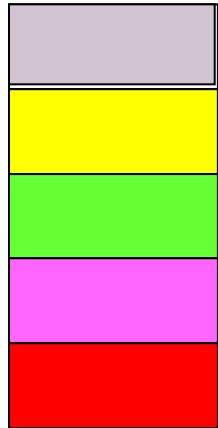




Malaria control program in Viet nam 2009 and plan for 2010

**ACTMalaria EB & Partner Meeting
Luang Prabang, 15-17-2010**

Malaria areas



No malaria: 42 million

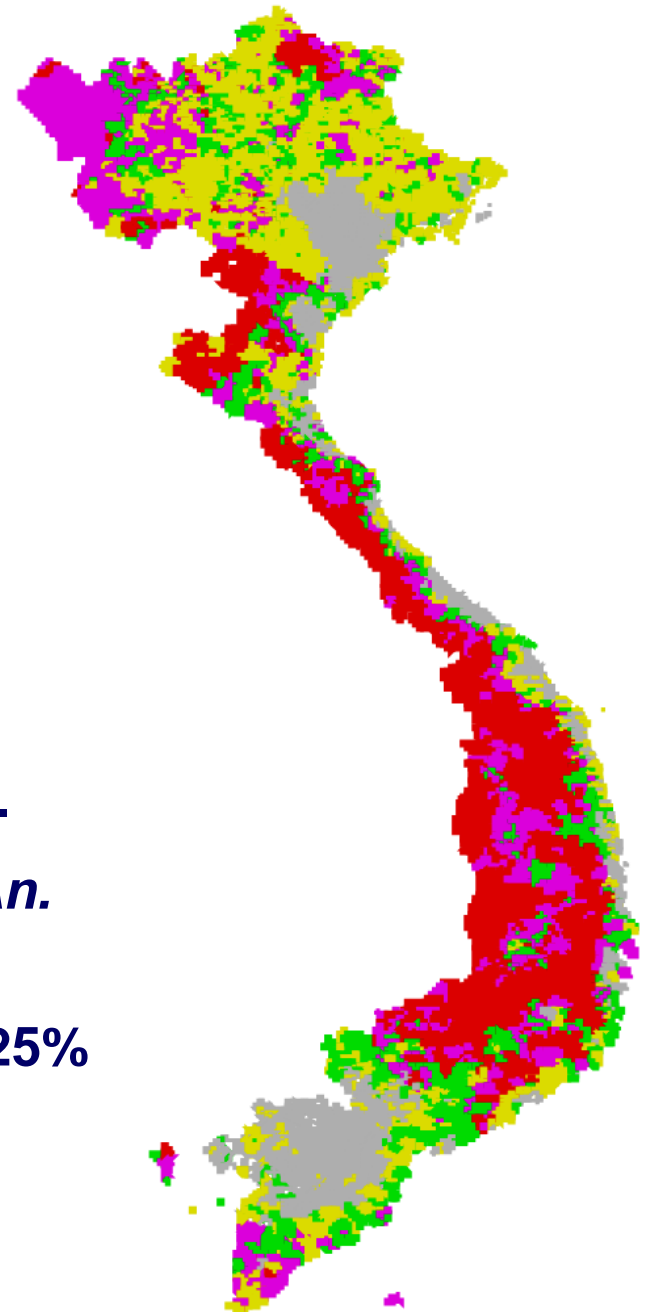
Risk of resurgence: 18 mill

Low endemic: 10 mill.

Moderate endemic: 6 mill.

