Malaria re-stratification and new National Strategic Plan (NSP 2011-2015) Lao PDR

Brief history of malaria in Laos

1954	a malaria control program existed with about 10 staff. In addition, each of the then 12 provinces had a DDT spraying team
1957 to 1960	malaria eradication program began, supported by the United States Operations Mission **(USOM).** A DDT residual spraying was carried out
1969 to 1975	limited DDT spraying took place plus mass drug administration (MDA) of Chloroquine, mostly in Vientiane Province, supported by the **World Health Organization (WHO)**
1981	The **Institute of Malaria, Parasitology and Entomology (IMPE)** was created in along with a countrywide network of malaria units.
1990	the **First National Meeting on Malaria** and future activities was held in Thalat, Vientiane Province. It was funded by UNICEF and WHO. Treatment policies, methods for drug resistance monitoring, and stratification were discussed for the first time
1991- 1993	over US$ 1 million was made available for malaria control from **WHO and UNICEF**. malaria control strategy based on the marketing of IBN. From 1993 to 1996 the project operated in 2 provinces involving 7 districts and 300,000 people
1996 - 2001	**World Bank** project began, operating as a soft loan with Belgian technical assistance. This project operated in eight provinces with initial IBN distribution in selected districts. **ADB** took over the UNICEF project and extended it to cover Saysomboune Special Zone (1996-2000).
1997 – 2001	The **Lao EU** Malaria control program was based in seven provinces, IBN distribution in two districts per province. During the same period, the **Japanese Grant Aid** also supported some districts in 4 provinces, In 2000, the **Bilateral Vietnamese Government Cooperation** supported malaria activities in 3 districts

GFATM – 2003 till current: Rounds 1, 4 and 7

Main strategies last 5 years

- **Early diagnosis and treatment** – scale up of diagnosis with Rapid Diagnostic Test (RDT) and treatment with Artemisinin Combination Therapy (ACT) at village level covering approx. 5,000+ villages (total villages in Laos approx.10,000)

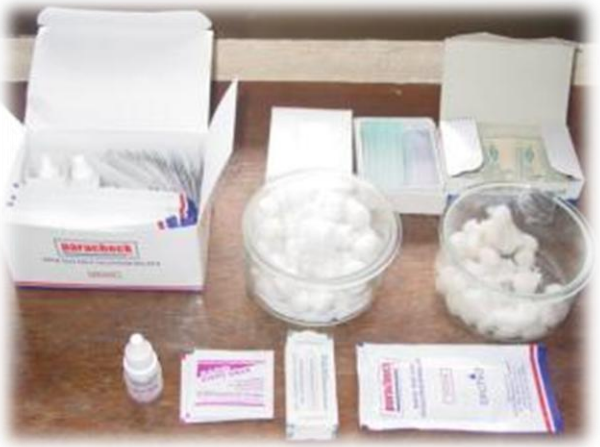
- **Personal protection** with Insecticide Treated Net (ITNs) and gradual scale up of Long Lasting Insecticide treated net (LLIN) protecting targeting population at risk of approx. 3.6 million (est. population of Laos 5.7 million)

- Targeting **Ethnic Minority Groups** (EMGs) since 2008 in intensive IEC activities

- Enhancing capacity building and programme management

Coverage of Early Diagnosis and Treatment (EDAT) - RDT and ACT

- A total of 50 /51 provincial hospitals (incl. provincial hospitals, army hospitals, PAMS and CMPE)
- At the district level, 111 of 114 district health facilities
- 706 of 758 health centers
- 5,241 villages



Cumulative number of villages and health centres receiving ACT/RDT by month between 2006-2008

