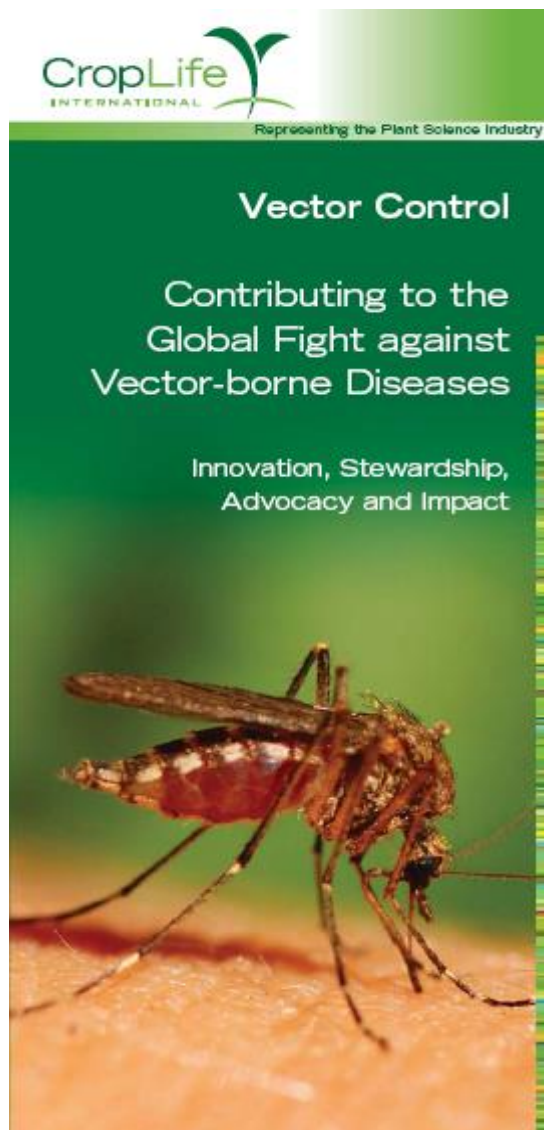


# Perspectives from Crop Life International Vector Control Team

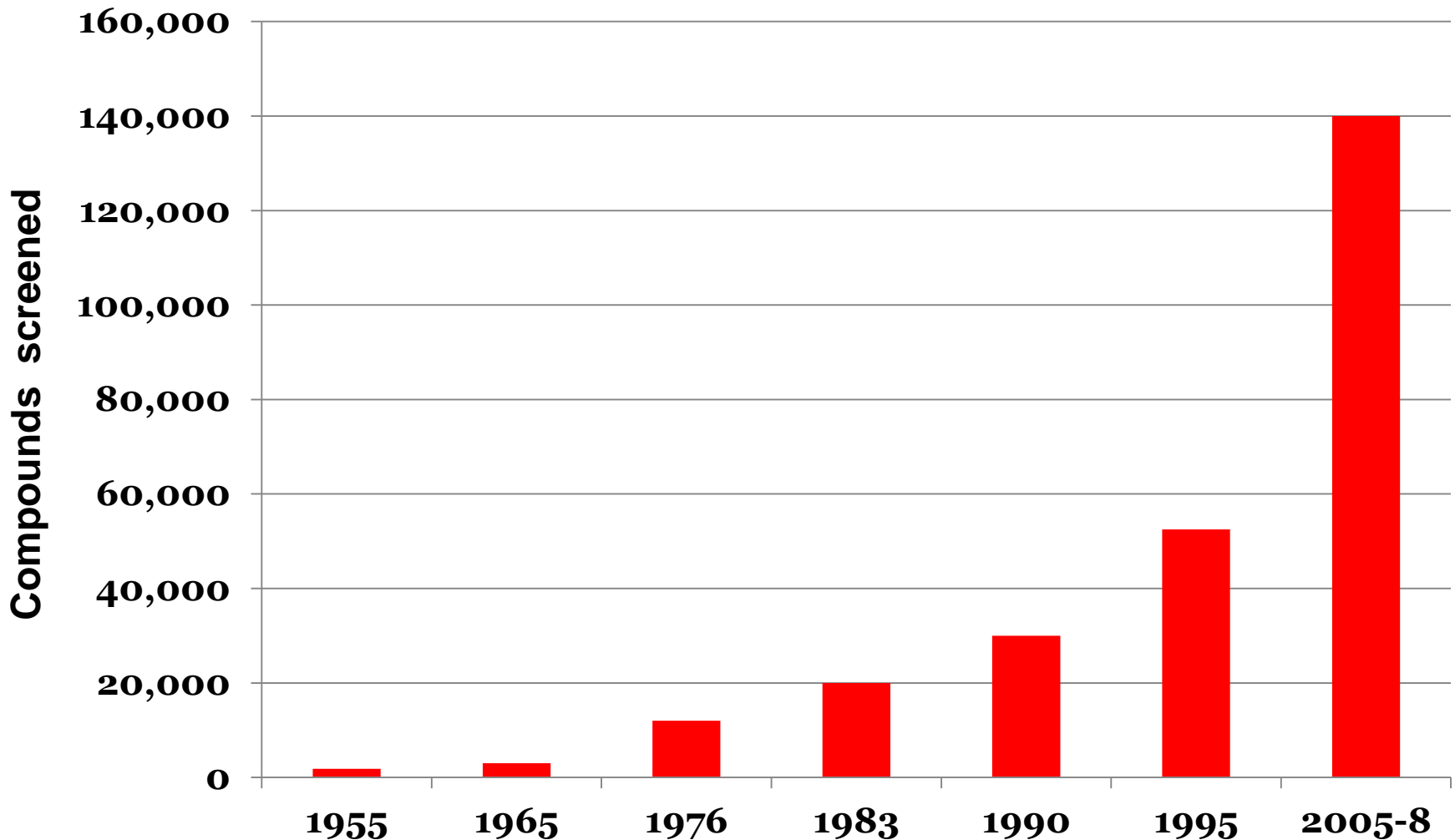
Egon Weinmueller  
CropLife International, May 2015





