



World Health
Organization

Entomology and Vector Control Landscape

**Global Alliance
Steering Committee
7 May 2013**

Michael Macdonald, ScD
Global Malaria Programme



Malaria Burden

Between 2000 and 2010:

malaria mortality rates fell by 26% globally.

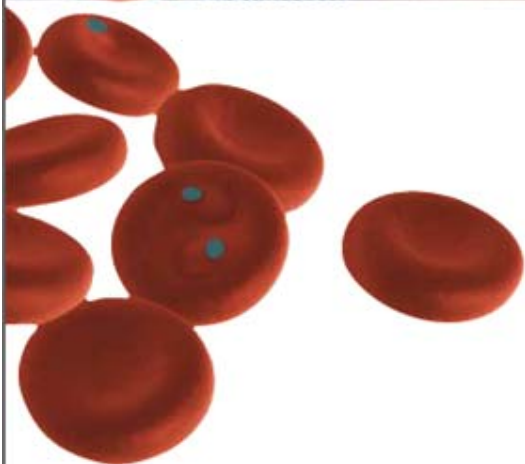
Fell by 33% in the WHO African Region

≈ 1.1 million malaria deaths were averted,
primarily due to scale-up of interventions.



2012:

**A year of
fragile gains**




**WORLD
MALARIA
REPORT 2012**



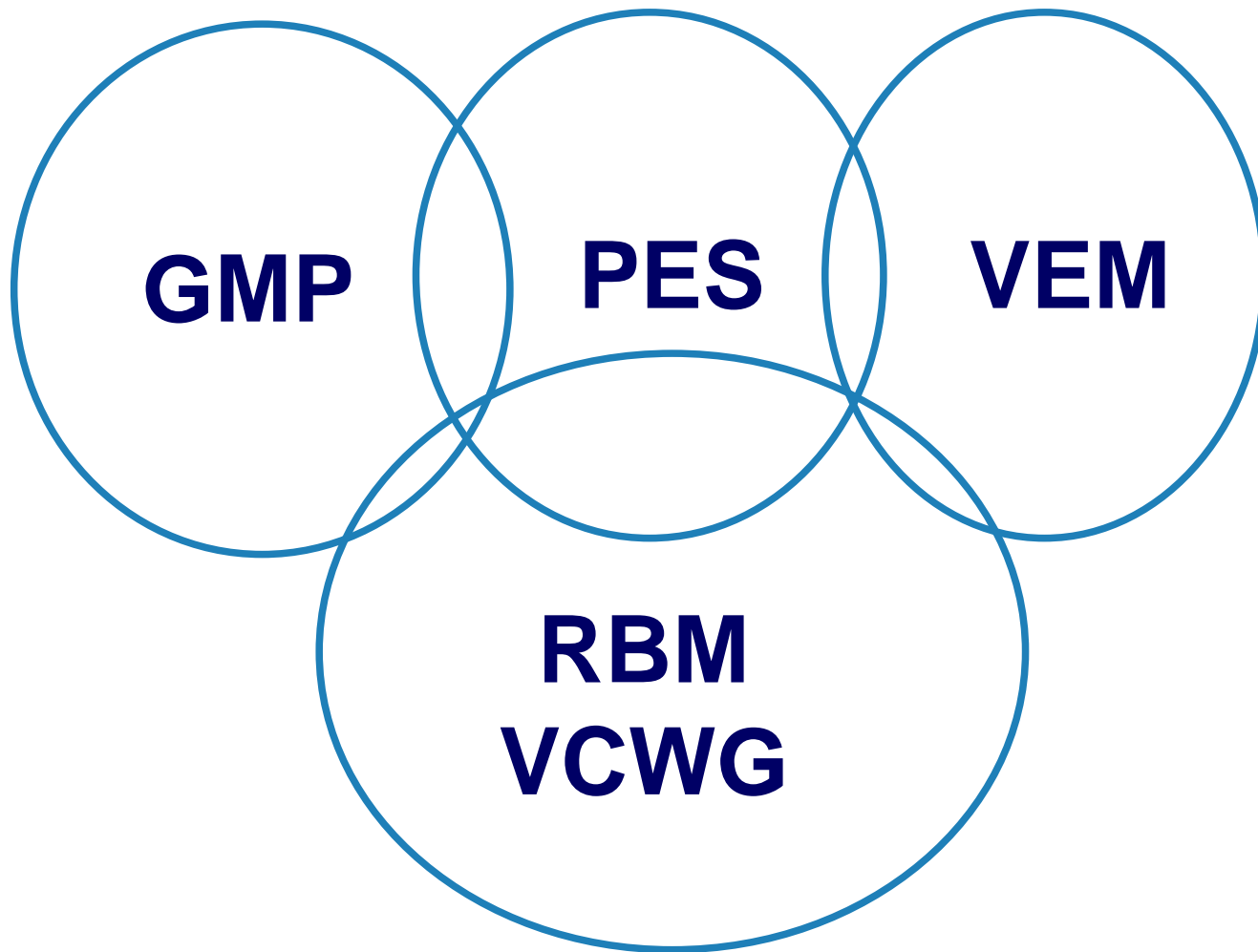
Challenges to Maintaining Gains

- ❖ **Insecticide resistance**
- ❖ **Maintaining coverage in constrained financial times**
- ❖ **Entomological capacity**