Total villages reported to have ACT/RDT: 6 462

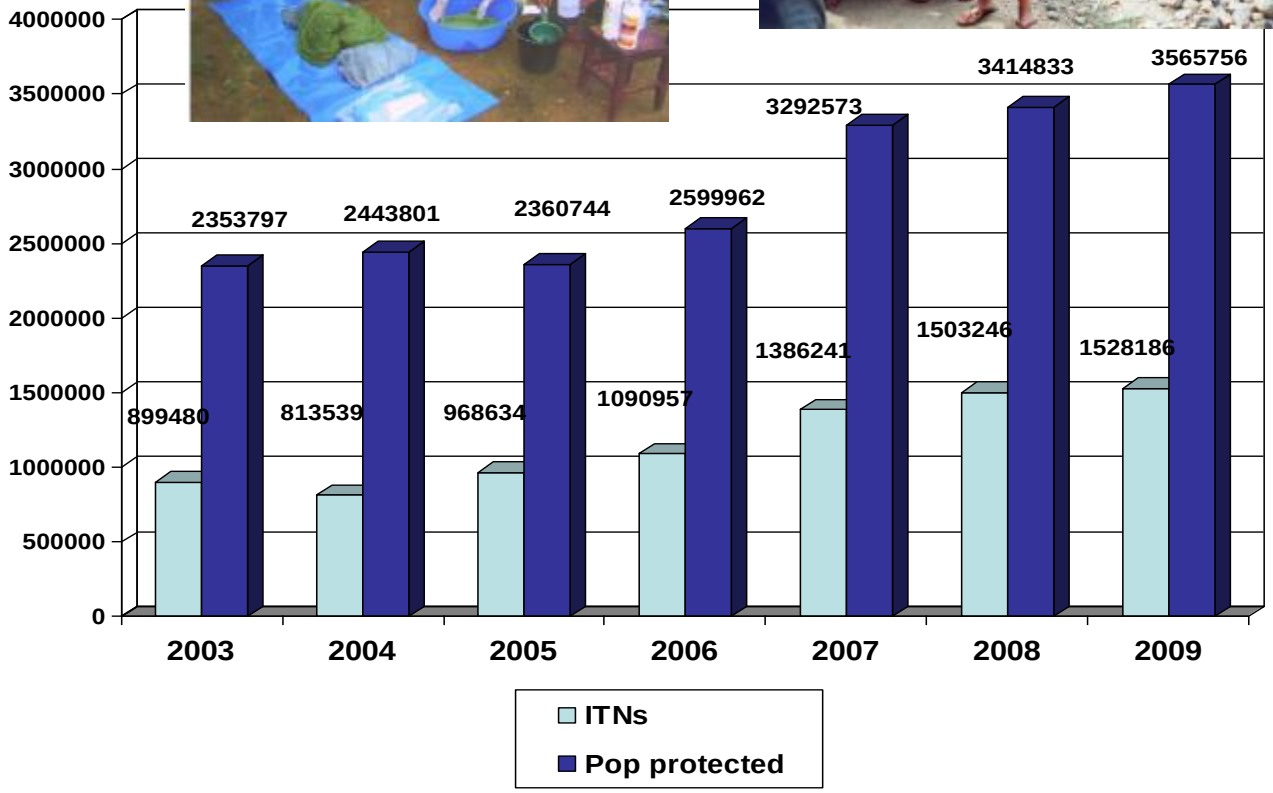
Survey

Total villages trained : 6,202

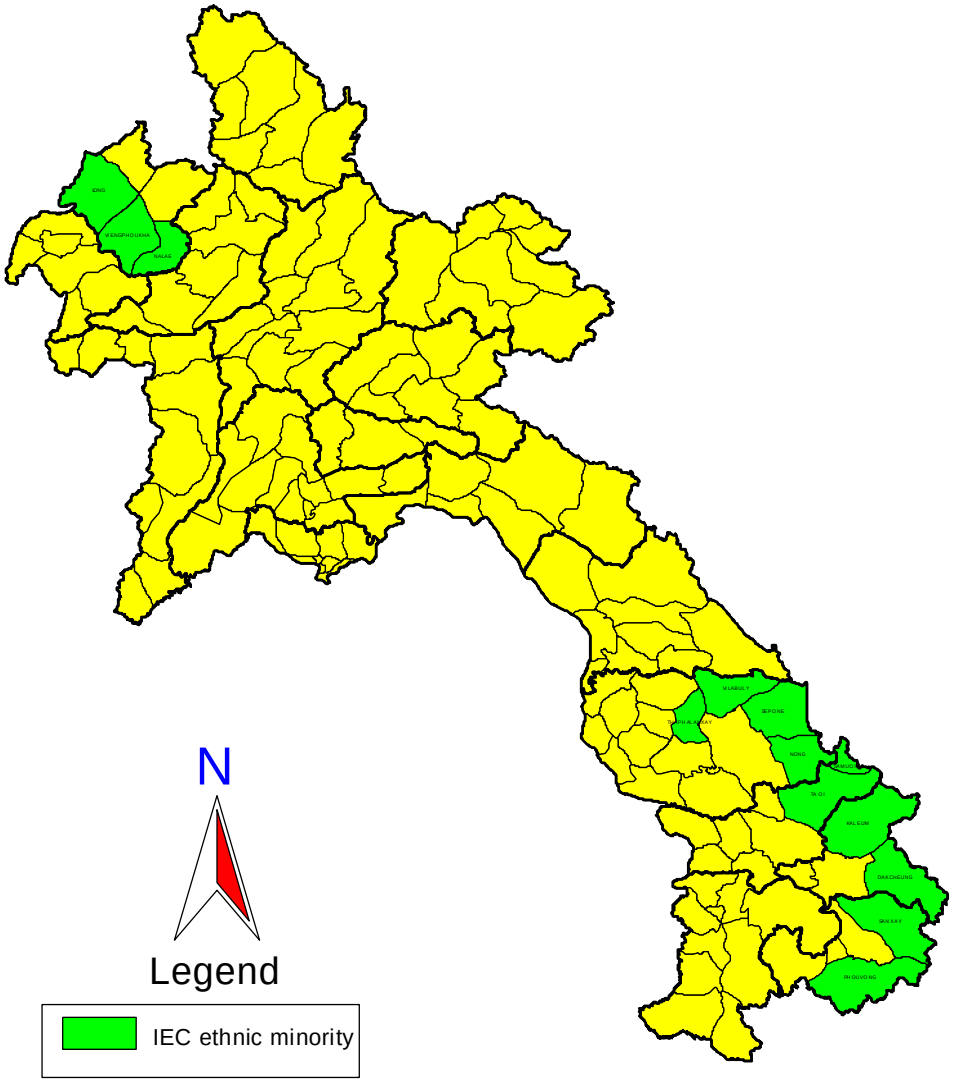
Total villages received: 5,239 (85%)

Data for 34 villages receiving ACT/RDT in 2005 not included in graph

By 2009: 1,164,310 ITNs re-treated, 363,876 LLNs were distributed. The total cumulative number of ITN and LLN is 1,528,186 and total 3,565,756 protected with ITNs and LLNs (99 % of target 3.6 million population at risk)