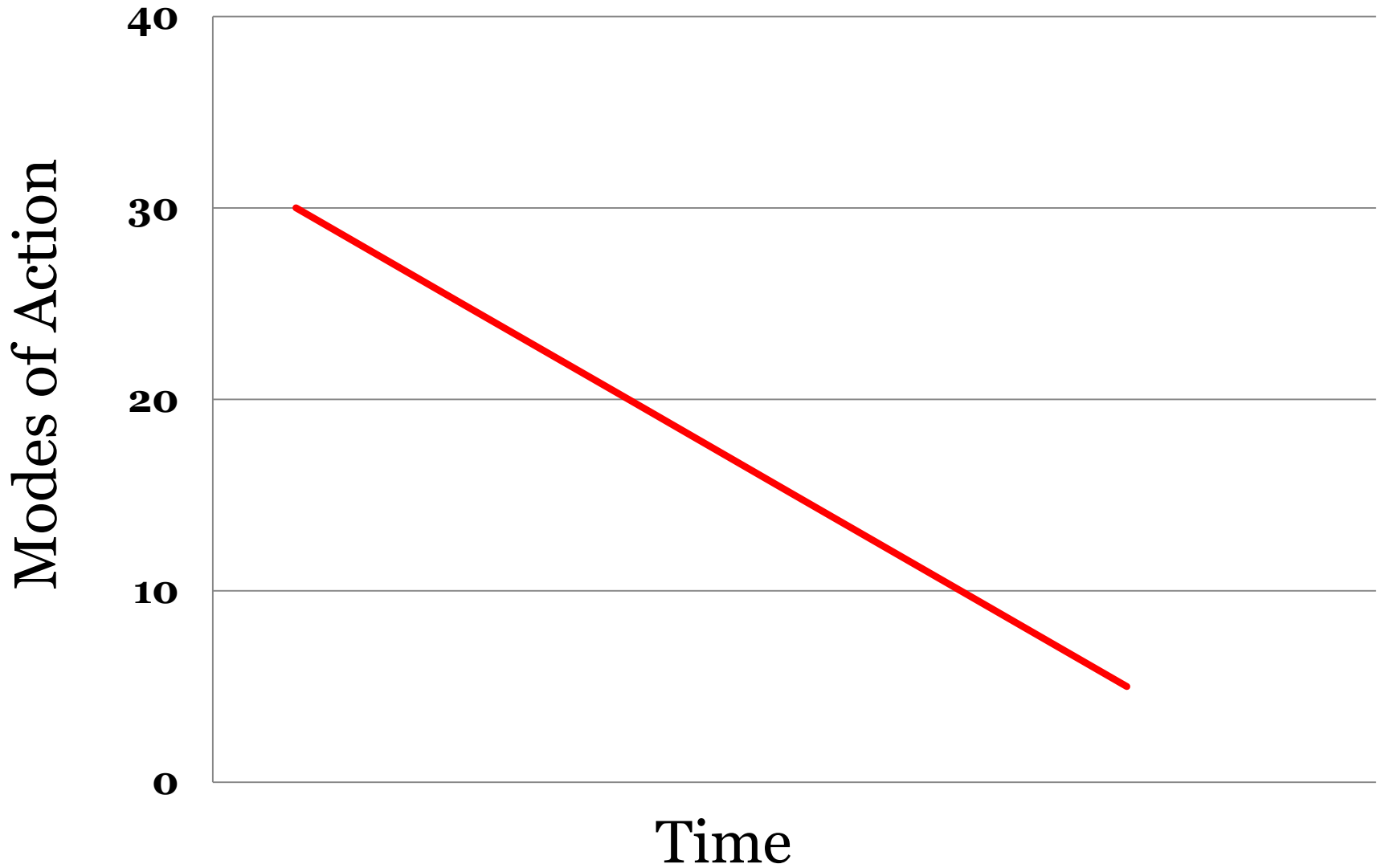
- Members have products in /recommended by WHOPES
- Formed to address vector control issues with one voice
- Stewardship - provide guidance on safe and effective use of products
- Advocacy, Impact, Innovation
- <http://croplife.org/global-issues/public-health-and-vector-control/>

