



World Health
Organization

KEEPING THE VECTOR UT

**Housing improvements
for vector control and
sustainable development**

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Keeping the vector out: housing improvements for vector control and sustainable development

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Acronyms and abbreviations

DDT	dichlorodiphenyltrichloroethane
IVM	integrated vector management
RBM	Roll Back Malaria Partnership
SDGs	Sustainable Development Goals

Key messages

- **More than 80% of the world's population is at risk** from at least one vector-borne disease, and more than half at risk from two or more. Malaria alone accounts for around 429 000 deaths annually, while close to 100 million fall ill with dengue every year. These, and other vector-borne diseases, account for 17% of the global burden of all infectious diseases and impede economic development, well-being of populations and prosperity. These diseases disproportionately affect the poor.
- WHO and its Member States recognize the need for implementation of relevant vector control interventions that go beyond the health sector and **strengthen multisectoral approaches – with housing being a key part of the global response**.
- The evidence shows that **poor quality housing and neglected peri-domestic environments are risk factors** for the transmission of malaria, arboviral diseases (e.g. dengue, yellow fever, chikungunya, Zika virus disease), Chagas disease and leishmaniasis.
- **It is time** to highlight the role improving human habitation can play in the fight against vector-borne diseases. The movements of populations, the rapid urbanization of the 21st century and the economic development experienced in many low- and middle-income countries are drivers for the construction of new housing and the planning and redesign of urban settlements. At the same time, inequities in power and wealth fuel the growth of slums and informal settlements.
- The principle of **“building the vector out”** is at the core of effective housing interventions to prevent vector-borne diseases. The entry of disease-transmitting vectors into human habitation can be effectively prevented by screening windows, doors and eaves of houses, by fitting ceilings, and by reducing the vectors' indoor hiding and breeding places, such as cracks and crevices in walls, floors and roofs. Such building strategies need to be accompanied with improved ventilation, to keep the occupants cool in hot climates, and increased use of insecticide-treated nets.
- In addition, **reducing breeding sources** around houses can limit vector abundance – by removing sources of stagnating water (e.g. gutters and drains) and minimizing access to water storage containers through the use of covers or screens. Key to this is a reliable supply of piped water, adequate sanitary facilities, rainwater disposal and services to safely manage faecal wastes. However, preventing vectors from accessing or breeding in water storage containers may not always be possible or fully effective. In such circumstances, using larvicides may be considered, including for drinking-water storage.¹
- These interventions may help **reduce morbidity, mortality, human suffering** and thereby promote economic growth, well-being and the reduction of poverty. Creating sustainable vector-proof habitats and establishing a comprehensive management plan can help reduce the dependence on insecticides (thereby helping to manage insecticide-resistance) and bring about sustainable change – vital to prevent the re-introduction into disease-free areas.
- **A number of eco-benefits** are associated with positioning these interventions at the core of integrated vector management. A reliable and safe piped water supply can support the reduction of waterborne diseases. Improving housing can also create jobs and stimulate investment. Addressing health risks associated with housing is likely to particularly benefit low-income and vulnerable groups, as these are more likely to live in inadequate housing. Furthermore, involving housing ministries and other housing actors can yield additional capacities and financial resources

¹ The WHO Prequalification Team, and, previously, the WHO Pesticide Evaluation Scheme (WHOPES), coordinates the testing and evaluation of pesticides used for public health. There are currently seven larvicidal compounds listed for the control of container-breeding mosquitoes. Further information can be found at: http://www.who.int/whopes/Mosquito_larvicides_25_April_2017.pdf?ua=1 and in the WHO Guidelines for drinking-water quality at: http://www.who.int/water_sanitation_health/water-quality/guidelines/en/

Introduction

Vector-borne diseases are responsible for 17% of the global burden of communicable diseases and more than 500 000 deaths annually. The ambitious global targets for the control of vector-borne diseases come in the context of the (re-)emergence of diseases, increasing resistances to insecticides and uncertainty related to the financing of global vector control efforts.

The United Nations 2030 Agenda with its related Sustainable Development Goals (SDGs), the New Urban Agenda adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in Quito in 2016 and WHO's Global vector control response 2017–2030 (WHO, 2017a) emphasize the value of elevating multisectoral actions and strategies that extend beyond the health sector to the core of integrated vector control.

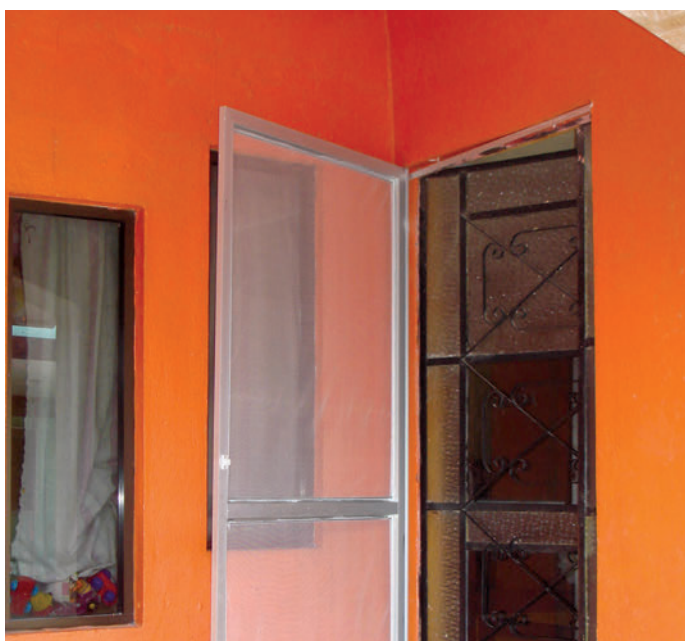
This policy brief underlines the important role housing conditions have in the transmission of vector-borne diseases and showcases interventions and policies the housing sector can contribute to effective, integrated and intersectoral vector-borne diseases management.¹

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