

## Countries move toward more sustainable ways to roll back malaria

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The United Nations Environment Programme and the World Health Organization, in partnership with the Global Environment Facility, today announced a rejuvenated international effort to combat malaria with an incremental reduction of reliance on the synthetic pesticide DDT.

Ten projects, all part of the global programme "Demonstrating and Scaling-up of sustainable Alternatives to DDT in Vector Management", involving some 40 countries in Africa, the Eastern Mediterranean and Central Asia are set to test non-chemical methods ranging from eliminating potential mosquito breeding sites and securing homes with mesh screens to deploying mosquito-repellent trees and fish that eat mosquito larvae.

The new projects follow a successful demonstration of alternatives to DDT in Mexico and Central America. Here pesticide-free techniques and management regimes have helped cut cases of malaria by over 60 per cent.

The success of the five year-long pilot indicates that sustainable alternatives to Dichloro-Diphenyl-Trichloroethane (DDT) are emerging as cost effective solutions that may be applicable regionally and globally.

The Integrated Vector Management (IVM) strategy promoted by the World Health Organization (WHO) provides the framework to include these measures in combinations of interventions adapted to differing local circumstances.

Allied to measures such as improved health care, monitoring and education the findings could set the stage for meeting the twin aims of achieving the health-related and environmental Millennium Development Goals (MDGs) by 2015 while also ridding the world of the persistent organic pollutant DDT.

The initiatives come amid long-standing and growing concern over the use of DDT and evidence that in many countries there is increasing mosquito resistance to the pesticide.

However concern over DDT is matched by concern over the global malaria burden in which close to 250 million cases a year result in over 880 000 deaths. Thus any reduction in the use of DDT or other residual pesticides must ensure the level of transmission interruption is, at least, maintained.

The international community has, under the Stockholm Convention, agreed to ban a "dirty dozen" of persistent organic pollutants including, ultimately, DDT on environmental and health grounds.

However, a specific and limited exemption was made for the use of DDT to control malaria, because it was recognized that in some situations adequate alternative control methods were not currently available.

The aim of the new projects, a major initiative of the Global Environment Facility (GEF) with close to \$40 million funding, being spearheaded by WHO and the UN Environment Programme (UNEP), is to achieve a 30% cut in the application of DDT world-wide by 2014 and its total phase-out by the early 2020s if not sooner, while staying on track to meet the malaria targets set by WHO.

Achim Steiner, UN Under-Secretary General and UNEP Executive Director which hosts the secretariat of the Stockholm Convention, said: "The new projects underline the determination of the international community to combat malaria while realizing a low, indeed zero DDT world".

"Today we are calling time on a chemical rooted in the scientific knowledge and simplistic options of a previous age. In doing so, innovative solutions are being catalyzed and sustainable choices brought forward that meet the genuine health and environmental aspirations of a 21st century society".

“WHO faces a double challenge - a commitment to the goal of drastically and sustainably reducing the burden of vector-borne diseases, in particular malaria, and at the same time a commitment to the goal of reducing reliance on DDT in disease vector control”, said Dr Margaret Chan, WHO Director-General.

WHO sees these projects in the context of IVM which it promotes as the approach of choice to control transmission of malaria and other vector-borne diseases. A key element of IVM is a solid evidence base for the effectiveness of combinations of locally-adapted, cost-effective and sustainable vector-control methods. This approach will facilitate sustainable transition away from DDT.

Monique Barbut, Chief Executive Officer and Chairperson of the Global Environment Facility, the financial arm of the convention and which is funding over half of the initiative, said: “The GEF is investing in these projects to take decisive action toward ridding the world of dangerous chemicals now and forever. The dividends from these investments will mean a cleaner, safer and sustainable environment for future generations.”

The first of the demonstration projects, which began in 2003, has been coordinated by the Pan American Health Organization of the WHO in partnership with a wide range of bodies including UNEP, the Commission for Environmental Cooperation, and the eight country governments.

It has involved the Ministries of Health of Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama where DDT has been extensively sprayed in homes and onto water bodies in the region order to combat malaria since the 1950s.

More than 89 million people in Mesoamerica live in areas suitable for malaria transmission of which over a third or 23.5 million live in highly endemic areas.

The work, involving just under \$7.5 million from the GEF and co-financing of \$6.4 million, has pioneered the demonstration of “integrated vector control” methods working with 202 communities of 50 municipalities in the eight countries.

The work covered close to 160 000 people directly and an estimated 6.8 million indirectly representing nearly 30 per cent of those in the highly effected areas.

Various malaria control strategies and techniques have been tried and evaluated including:

- community participation as central axis of the control activities;
- equity prioritizing rural areas with mostly indigenous populations in critical poverty and the persistence of malaria;
- a multidisciplinary and multisector approach involving the environment and education sectors to the health sector;
- combination of control methods according to the Global Strategy in the Fight Against Malaria and the Roll Back Malaria initiative;
- destruction of parasites in the population through rapid diagnosis and treatment including improved counseling and supervision of oral treatments;
- reduction of contact between mosquitoes and people via treated bed nets; meshes on doors and windows; the planting of repellent trees like neem and oak and the liming of households;
- control of breeding sites by clearing vegetation, draining stagnant water ditches and channels and the use of biological controls such as fish and bacteria in some countries;
- elimination of places near houses that attract and shelter mosquitoes through, for example the cleaning and tidying up of areas in and around homes alongside the promotion of personal hygiene.

The project achieved a 63 per cent reduction in malaria cases and a more than 86 per cent cut in ones linked with *Plasmodium falciparum*, the malarial parasite that causes the most severe kind of infection and the highest death rate globally.

The researchers point to other benefits including the strengthening of national and local institutions involved in combating malaria; improved scientific data on DDT contamination of communities and action on stockpiles of persistent organic pollutants.

During the project more than 136 tons of DDT and over 64 tons of chemicals such as toxaphene and chlordane were pin pointed.

These stockpiles are scheduled for export and destruction under a separated but related UNEP treaty, the Basel Convention on transboundary hazardous waste.

Projects are now going global with several new, five year regional demonstrations of sustainable alternatives to DDT launched, or set to be launched over the next 12 months.

These include one involving Eritrea, Ethiopia and Madagascar and a larger regional initiative with Djibouti; Egypt; Jordan, Morocco; the Islamic Republic of Iran, Sudan, Syria and Yemen.

A third project is involving Georgia, Tajikistan and Kyrgyzstan in the Southern Caucasus and Central Asia with a possibility of including relevant neighboring countries as well.

Another is focusing on Kenya, Tanzania and Uganda in order to develop a Decision Taking Tool for governments allowing them to evaluate health, social and environmental impacts and policy tradeoffs.

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