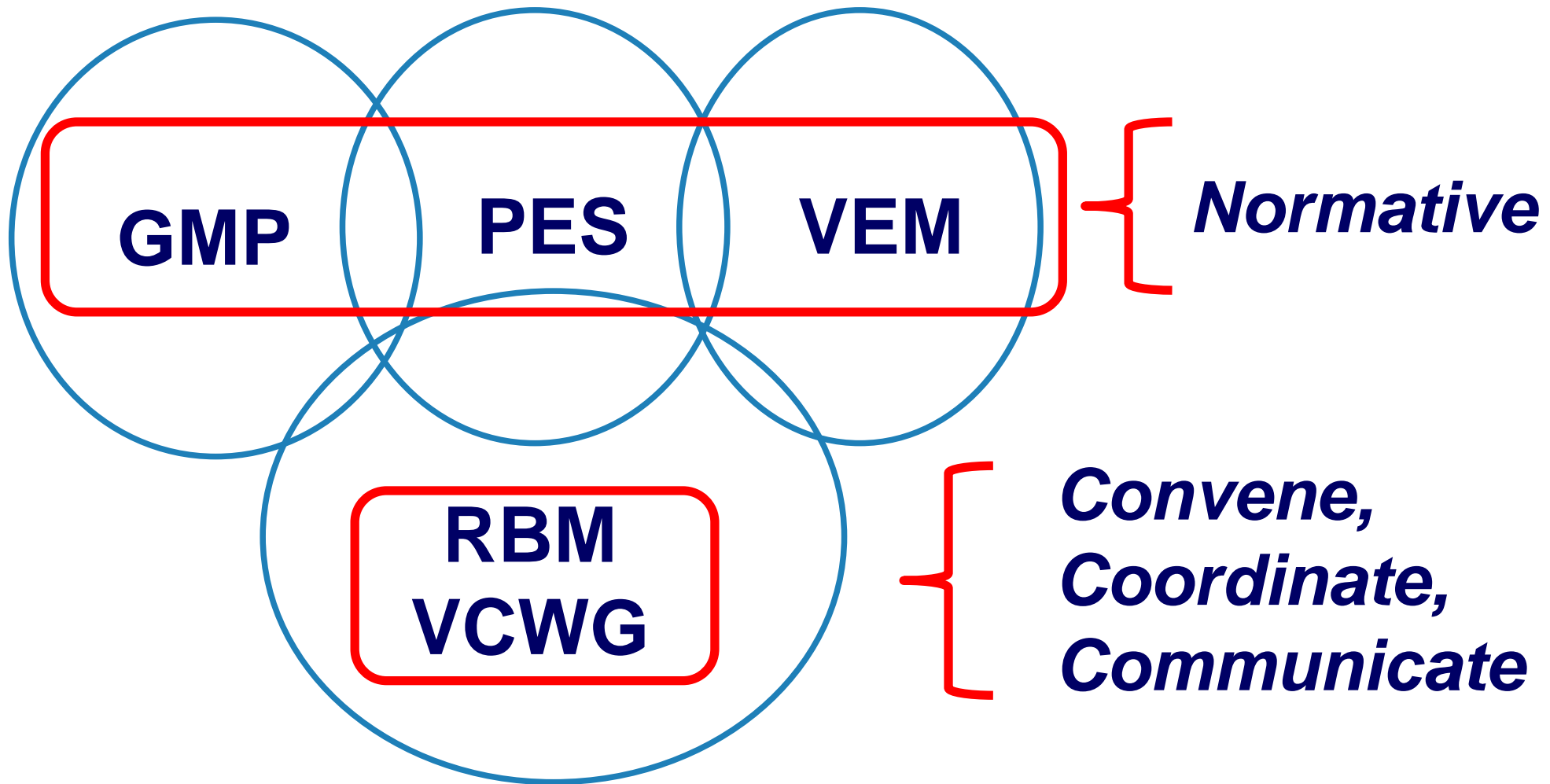
DDT Expert Group Recommendations

4. Countries and partners should be encouraged to evaluate new insecticide formulations as suitable alternatives to DDT in IRS;
5. Countries should undertake further research and implementation of non-chemical methods and strategies for disease vector control to supplement reduced reliance on DDT;
6. Funding to support systems and institutional capacity to train and support skilled staff for entomological monitoring, operational research, evidence-based decision-making and to monitor programme performance;
7. Funding to increase the national policy and management capacity for vector control and QA for performance and impact