# Probability of discovering a single new pesticide



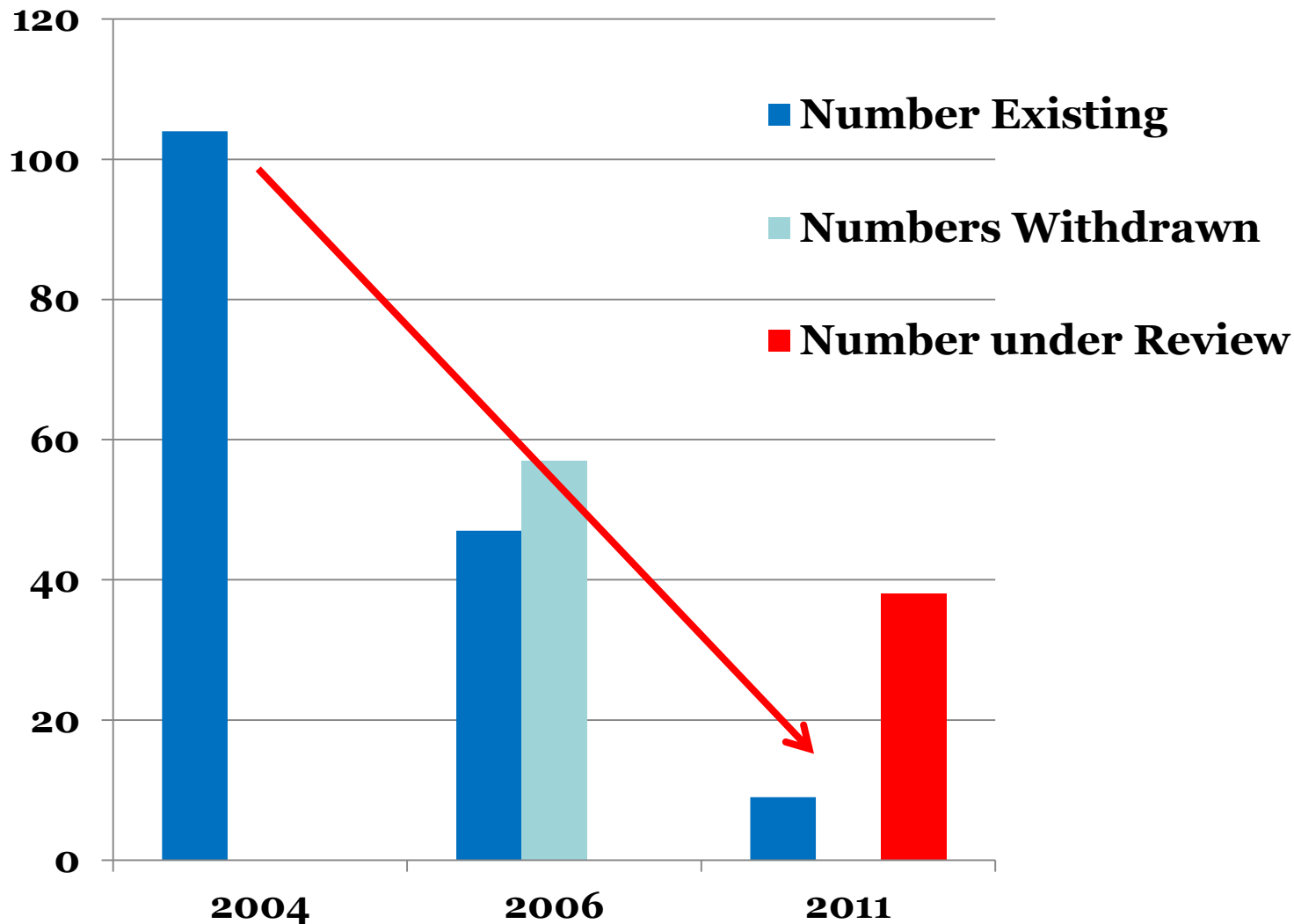
Source: Phillips McDougall March 2010, et al)