IEC ethnic minority project in 5 provinces for Round 7



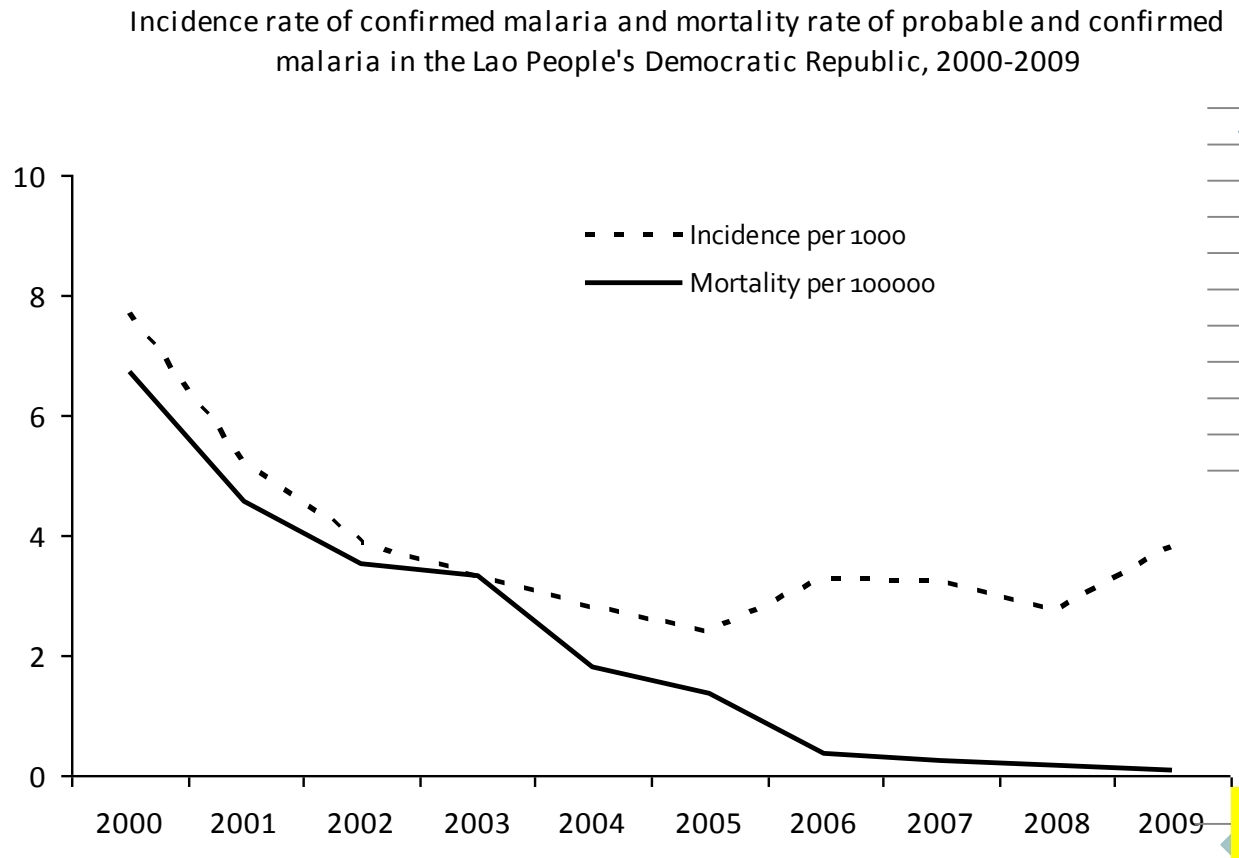
Source: CMPE 2009

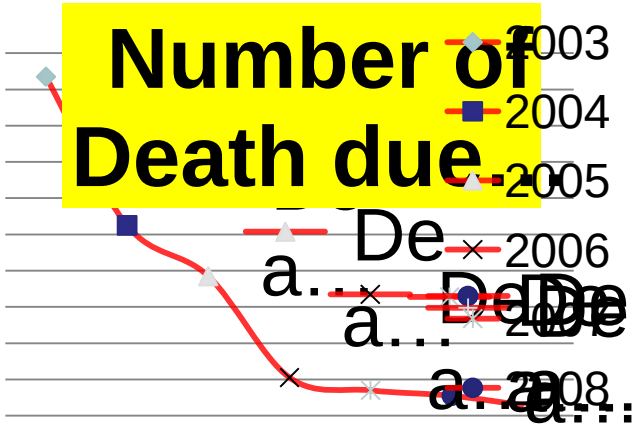
Ethnic Minorities Groups

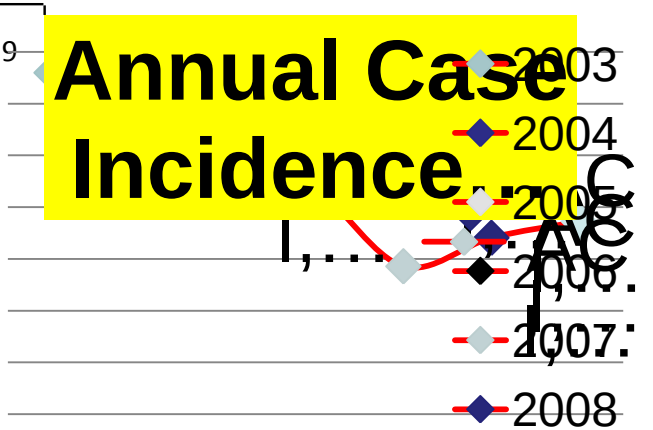
Partner	CMPE	Health Unlimited	PEDA
Target ethnic groups	Phuthai, Khmu	Phuthai,Khmu,Brau, Talieng,Alak,Yea,Katu, Ngea	Aka,Kui,Phuthai,Ko,Tri, Makong
Project areas	Phin: 25 villages	Taoi: SRV-11 villages	Long:LNT-10 villages
	Vilaboury:30 villages	Samouai: SRV-11 villages	Nalae:LNT-10villages
		Dakchung: SK-19 villages	Viengphoukha:LNT-10villages
		Kalum:SK-12 villages	Nong:SVK-20villages
		Phouvong:ATP-5 villages	Sepone:SVK-20villages
		Sanxay:ATP-12 villages	
Strategies	Community-based malaria control and preventio	Village-based approach	Peed-education approach