Entomology and Vector Control Landscape



WHO and RBM: complementary functions



WHO Global Malaria Programme

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Malaria

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New publication: IRS operational manual



23 April 2013 – The WHO Global Malaria Programme has released a new operational manual on indoor residual spraying (IRS). The manual has been developed to enhance existing knowledge and skills in this field. It is intended to assist all stakeholders – whether they focus on programme management, entomology, vector control or public health – in the design, implementation and maintenance of high-quality IRS programmes.

Indoor residual spraying: An operational manual for IRS for malaria transmission, control and elimination

The use of DDT in malaria vector control – WHO position statement

Christina Banluta/ WHO

Highlights

[New publication: IRS operational manual](#)

[World Malaria Day 2013](#)

[New publication: Emergency response to artemisinin resistance](#)

Latest news

25 April 2013 – WHO and MMV launch Global Malaria Mapper
A new mapping tool – created in collaboration with the Medicines for Malaria Venture – is now available online, allowing users to create customized maps using data from WHO's *World Malaria Report*.

23 April 2013 – New publication: Test procedures for insecticide resistance monitoring
This publication will guide National Malaria Control Programmes in their routine collection,

World Malaria Report 2012



The *World Malaria Report 2012* contains the latest available data on malaria.

WHO GLOBAL MALARIA PROGRAMME

GLOBAL PLAN FOR INSECTICIDE RESISTANCE MANAGEMENT

IN MALARIA VECTORS



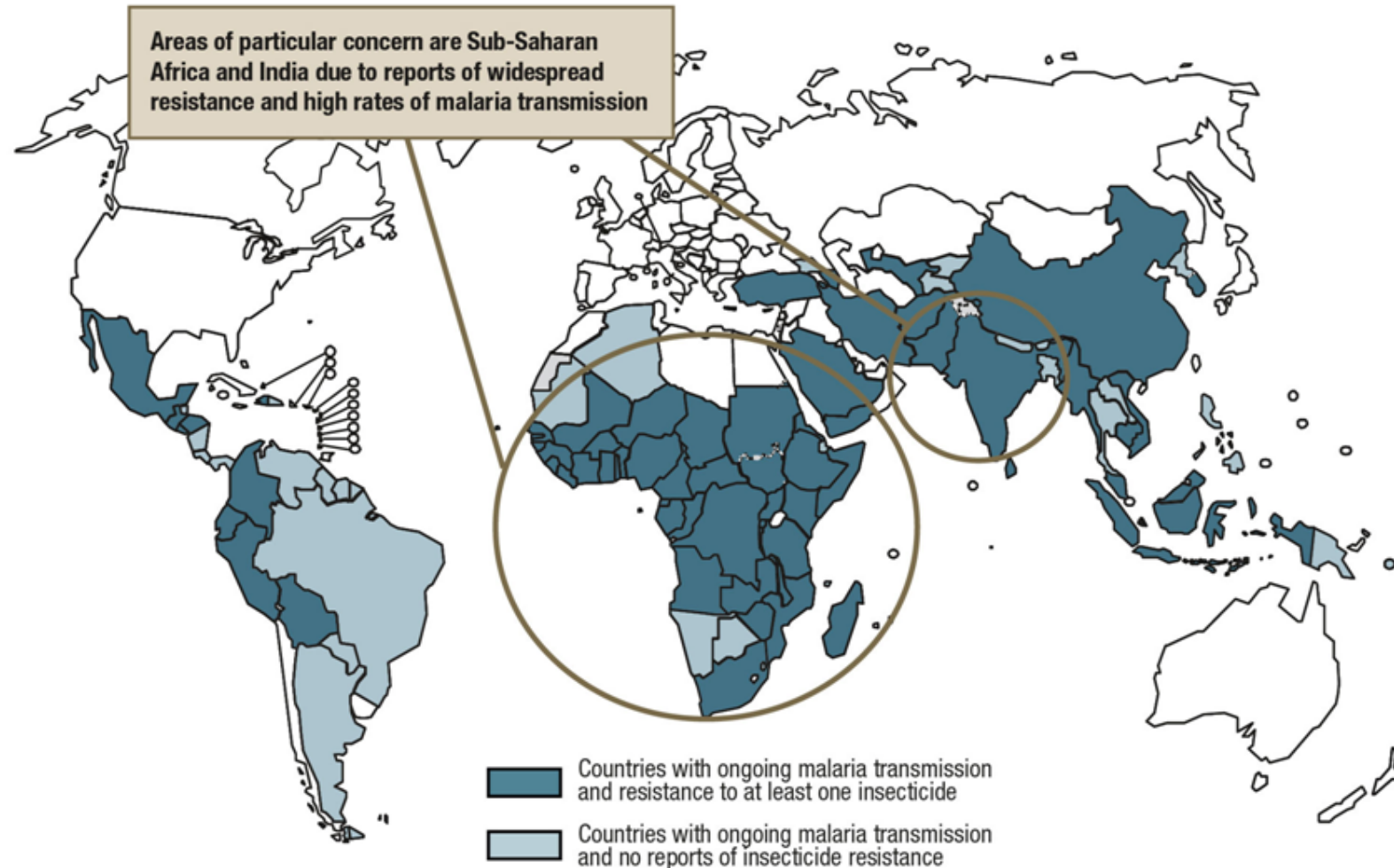
World Health
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GPIRM