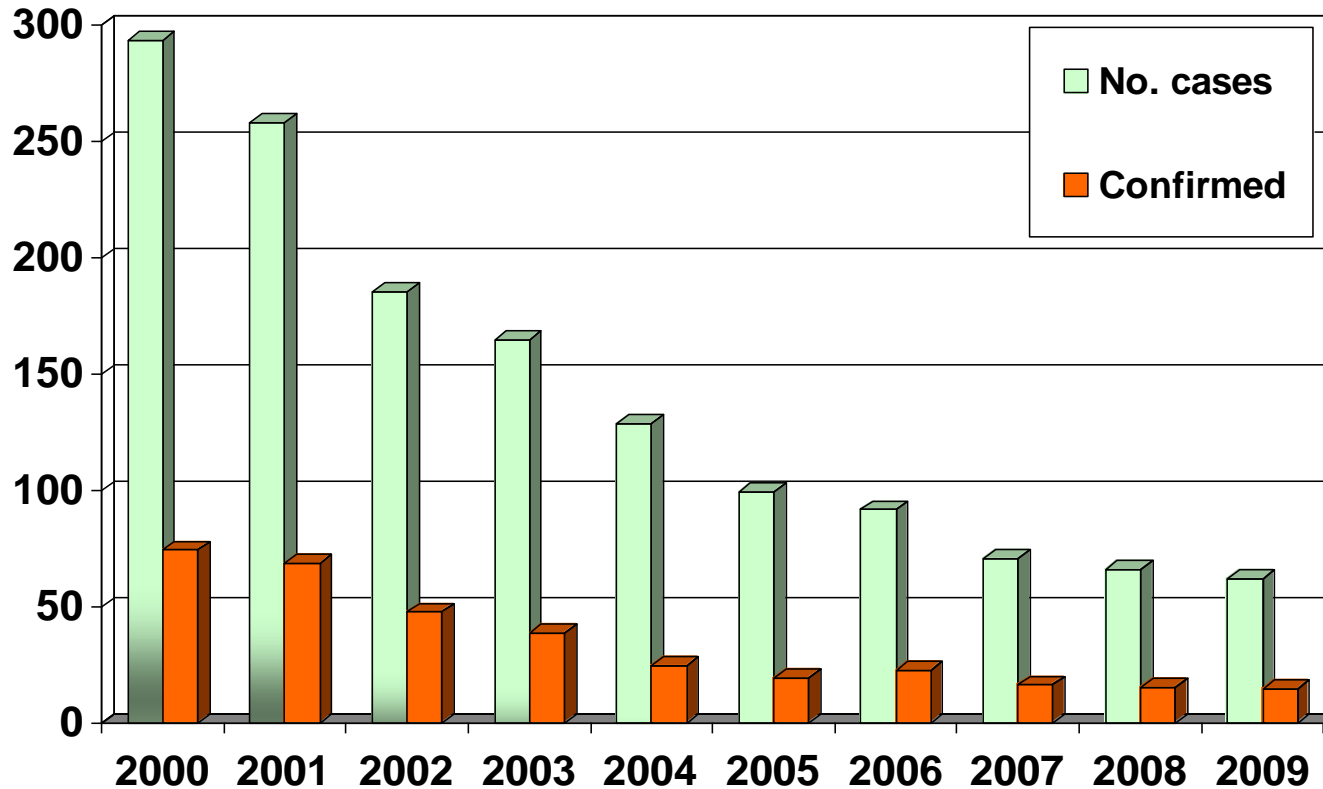
Highly endemic: 4 mill.

- **Population at risk: 36/ 86.5 milion .**
- **Vectors: *An. minimus*, *An. dirus*, *An. sundaicus***
- ***P.falciparum* :75-80%; *P.vivax*: 20-25%**