Thanks to successful malaria control…

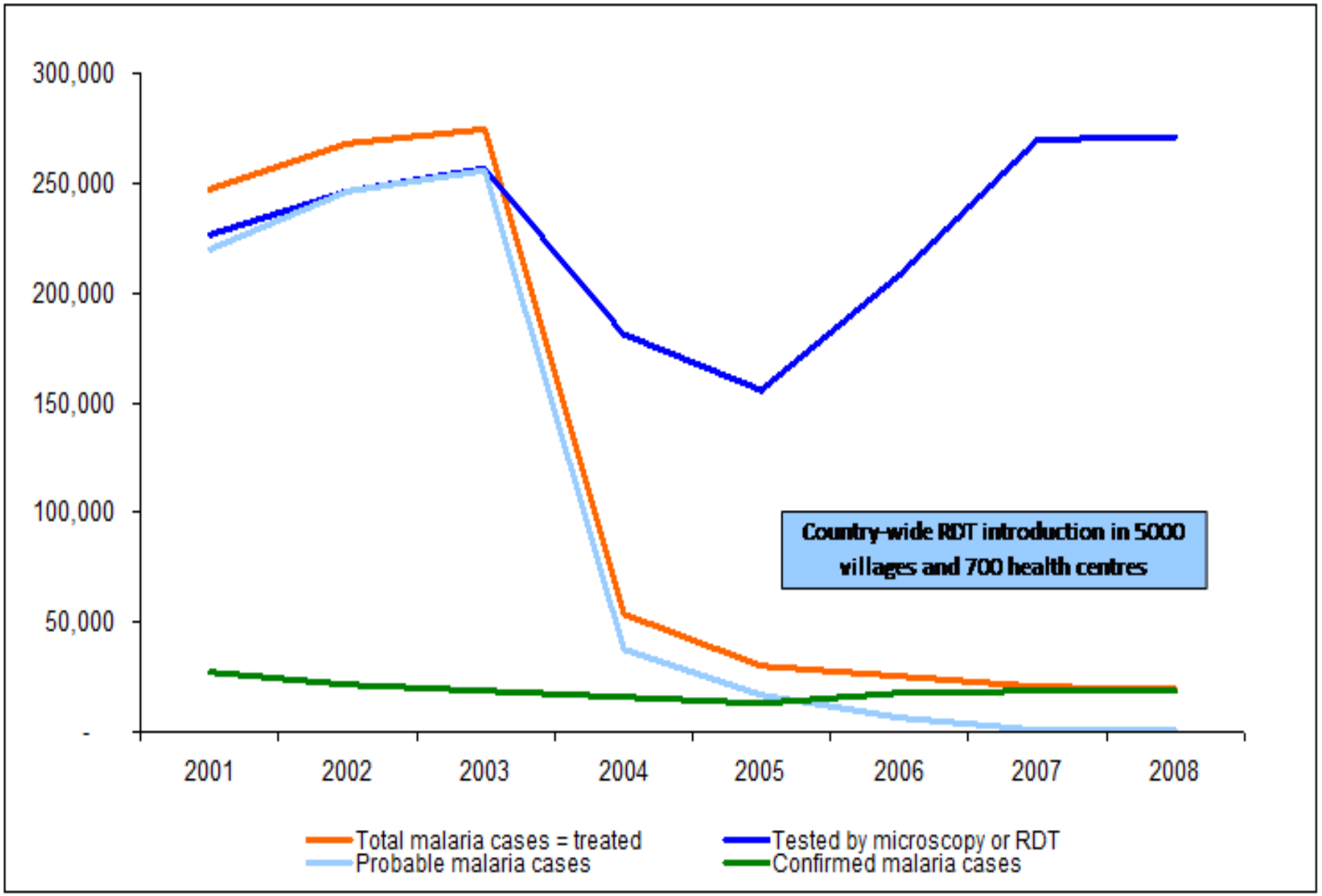
Malaria has decreased almost by 50% during this ten year (2000 – 2009) period.



