

Strengthening Preparedness for Arboviral Disease

NASEM Arbovirus Workshop

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An Institute of



Environmental Management, Sanitation and Hygiene

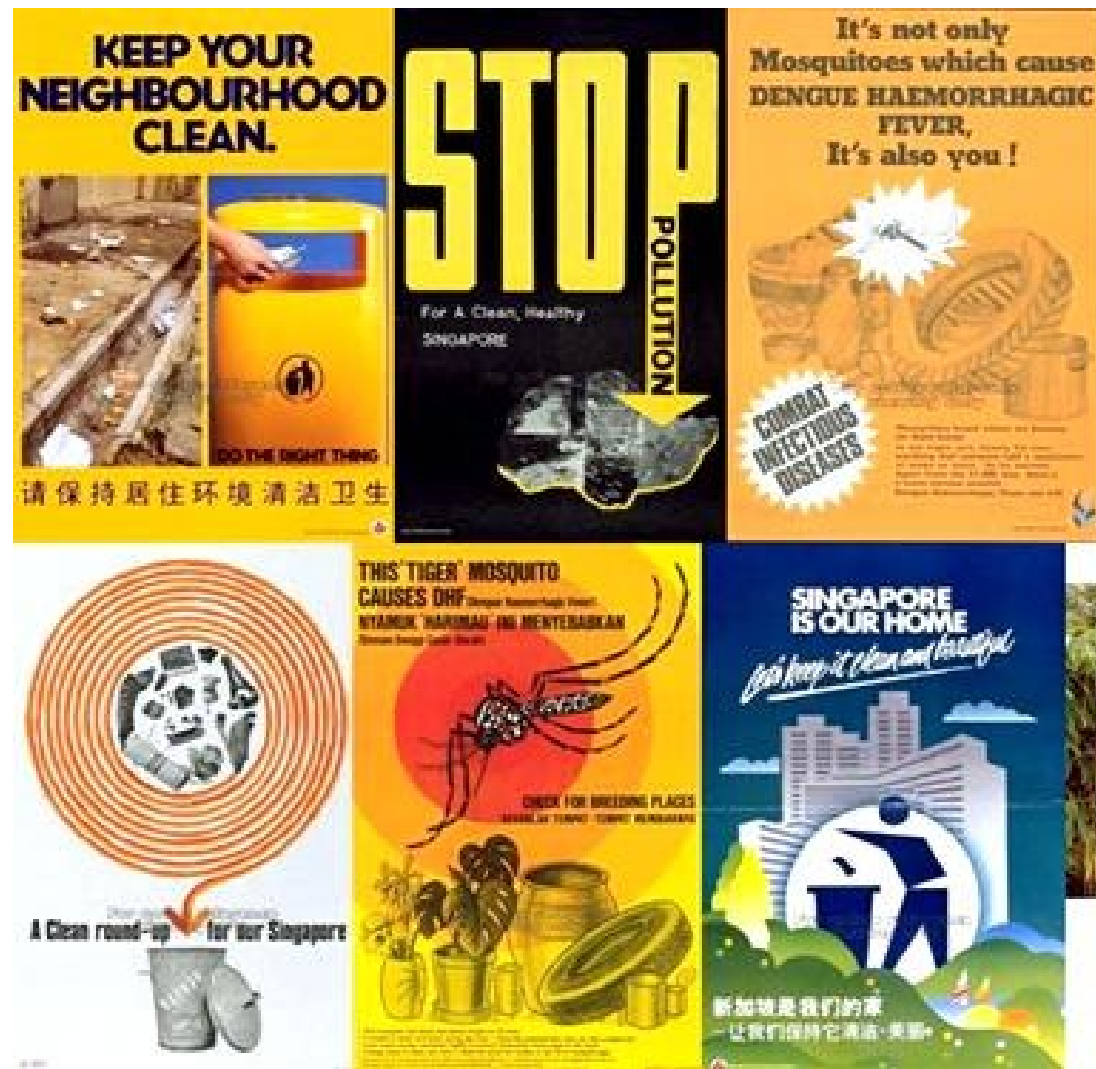


2020



Mid 1965

Photo credit: VINTAGE EVERYDAY



Environmental Management - Design modification

Redesign
bamboo
pole
holders



Eliminate
roof gutters



Intersectoral Collaboration – Beyond One Health

Interagency Dengue Task Force for Vector Control

- People:



- Private:



- Public:



Town Councils

One Health Coordinating Committee and working Group

Ministry of Health
National Environment Agency
NParks
Singapore Food Authority
PUB (water agency)

Government agencies –
academia for research
and risk assessment

Field operation -
Laboratory – Clinicians
for response

Use of technology

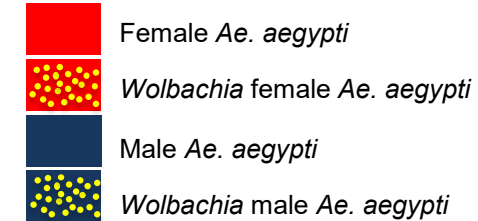
Without *Wolbachia*

Wild type female Wild type male



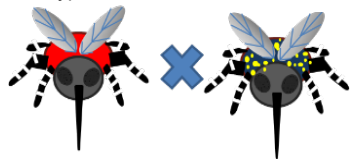
Multiplication of *Ae. aegypti*

Legend



#1: Suppression approach (Insect Incompatibility Technique)

Wild type female *Wolbachia* male



Cytoplasmic incompatibility
Reduce vector population

Countries using the suppression approach:

Singapore

USA

China

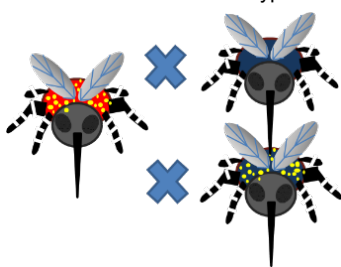
French Polynesia

Thailand

#2: Replacement approach

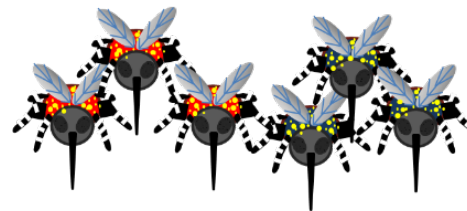
Wolbachia female

Wild type or *Wolbachia* male



Population carries *Wolbachia* as a result of maternal transmission

Carries *Wolbachia*



Partially block dengue transmission
Reduce vector competency

Countries using the replacement approach:

Malaysia

World Mosquito Programme

Australia

Indonesia

Vietnam

Sri Lanka

Fiji

Kiribati

New Caledonia

Vanuatu

Brazil

Colombia

Mexico