Malaria cases in Vietnam 2000-2009

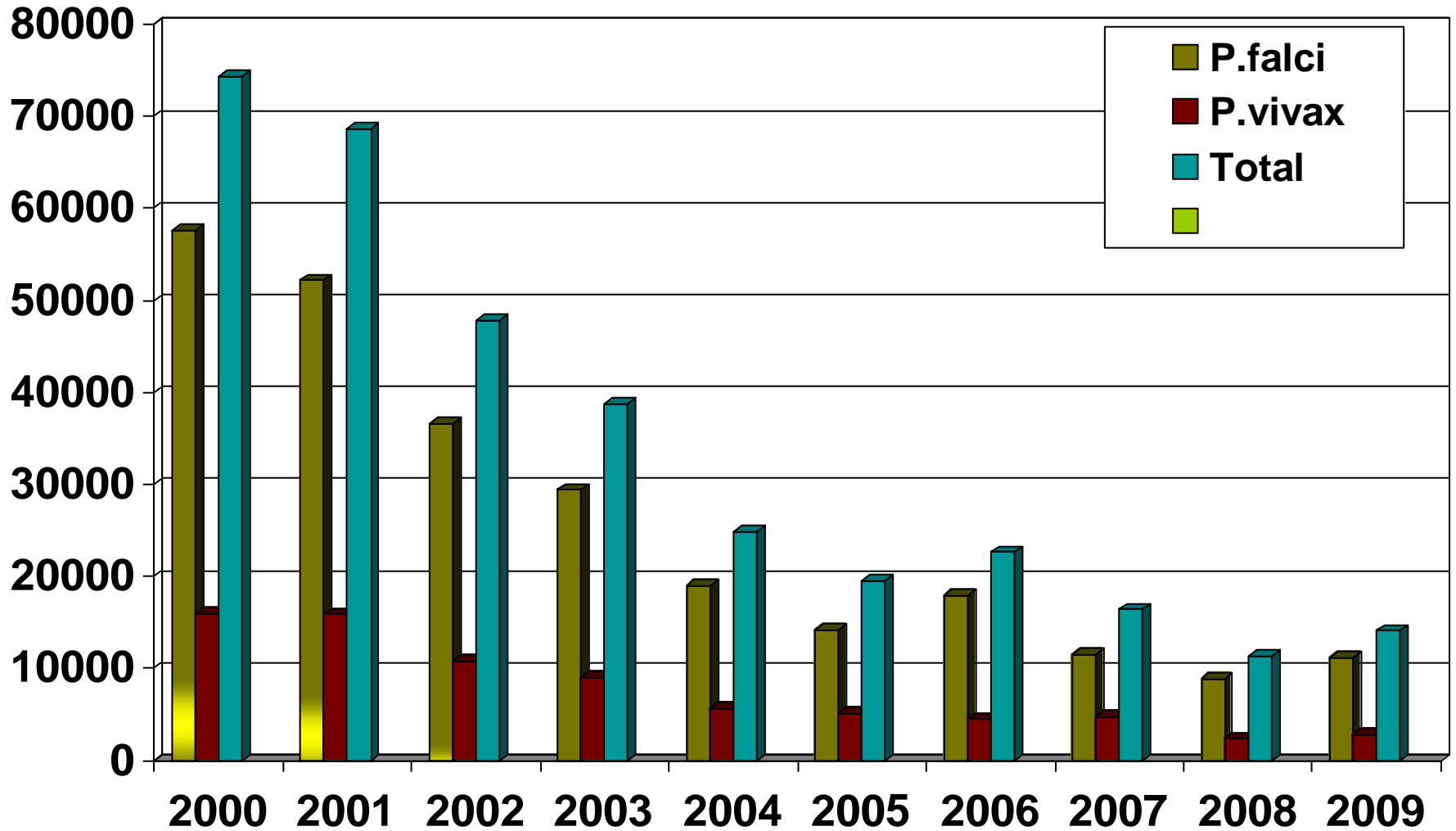
Thousand



2009: No. of Death: 26
No. Confirmed: 16,130
API: 0.18/1000

Confirmed cases by species: 2000-2009

Thousand



Malaria control activities 2009

Activities	Implementation
No of treatment	688.782
Total population protected by insecticides: . IRS . ITNs	11.749.657 (34% Risk pop.) 1.767.840 9.981.817

POLICY use of anti-malaria drugs and Insecticides (1)

- **Case treatment: Confirmed and suspected cases.**
- **Mass treatment: applied in epidemic only.**
- **Stand-by treatment: for people entering malaria endemic areas not accessible to medical services.**
- **The first-line treatment: Chloroquin or Arterakin for suspected cases; Arterakin 3 days for confirmed P.falciparum and Chloroquin 3 days for confirmed P.vivax.**
- **The second-line treatment: ACT for P.falciparum & Chloroquin 3 days + Primaquin 10 days for P.vivax.**
- **ICON 10 WP for IRS, ICON 2,5 CS for ITNs (1 round/ year).**
- **Fendona 10 CS for both IRS & ITNs (1 round/ year).**

POLICY use of anti-malaria drugs and Insecticides (2)

- ***P. falciparum* drug resistance is being monitored regularly and new treatment guidelines have been issued for each region and scheduled for review every 3-5 years.**
- **More than 3000 microscopic testing points have been set up. Drugs and insecticides are stocked ready for outbreak control.**
- **House spraying used to cover up to 2 million people per year. Spraying is implemented in hyper-endemic areas where local people have no habit of using bed nets, or do not have bed nets.**
- **Bed nets impregnation has been conducted in large scale in all malaria endemic provinces. The bed nets coverage is about 70%, bed nets are distributed by the malaria control system from central to commune and village.**

Monitoring Malaria Drug Resistance

Year 2004 - 2005: Artesunate 16 mg/kg for 7 days, 82 patients (in Binh Phuoc province): Adequate clinical and parasitological response 76 (92.7%); 3 late parasitological failure (3.65%) and 3 late clinical failure (3.65%).

