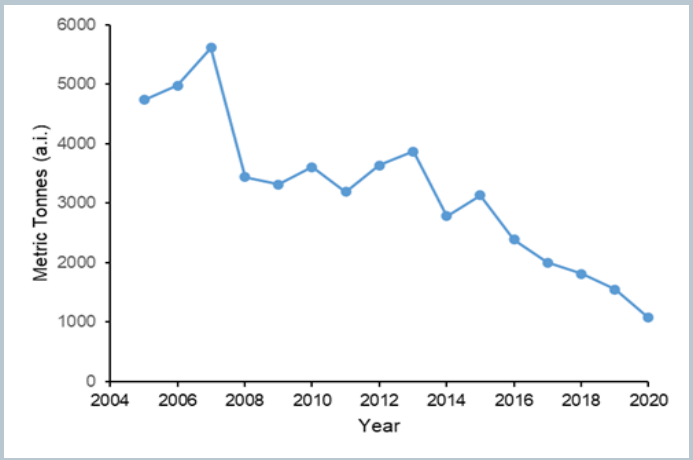

Figure 1. Global annual production of DDT since the year the Stockholm Convention entered into force *(Source: UNEP/POPS/COP.11/INF/36)*

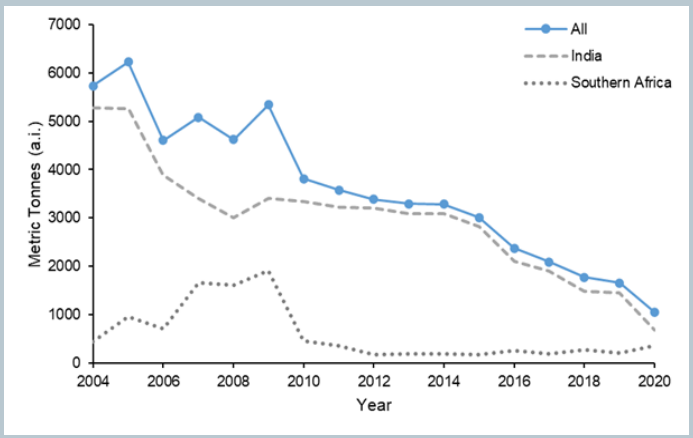

Figure 2. Global annual use of DDT since the year the Stockholm Convention entered into force (Source: UNEP/POPS/COP.11/INF/36)

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Changes in Concentrations Measured in the Environment and in Human Populations

The third global monitoring report shows that levels of DDT measured in air from the Africa, Asia-Pacific, Eastern Europe and Western European and Others Group regions have largely decreased overall.

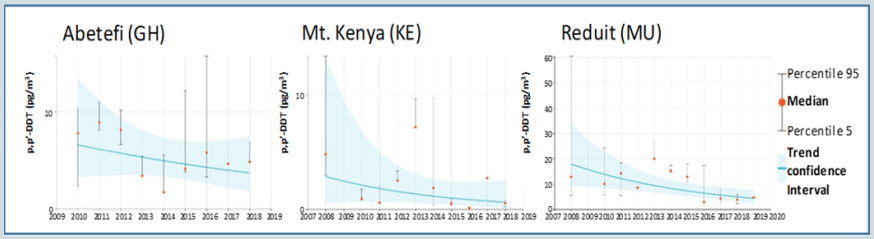

Figure 3. Temporal trends of p,p'-DDT concentrations (pg/m^3) measured in air at 3 sites in the African region *(Source: UNEP/POPS/COP.11/INF/38)*

The levels of DDT are also decreasing over time in human milk and/or blood. Over the five rounds of the human milk survey, the median of the DDT complex concentrations of all country results showed a decrease of 72 % from the 2000–2003 period (median for 16 countries: 445 µg/kg lipid) to the 2016–2019 period (median for 43 countries: 125 µg/kg lipid). In all regions, the median of the DDT complex concentrations was higher in the 2000–2003 period than in the 2016–2019 period.