Official Launch

15 May 2012

Insecticide resistance identified in 64 countries to date, in most countries to pyrethroids



From WHO regional entomologists in WHO Regional Offices, completed by literature review by the Global Malaria Programme.

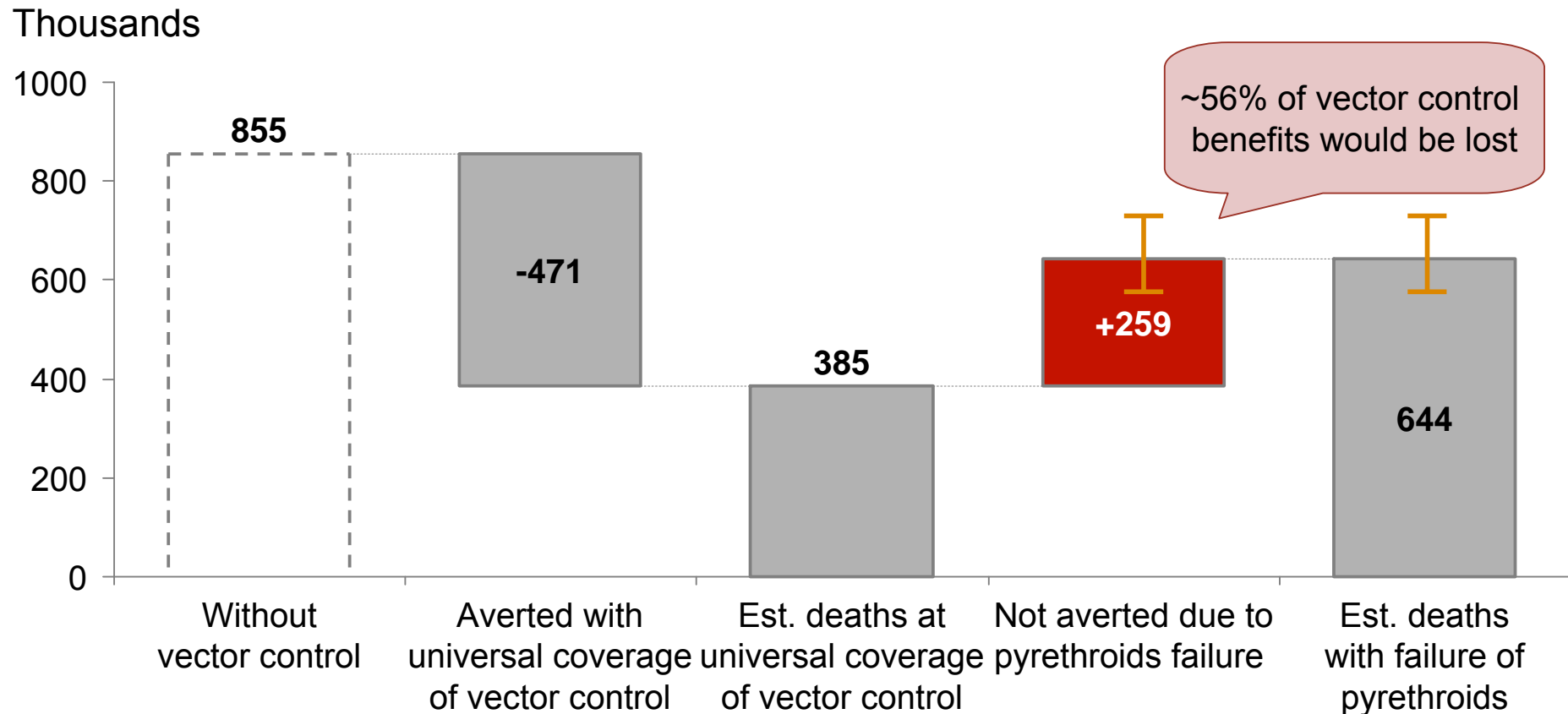
IR, insecticide resistance

1 Includes countries with confirmed susceptibility to all insecticides used and countries where susceptibility testing is not currently conducted or results are not available.