# Decline in availability of non resisted modes of action insecticide



# Regulatory pressure: decline in number of EU registered Insecticides/acaricides





## PT18, List 2 Insecticides for Public Health



But ...only 4 classes of WHO adulticides

1940-45	DDT		
1946-50	Lindane		
1951-55	Malathion		
1956-60			
1961-65	Fenitrothion	Propoxur	
1966-70	Chlorpyrifos-methyl		
1971-75	Pirimiphos-methyl	Bendiocarb	Permethrin
1976-80	Cypermethrin		
1981-85	Alpha-cypermethrin	Cyfluthrin	
	Lambda-cyhalothrin	Deltamethrin	Bifenthrin
1986-90	Etofenprox		
1991-95			
1996-00			
2001-05			

	Organochlorines		Carbamates
	Organophosphates		Pyrethroids

# Resistance - in many vectors

<b>Disease</b>	<b>Insect</b>	<b>Vector Control Intervention</b>
<b>Malaria</b>	<i>Anopheles</i>	LLIN and IRS
<b>Dengue</b>	<i>Aedes</i>	larvicides, space sprays, IRS
<b>Lymphatic filariasis</b>	<i>Anopheles</i> <i>Culex</i> & <i>Aedes</i>	MDA plus vector control LLINs and IRS
<b>Leishmaniasis</b>	Sandflies	IRS
<b>Chagas</b>	Kissing Bugs	IRS
<b>Onchocerciasis</b>	Biting Blackflies	MDA. Larviciding