Year 2006: Dihydroartemisinin + piperazine, oral for 3 days, 190 Patients (in Quang Tri, Ninh Thuan and Dak Nong provinces): Adequate clinical and parasitological response are 190 (100%).

Evidence of resistance in Vietnam (2010)

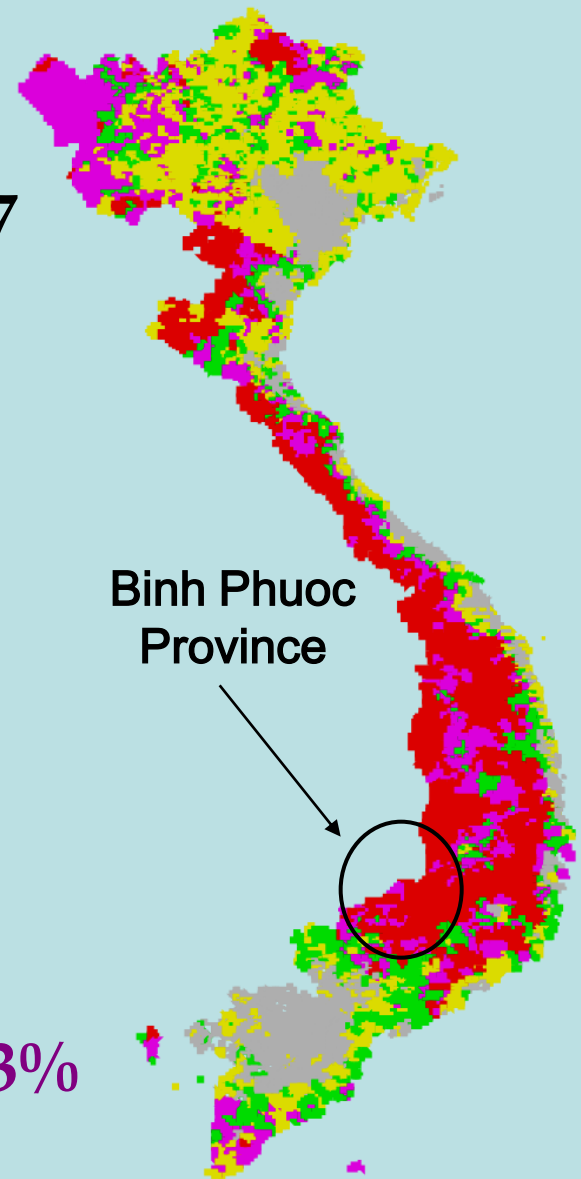
Therapeutic Efficacy Study (TES)
with Artesunate 16 mg/kg over 7
days:

*Dak Nhou commune, northern Binh
Phuoc,*

- 2009: - ACPR (Sensitive)
45/53=85% (some uncertainty)
 - Positive Day 3: 7/53=15%
(clear)

Bu Gia Map, northern Binh Phuoc

- 2008-09: - ACPR: 54/54=100%
 - Positive Day 3: 2/60=3.3%



Evidence of resistance in Vietnam(2010)

- TES with Artesunate in Ninh Thuan, Gialai and Quang Tri (Central part), 2008-2009:

No evidence of resistance

- Dak Nhou (Southern part), 2010, Arterakin 3 days treatment:
 - 7 patients started, have completed Day 3 or more:
 - 4 of 7 are positive on Day 3
 - One early treatment failure, the first in Vietnam

(Dak Nhou commune with 11,000 inhabitants has about 130 malaria cases per year, more than 50% of all the cases in communes of Bu Dang District. These are frontier areas with extensive primary forest).