In regions with sufficient data to evaluate changes over time, levels of initial POPs such as DDT, have generally declined in human tissues.

A significant body of data on POPs in non-core-media such as snow, ice, sediment, soil and biota are available for some parts of the world such as the Great Lakes, the Arctic, the Baltic, and Japan. The changes over time, where available, indicate that for the POPs listed before 2009, such as DDT, significant decreases have been observed over the past three decades.

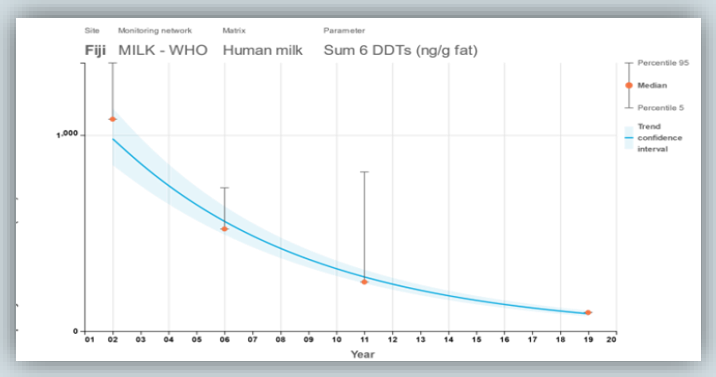

Figure 4. Temporal trend (2002–2019) of DDT (6 isomers) concentrations (ng/g fat) in human milk in Fiji *(Source: UNEP/POPS/COP.11/INF/38)*

Changes since the First Effectiveness Evaluation

Since the first effectiveness evaluation the pace of decline in the use of DDT, and therefore the associated manufacture, imports and exports has continued, with a 60% reduction in use between 2014 and 2020. The number of Parties indicating they have adopted measures to control DDT continues to increase slightly from 70% in the first effectiveness evaluation to 80%.

In 2017, WHO launched the Global Vector Control Response 2017–2030 (GVCR), which is a strategy that urges countries to establish effective, locally adapted sustainable vector control across diseases as a fundamental approach to preventing and eliminating disease and responding to outbreaks.

In the past decade, new vector control insecticide products for indoor residual spraying and insecticide-treated nets have been brought to the market through the Innovative Vector Control Consortium. These products offer alternatives to DDT for disease vector control. Recent data indicate that several countries in the African Region, including in countries that previously used DDT, have adopted the new insecticide products for indoor residual spraying for malaria control.

Recommendations of the Effectiveness Evaluation Committee

✓ Parties and others with the capacity to do so should be invited to provide technical and financial assistance to Parties, including through agencies such as the GEF, and the Global Fund to Fight AIDS, Tuberculosis and Malaria, with due priority accorded to:

- **Reporting by Parties on DDT**, including production, use, import, export and stockpiles and their disposal, and on the use of safer alternatives for indoor residual spraying;
- (**Ensuring adequate national capacity for long-term sustainable vector surveillance** and for research, resistance monitoring and implementation of pilot testing and the scaling up of existing alternatives to DDT;
- **Sound disposal of obsolete DDT stockpiles**, in particular where stockpiles pose immediate risks to human health and the environment.

✓ Parties should be invited to explore approaches that speed up the environmentally sound disposal of obsolete stocks such as working with regional centres to establish a local waste management industry for environmentally sound disposal of DDT and other pesticides within a geographic region or subregion.

The report of the DDT expert group on the production and use of DDT for disease vector control and on the intersessional process of consultations on a possible phase-out plan, including the recommendations by the DDT expert group, can be found in document UNEP/POPS/COP.11/INF/8.

For more information on the second effectiveness evaluation of the Stockholm Convention, please refer to documents UNEP/POPS/COP.11/19/Add.1 and UNEP/POPS/COP.11/INF/36.

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