# Product Development Partnerships (PDPs): Driving force in developing new tools





## Pesticide products under WHOPES laboratory and or field testing and evaluation

<i>Application</i>	<i>Current phase</i>	<i>Product</i>	<i>Manufacturer</i>
<i>Indoor residual spraying</i>	<i>I</i>	<i>SumiShield GR</i>	Sumitomo Chemical, Japan
<i>Long-lasting insecticidal nets</i>	<i>I</i>	<i>Akanet LN</i>	Kuselace Co., Japan
	<i>I</i>	<i>SafeNet LN*</i>	Mainpol GmbH, Germany
	<i>I</i>	<i>Olyset Duo LN</i>	Sumitomo Chemical, Japan
	<i>I</i>	<i>Christiansen LN</i>	Christiansen Sarl, France
	<i>II</i>	<i>MiraNet LN</i>	A to Z Textile Mills Ltd, Tanzania
	<i>II</i>	<i>Panda Net 2.0 LN</i>	Life Ideas Textiles, China
	<i>II</i>	<i>Veealin LN</i>	Vector Control Innovations, India
	<i>II</i>	<i>Yahe LN</i>	Fujian Yamei Co., China
	<i>III</i>	<i>DawaPlus 2.0 LN</i>	Tana Netting, UAE
	<i>III</i>	<i>LifeNet LN</i>	Bayer CropScience, France
	<i>III</i>	<i>Olyset Plus LN</i>	Sumitomo Chemical, Japan
	<i>III</i>	<i>PermaNet 3.0 LN</i>	Vestergaard Frandsen, Switzerland
	<i>Mosquito larviciding</i>	<i>I</i>	<i>SumiLarv 2MR</i>
<i>I-III</i>		<i>VectoMax GR (Bti+Bs)</i>	Valent BioSciences Corp., USA
<i>I-III</i>		<i>Bactivec SC (Bti)</i>	Labiofam, Cuba

GR = granules; LN = long-lasting insecticidal net; MR = Matrix release formulation; SC = suspension concentrate.

\* Product for determination of equivalence.

## WHO recommended insecticides for indoor residual spraying against malaria vectors

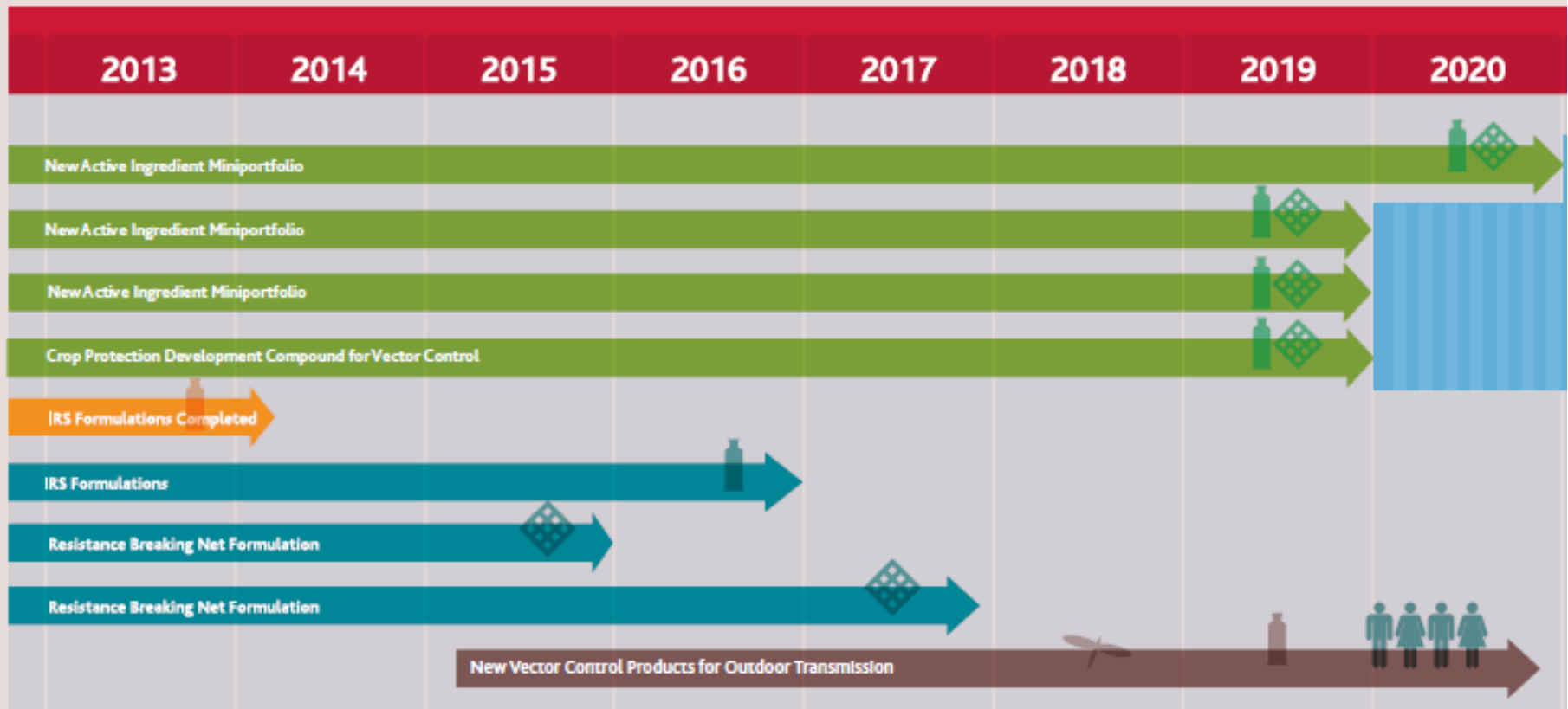
<i>Insecticide compounds and formulations</i> <sup>1</sup>	<i>Class group</i> <sup>2</sup>	<i>Dosage (g a.i./m<sup>2</sup>)</i>	<i>Mode of action</i>	<i>Duration of effective action (months)</i>
<i>DDT WP</i>	OC	1-2	contact	>6
<i>Malathion WP</i>	OP	2	contact	2–3
<i>Fenitrothion WP</i>	OP	2	contact & airborne	3–6
<i>Pirimiphos-methyl WP, EC</i>	OP	1-2	contact & airborne	2–3
<i>Pirimiphos-methyl CS</i>	OP	1	contact & airborne	4–6
<i>Bendiocarb WP, WP-SB</i>	C	0.1–0.4	contact & airborne	2–6
<i>Propoxur WP</i>	C	1–2	contact & airborne	3–6
<i>Alpha-cypermethrin WP, SC</i>	PY	0.02–0.03	contact	4–6
<i>Alpha-cypermethrin WG-SB</i>	PY	0.02–0.03	contact	up to 4
<i>Bifenthrin WP</i>	PY	0.025–0.05	contact	3–6
<i>Cyfluthrin WP</i>	PY	0.02–0.05	contact	3–6
<i>Deltamethrin SC-PE</i>	PY	0.02–0.025	contact	6
<i>Deltamethrin WP, WG, WG-SB</i>	PY	0.02–0.025	contact	3–6
<i>Etofenprox WP</i>	PY	0.1–0.3	contact	3–6
<i>Lambda-cyhalothrin WP, CS</i>	PY	0.02–0.03	contact	3–6