Efficacy of Chloroquin to *P.vivax*

Variable	Study site (province)		
	Binh Phuoc		Ninh Thuan
Duration of study	2005	2007-2009	2006-2007
No. of patients analyzed	45	36	51
No. & % of patients with ACPR	45 (100%)	36 (100%)	49 (96.1%)
No. & % of patients with LPF			2 (3.9%)

Mortality of mosquitoes in susceptibility tests in Vietnam 2007- 2009

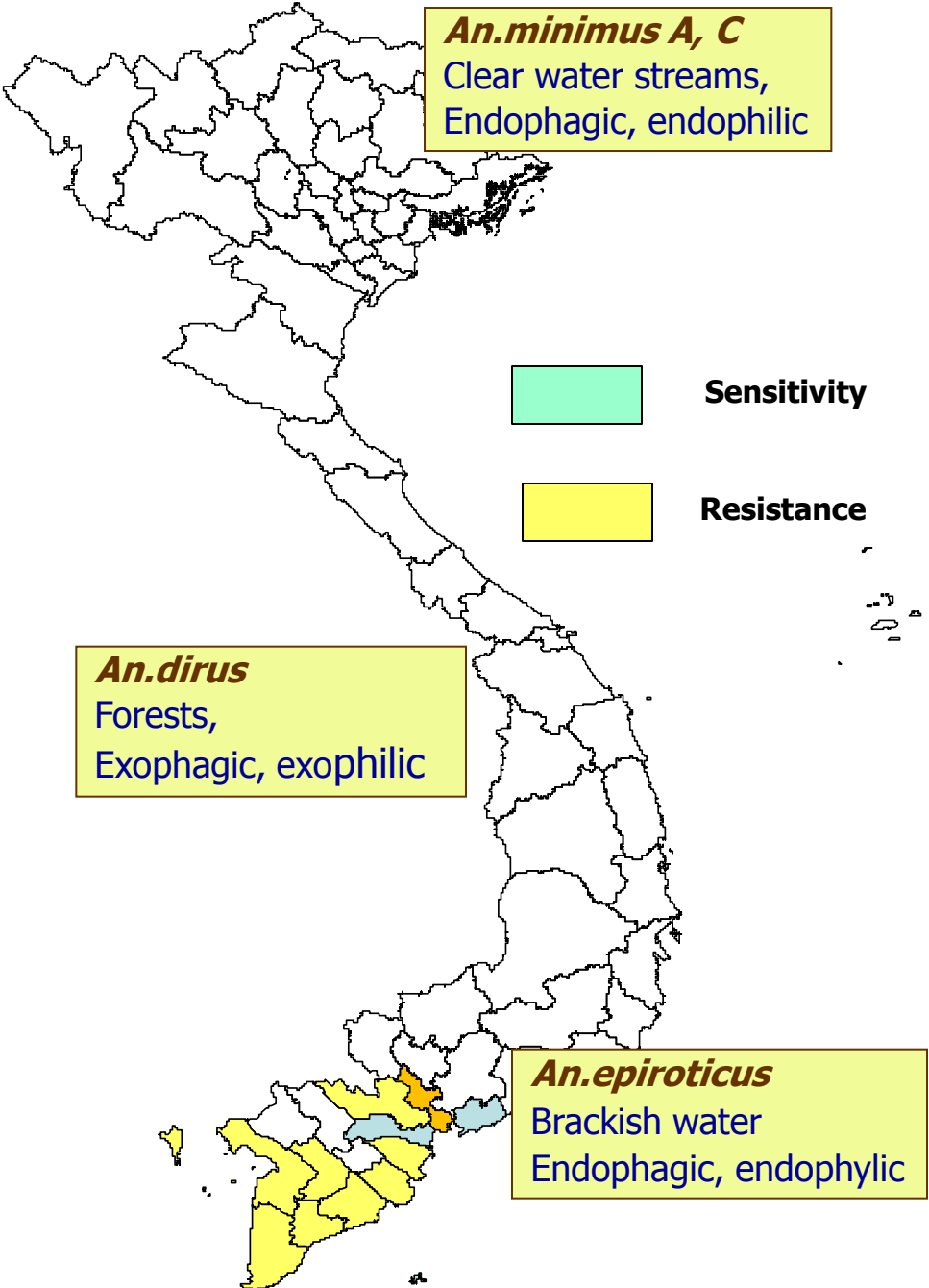
Site (province) and Date	Species	Mortality (%)					
		Lamb d. 0.05%	Alpha-cy. 30 mg/m ²	Delta. 0.05 %	DDT 4%	Prop o. 0.1%	Malat h. 5%
Quang Ninh: 07-09	<i>An.minimu</i> s	88-100	74-100		100		100
Lang Son: 2007	<i>An.minimu</i> s	95-100	88- 100		100	99-100	99-100
Bac Kan: 2007-09	<i>An.minimu</i> s	86-98	96-99		99-100	100	100
Hoa Binh: 2007	<i>An.minimu</i> s	93	97	100			
Ha Giang: 2007-09	<i>An.minimu</i> s	99	98- 99				
Dien Bien: 2008-09	<i>An.minimu</i> s	100	100				
Lai Chau: 2009	<i>An.minimu</i> s	99	100				