2 The map provides no indication of how widespread resistance is within a country; therefore, a single report of resistance would be sufficient to mark a country as having resistance.

If nothing is done, failure of pyrethroids could lead to ~260,000 additional child deaths annually in WHO African region

Estimated annual malaria deaths of children under 5Y in the WHO African region (with universal vector control coverage)



GPIRM strategy

Short-term (~3 years)

Preserve susceptibility and slow the spread of resistance on the basis of current knowledge, and reinforce monitoring capability and activities

Medium-term (3–10 years)

Improve understanding of IR and tools to manage it, and adapt strategy for sustainable vector control accordingly

Long-term (≥10 years)

Use innovative approaches for sustainable vector control at global scale

Five pillars of strategy

I

Plan and implement insecticide resistance management strategies in malaria-endemic countries.

II

Ensure proper, timely entomological and resistance monitoring and effective data management.

III

Develop new, innovative vector control tools.

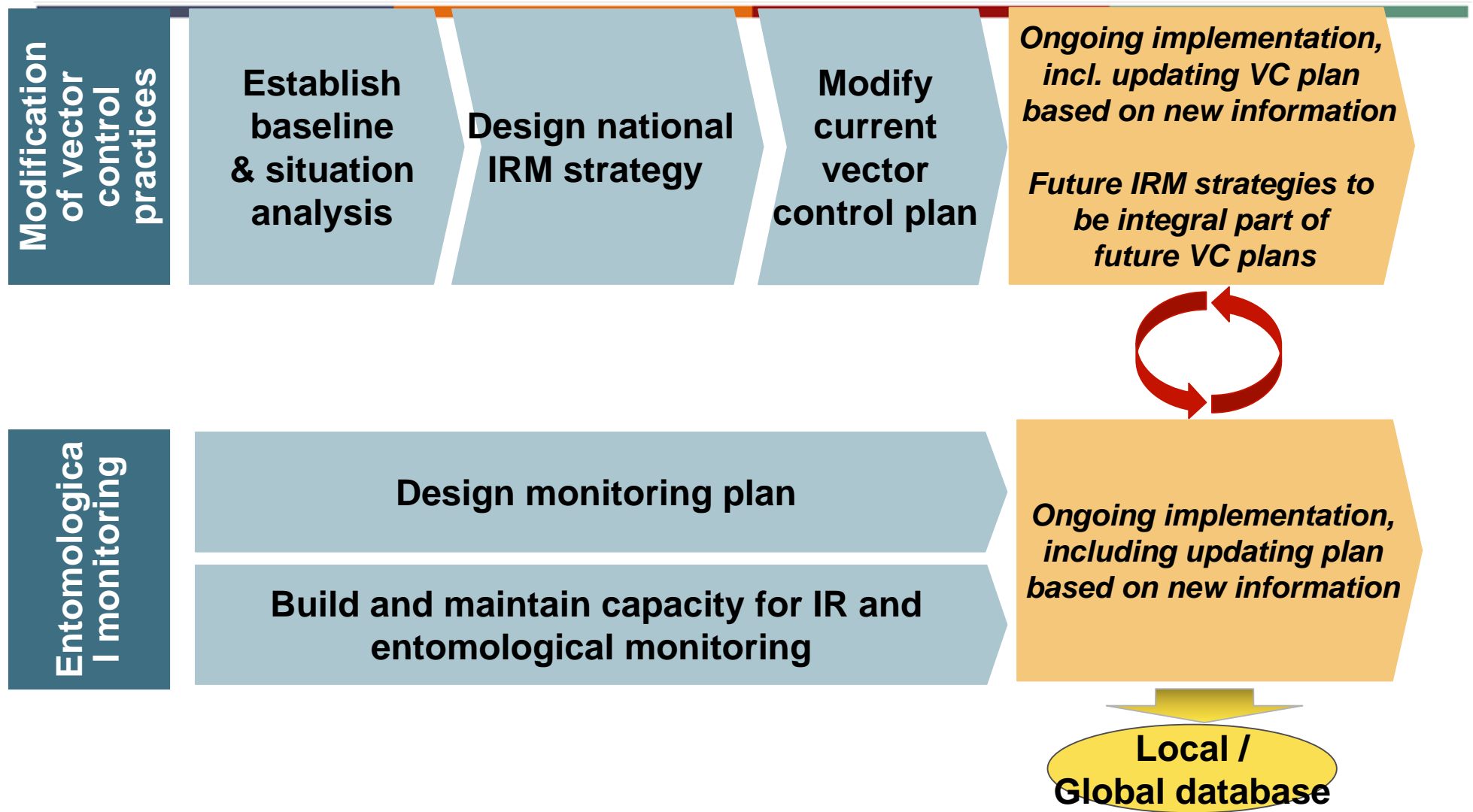
IV

Fill gaps in knowledge on mechanisms of insecticide resistance and the impact of current insecticide resistance management approaches.

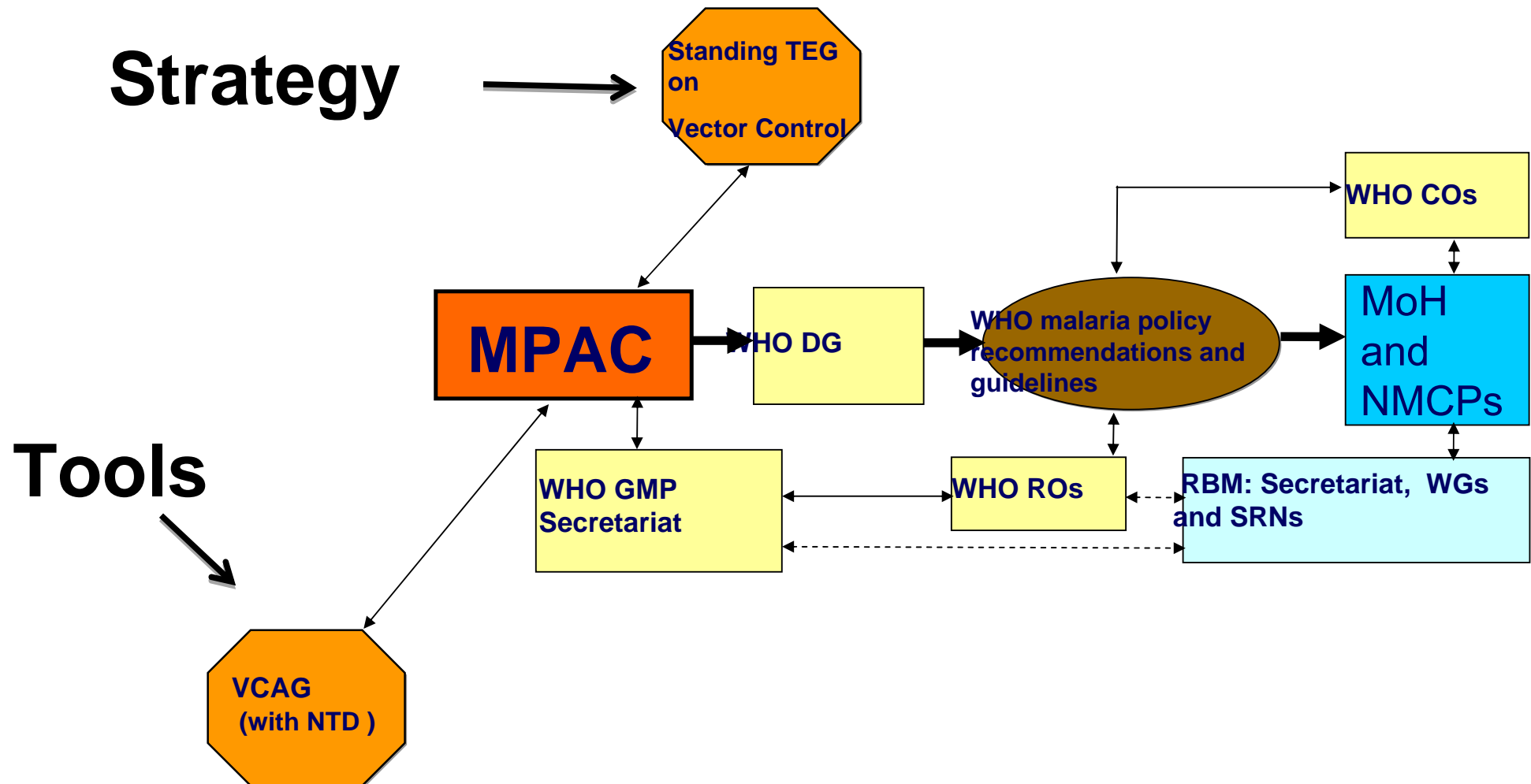
V

Ensure that enabling mechanisms (advocacy, human and financial resources) are in place.