**Chlorfenapyr 240 SC:** The current assessments of Chlorfenapyr SC (class group: pyrrole) are available in the report of the 16<sup>th</sup> WHOPEs Working Group meeting, 22–30 July 2013 and the report of the 17<sup>th</sup> WHOPEs Working Group meeting, 15–19 September 2014 (both reports available at: <http://who.int/whopes/resources/en/>).

# Progress in Product Development



## Product development roadmap



# Priorities VCT 2015- Nr 1

## Initial perspectives

## Innovation to Impact in Vector Control – I2I

### Proposed near-term commitments



- Participate in **pilot dossier review and pre-submission advice** with WHO
- Commit to increase **funding** for novel AIs, including those under development with IVCC
- Accept **inspections of manufacturing sites**



- Initiate legislative and/or policy changes to enable **review of AIs & products** for public health for use outside of United States
- Engage in discussions with WHO on **EPA serving as an SRA** to WHO to expedite review of AIs for public health and play a greater role in vector control products (for use outside of the US)



- Publically announce **WHO supporting innovation** in vector controls
- Conduct **pilot of dossier review and pre-submission guidance process** with innovative products from industry
- Increase resources to **perform manufacturing site inspections**



- Support **cross-lab validation** of durability tests and data
- Publish durability data and define **minimum & aspirational thresholds** with WHO to enable shift to value-based purchasing
- Allocate 10-20% of spend to **more durable nets**<sup>1</sup>



- Perform **expedited review process** for WHOPEP recommended products, along the lines of the 90-day Collaborative Registration Procedure
- Agree to work towards **harmonizing registration processes on a regional level**



- Provide **catalytic funding for implementation of I2I effort**
- Continue leadership role in **driving stakeholder collaboration**