• 80 – 97% mortality suggests the possibility of resistance that needs to be confirmed
 • 80% mortality suggests resistance
 • 98 – 100% mortality indicates susceptibility

Mortality of mosquitoes in susceptibility tests in Vietnam 2007- 2009

Site (Province) and Date	Species	Mortality (%)					
		Lamb. 0.05%	Alphacy. 30 mg/m ²	Delta. 0.05%	DDT 4%	Propo . 0.1%	Malat h. 5%
Ca Mau: 2007	<i>An.epiroticus</i>	24	60			100	100
Long An: 2008-09	<i>An.epiroticus</i>	55-79	65-82			94-100	100
Son La: 2007	<i>An.sinensis</i>	100	99				
Nghe An: 2007	<i>An.philippina</i>	100	100				
Ha Tinh: 2007	<i>An.philippina</i>	100					
Quang Binh: 2007	<i>An.philippina</i>	90	100				
Dak Nong: 2007	<i>An.philippina</i>	98	98				

Resistance of *An. Epiroticus* to Pyrethroid



Plan of malaria control 2010

objectives.

- To reduce malarial mortality by 5% compared with 2009 (under 0.02/100 000 population).
- To reduce malarial morbidity by 5% compared with 2009 to under 0.8/1000 population).
- No big epidemic outbreak occur.
- To promote the development of sustainable factors .

Main target indicators:

- Pop. protected by insecticide : 11 million pop. (IRS : 1.9 million pop; ITNs : 9.1 million pop.)
- No of doses of anti-malarial drug : 1 million dose.
- Blood Slide: 2.5 million slides.

Main solutions

- Concentrating investment and technical guidance for malaria control in the “hot spots”, malaria hyper-endemic and remote areas.
- Sufficient and timely provision of budget, anti-malarial drugs, insecticides and other supplies for malaria control to the provinces.
- Improvement of the quality of malaria diagnosis and treatment at all levels: Arterakin* therapy for all suspected and confirmed cases.
- Strengthening of case detection and case management and monitor drug resistance.

ACTMalaria Training

WHO-ACTMalaria training workshop on external competency assessment of national group of malaria microscopists in Viet Nam

- **With support of ACTMalaria and WHO, first MA was held in Nov. 2006 and the second in Sep. 2009 in Hanoi for 12 microscopists/ each workshop.**
- **The malaria microscopy skills of participants who were involved in the assessment have been improved and their work quality has been enhanced.**
- **2008-2009, WHO supported Therapeutic Efficacy Surveys (TES) are being carried out in 5 provinces. A number of microscopists, who are not only from three IMPEs but also from provinces, are involved in the study. This gives them opportunity to maintain skills.**

WHO CERTIFIED GRADES

Microscopist	Species ID (%)	Counting (% +/- 25%)	Accreditation Level
Chau Khanh Hung	95	73	Level 1
Nguyen Luong Hieu	95	67	Level 1
Nguyen Thi Hoang Yen	90	60	Level 1
Ngo Thi Tuyet Thanh	95	53	Level 1
Pham Hoang Trung	94	53	Level 1
Le Van Nam	93	53	Level 1
Thai Thi Ngoc Loan	86	60	Level 2
Pham Thi Kim Phi	96	40	Level 2
Tran Thi Xuyen	94	33	Level 3
Nguyen Thi Phuong Linh	95	27	Level 4
Nguyen Thi Bich Ngoc	89	27	Level 4
Le Thi Nhu Le	91	13	Level 4

Bi-regional Insecticide Resistance Monitoring Network October 5th to 9th in Hanoi

This training was conducted in collaboration & support from WHO, ITM, and USAID.

- **This workshop aims to improve knowledge on insecticide resistance status of mosquitoes, vector of diseases, and increasing the capacity for appropriate Insecticide Resistance monitoring and.**
- **Planning for IR Network and Further Capacity Building – WHO/ITM/ACTMalaria**
- **22 participants who is involved in the vector control monitoring activities, and who can be focal person for reporting in the Insecticide Resistance Network. They come from the 12 countries**



Thank you