At country-level, two parallel efforts are needed in the short term



Tool Development and Strategy Implementation: The Malaria Policy Advisory Committee



Technical Expert Group Considerations


Topics	Jul 2013 TEG / Sep 2013 MPAC	2014 TEG / Mar 2014 MPAC
Maintenance of universal LLIN coverage	Doc review and recs	
Guidance on estimating life span of nets (durability)	Doc review and recs	
Prioritizations of vector control interventions /allocation of resources	Doc review and recs	
Guidance on capacity building in vector control	Scoping of topic	Doc review and recs
Guidance on combination of tools for early and outdoor biting	Scoping of topic	Doc review and recs
Guidance for entomological surveillance (indicators and how to measure them)		Scoping of topic

TEG Future topics

Topics	Jul 2013 TEG / Sep 2013 MPAC	Feb 2014 TEG / Mar 2014 MPAC
Interim statement on use of IRS and LLIN together	Review and release	
Larval source management guidelines outside Africa – to be outsourced to the regions	Scoping and preparation/sen ding of instructions to regions for adaptation	(doc review and recs; probably later in 2014 but could review from some regions)
Strategy for rollout of larval source management guidelines	Prepare and release	

WHO Pesticide Evaluation Scheme

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WHO Pesticide Evaluation Scheme (WHOPES)

[WHOPES home](#)
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[Quality control](#)
[Guidelines for testing](#)
[Insecticide resistance](#)
[Equipment and application](#)
[Partnership](#)
[Links and resources](#)

WHO Pesticide Evaluation Scheme: "WHOPES"

50 YEARS OF GLOBAL LEADERSHIP



[History – 50 Years of global leadership](#)

In 2010, WHO commemorated 50 years of its Pesticide Evaluation Scheme (WHOPES), established with the approval of the World Health Assembly in 1960. For more than half a century, the programme has been serving as a reference for setting norms and standards for public health pesticides and their life-cycle management.

[DG's speech](#)

50 YEARS OF GLOBAL LEADERSHIP

What is WHOPES and what are WHOPES' objectives?


The WHO Pesticide Evaluation Scheme (WHOPES) was set up in 1960. WHOPES promotes and coordinates the testing and evaluation of pesticides for public health. It functions through the participation of representatives of governments, manufacturers of pesticides and pesticide application equipment, WHO Collaborating Centres and research institutions, as well as other WHO programmes, notably the International Programme on Chemical

Latest news

WHOPES recommended

- insecticides for IRS
- insecticides for ITNs
- insecticides for space spraying
- long-lasting insecticidal mosquito nets (LNs)
- Mosquito larvicides


[Management of public health pesticides](#)



[Guidelines for procuring public health pesticides](#)
Ref: WHO/HTM/NTD/WHOPES/2012.4 | [French](#) (web only)

WHO Vector Ecology and Management

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Neglected tropical diseases

[Neglected tropical diseases](#)
[Diseases](#)
[Preventive chemotherapy and transmission control](#)
[Innovative and intensified disease management](#)
[Vector ecology and management](#)
[Neglected zoonotic diseases](#)

Vector Ecology and Management (VEM)



Vector-borne diseases (VBDs) account for 16 % of the estimated global burden of communicable diseases

Vector control is an important component in the prevention and control of VBDs, especially for transmission control. VEM, as a cross-cutting activity, develops and promotes strategies, guidelines and standards for vector control, including sound management of pesticides. VEM promotes integrated vector management to improve efficacy, cost-effectiveness, ecological soundness and sustainability of vector control interventions for VBD control. VEM goal, objectives and strategies

[The WHO pesticides Evaluation Scheme \(WHOPES\) web site](#)


VEM Headlines


[Vector Ecology and Management \(VEM\)](#)


[Integrated Vector Management \(IVM\)](#)


[Vector Control Advisory Group on new tools \(VCAG\)](#)

[Dengue](#)

VEM guidelines 

 [Guidance on policy-making for IVM](#)

 [Handbook for Integrated Vector Management](#)

 [Monitoring and evaluation indicators for integrated vector management](#)

Integrated Vector Management:

A rational decision-making process for optimal use of resources for vector control

Global Strategic Framework
for
Integrated Vector Management



World Health Organization

- Advocacy, social mobilization and legislation
- Cross sector collaboration
- Integrated approach
- Evidence-based decision-making
- Capacity-building

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RBM Mechanisms

Constituencies

Board

Executive Committee

Sub-Committee

Resource
Mobilization

Working Groups

Advocacy
Communication
Harmonization
Vector Control
Procurement and
Supply
Management
Case Management
Monitoring and
Evaluation
Malaria in