1. Assuming agreement on the validity of the durability tests and data

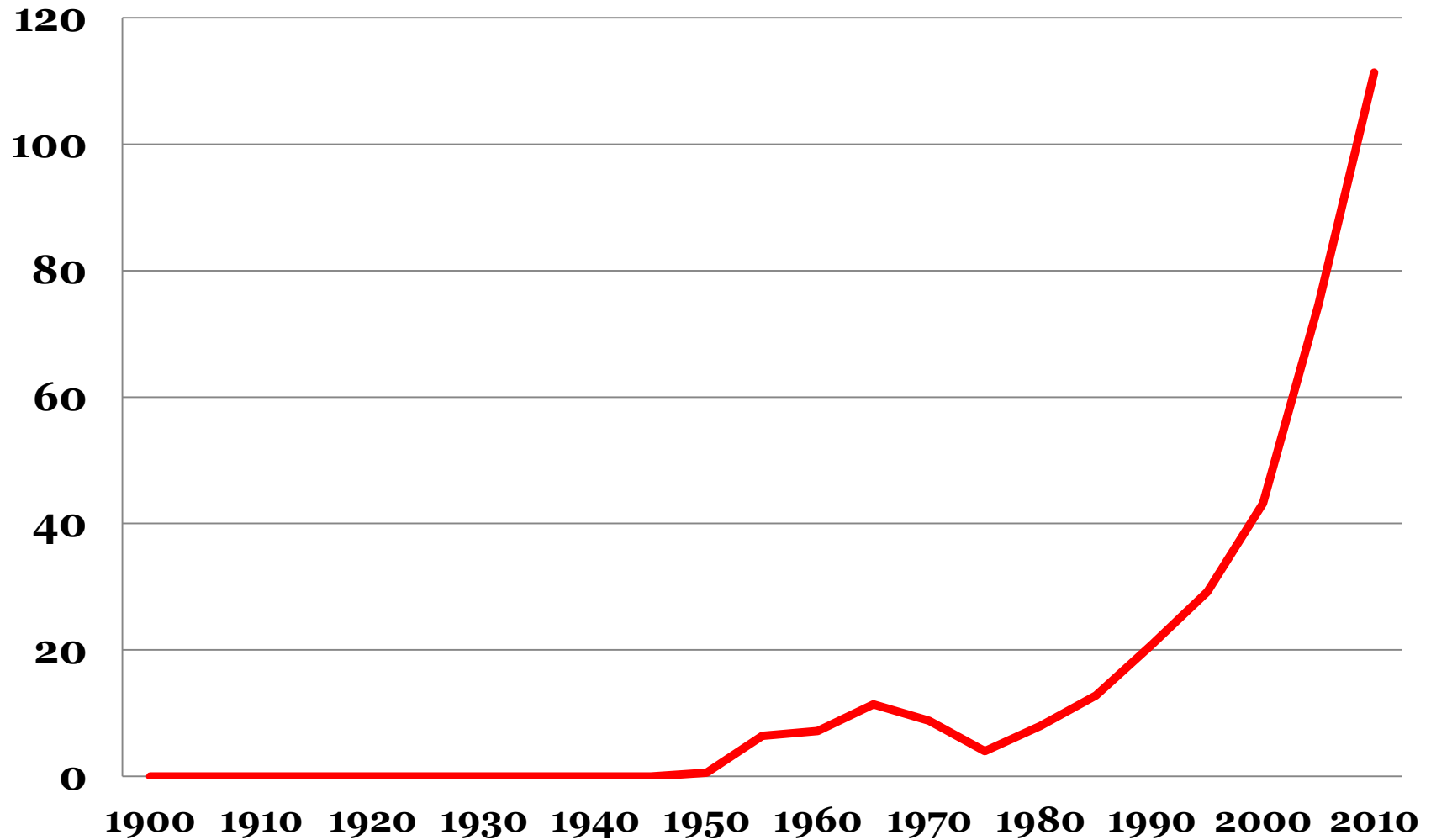
## Drive Data Quality Task Force together with WHO

- i) Data quality, GLP/GEP - the establishment of SOPs, etc
- ii) Development of new test and / or application methods
- iii) Experimental design and statistical analysis.

