



# Urgent Call for Action: Avoiding Spread of Mosquito-Borne Diseases as a Major Public Health Problem

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Mosquitoes are the most important vectors of pathogenic organisms. Diseases like malaria, dengue fever, yellow fever, zika and West Nile encephalitis have emerged or re-emerged in several countries of the world during the past decades [1-4].

These diseases have been ranked by World Health Organization (WHO) as the most important tropical diseases in the world because each year, insects and other vectors transmit infectious pathogens to more than one billion people, causing more than 700,000 deaths worldwide [5]. The impact of these diseases on human and animal is enormous. They affect productivity and cause a vicious spiral of poverty and disability and in another hand affect food production and contribute to economic lost in different ways [6]. The distribution and seasonality of many of these diseases may be influenced by climate change. Mosquitoes are sensitive to temperature, humidity, rainfall patterns, for example when the temperature increases would tend to accelerate mosquito life cycles and would also decrease the incubation period of the parasite or virus. The weather patterns and other aspects of climate change can contribute that the mosquito's diseases will be increase [7]. These observed climatic changes have led to further water storage with accompanying poor water protection and scanty community participation creating more breeding sites for mosquitoes like *Aedes aegypti* principal responsible of arbovirus transmission like dengue, zika, chikungunya and others [8]. For malaria vectors the rainfall patterns bring several temporal natural breeding sites and contribute to malaria transmission<sup>4</sup>. Impacts on health would entail the emergence of a disease in new areas as well as the extension of the transmission season in areas where it is present [4,9], besides will be to changes the geographical range of these vector/borne diseases for example the chikungunya outbreaks in Europe [10].

Despite centuries of control efforts, the past three decades have witnessed a dramatic spread of many mosquito-borne

diseases worldwide. The acceleration of urbanization, global warming, the intensification of intercontinental trade and travel, the co-evolution and adaptation between pathogens and mosquito vectors, the development of insecticide resistance, the lack of qualified personnel in entomology for a quick and timely response to vector control and the lack of effective control measures have greatly contributed to the mosquito borne diseases increase worldwide [5]. This situation has challenged the health personnel involved in controlling the vectors of these diseases, but it's necessary to achieve participation levels in factors such as political will, the entomological surveillance, standardization of the vector control activities, the formation of the team groups between different ministries and different sectors for to develop the mosquitoes control in the majority of the countries involved in this public health problem in the world.

This global health problem brings us together to all those who every day work on the improvement of health standards in the population in this field to provide new knowledge about biology, ecology, vector-man contact or animal-vector, to achieve the design of policies of integrated control of vectors specifically of mosquitoes to help stop the increase of these communicable diseases.

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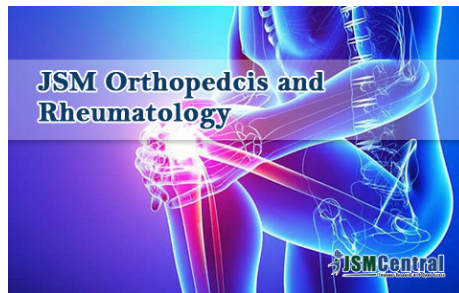
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