Vector Control Working Group (VCWG)

[Overview](#)
[Meetings](#)
[Reference documents](#)

Co-Chairs:

Dr Michael Macdonald (WHO)
Dr Jo Lines (LSHTM)

Working Group Secretariat:

Dr Konstantina Boutsika (Swiss TPH)

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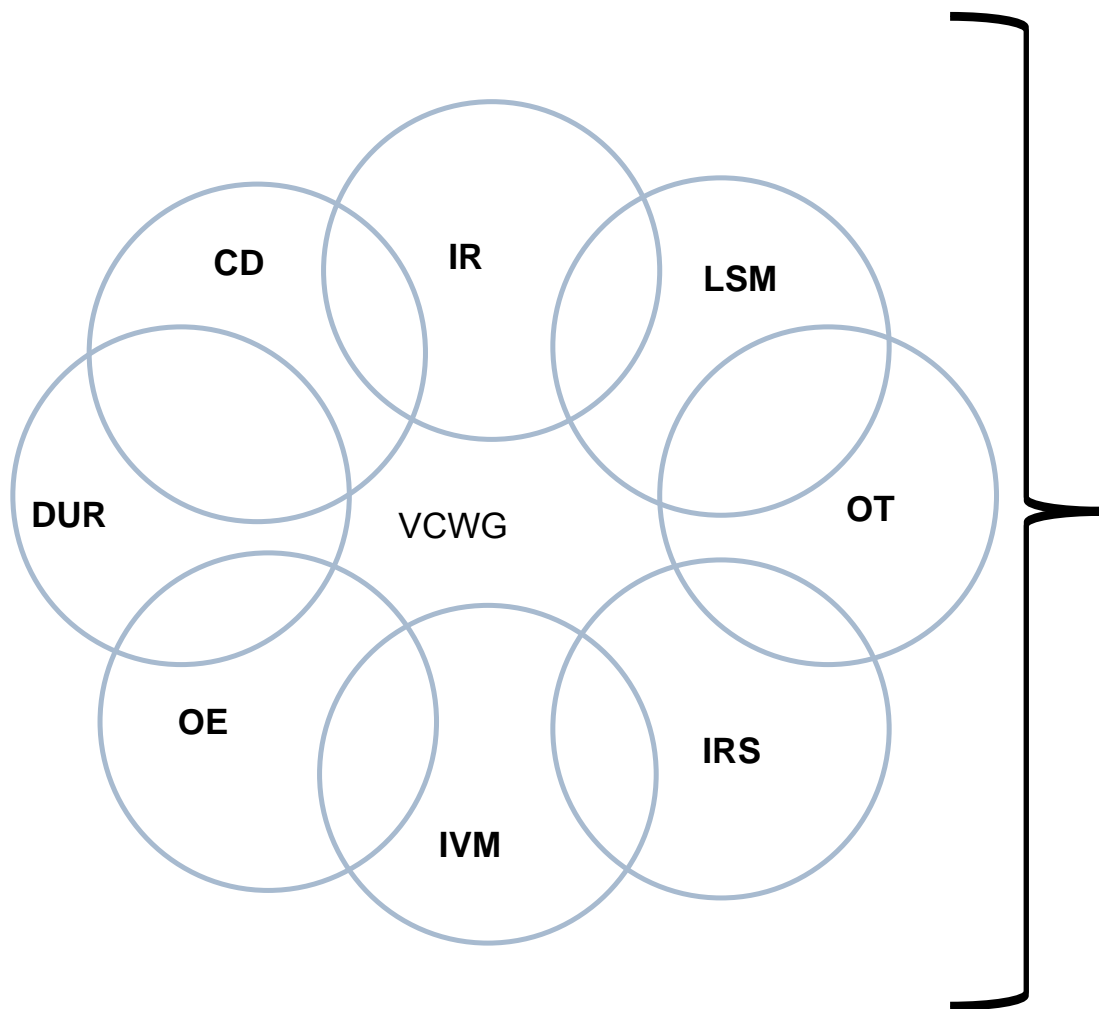
Next meeting:

TBD

[Vector Control Working Group](#) work streams:

- [Insecticide Resistance](#)
- [Outdoor Malaria Transmission](#)
- [Continuous LLIN Distribution Systems](#)
- [Durability of LLINs in the Field](#)
- [Capacity Building for IRS](#)
- [Larval Source Management](#)
- [Optimizing Evidence for Vector Control Interventions](#)
- [Entomological Monitoring and Integrated Vector](#)

VCWG: Meeting the challenges



WHO, RBM and the Global Alliance