Thank you!

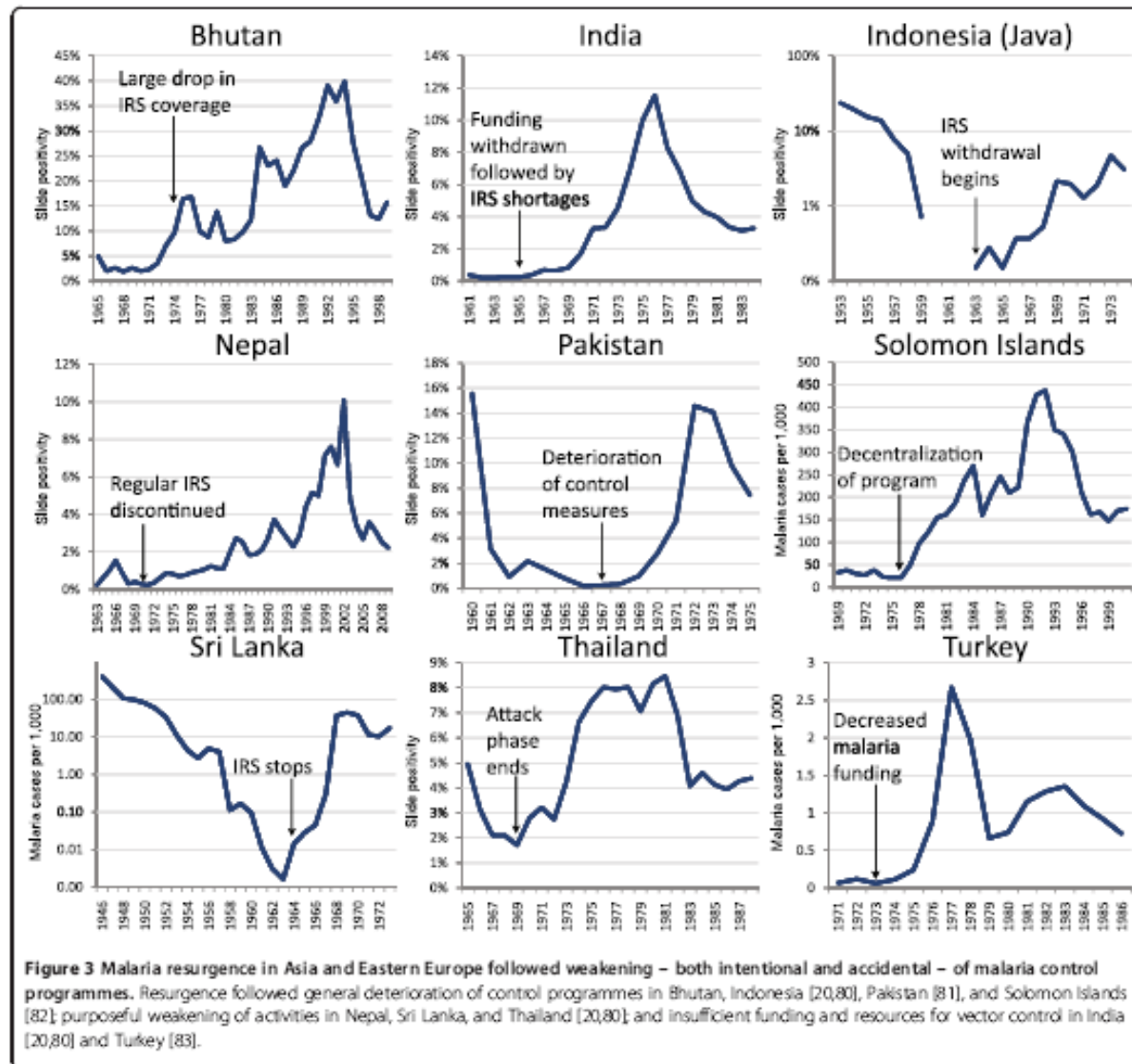


# Papers/year on "insecticide resistance in mosquitoes"



Source: Medline search, Trina Padoll 2013

# The importance of Vector Control





# Progress – Projects at IVCC



## Active ingredients and new formulations portfolio