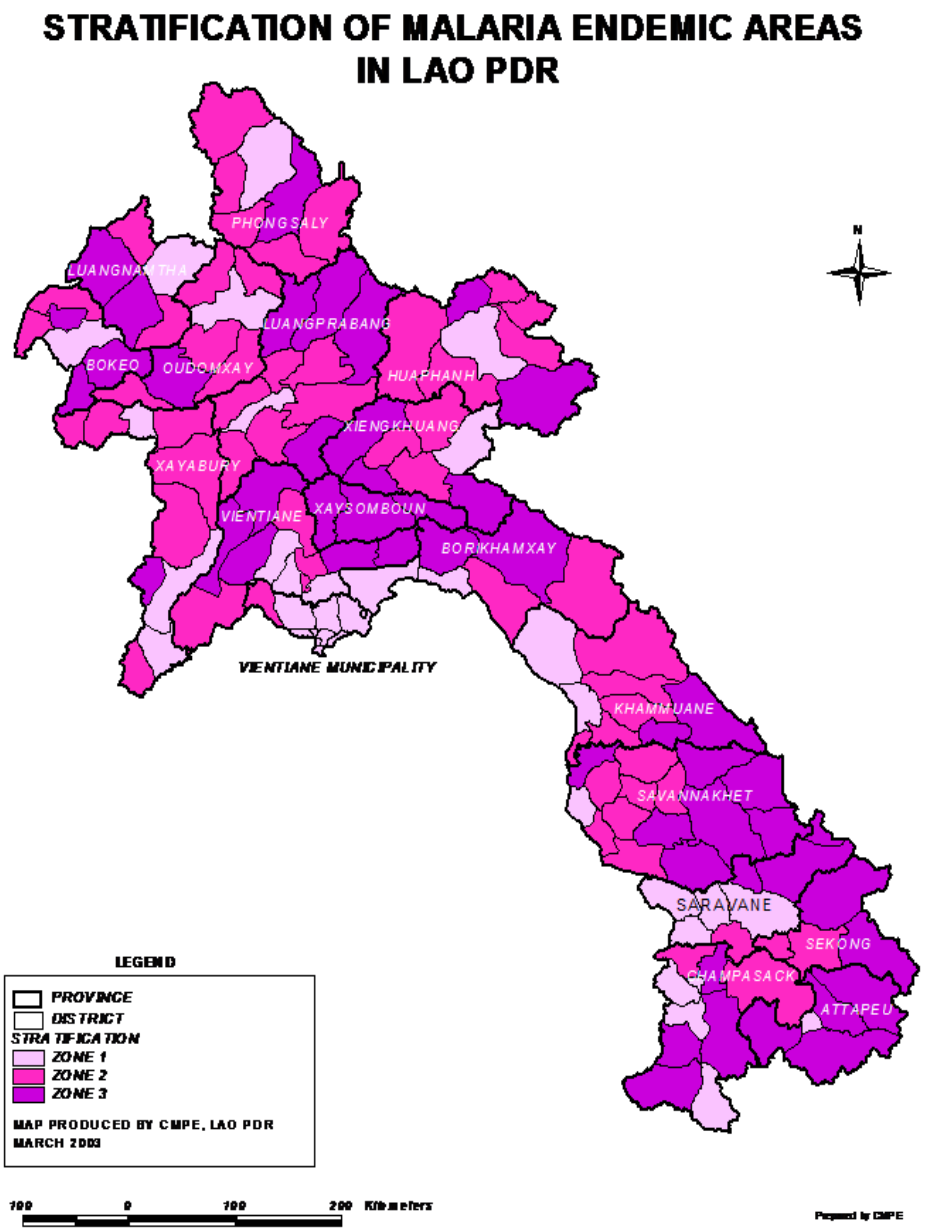




Progressive scale up of interventions – diagnosis and treatment



With the rapid decline in reported cases, in 2007 the NMCP realized there was an urgent need to re-stratify malaria risk areas in the country



The last stratification of malaria in the Lao PDR which classified the different zones was performed in 1997.

An updated map was produced in 2003. However, the methodology is not available.

The district was adopted as basic/lowest unit for stratification.

Background

- This old stratification model was used as baseline for the R1 and R4 GFATM grant (ie – identified the risk areas and estimated 3.6 million people at risk).
- There was no specific control strategies for the different risk areas, ie – low, moderate and high.
- As a result of the R1 and R4 GF grants, from 2003 – 2008, about 6,000 + villages of different risk levels in the whole country adopted the same control strategies.

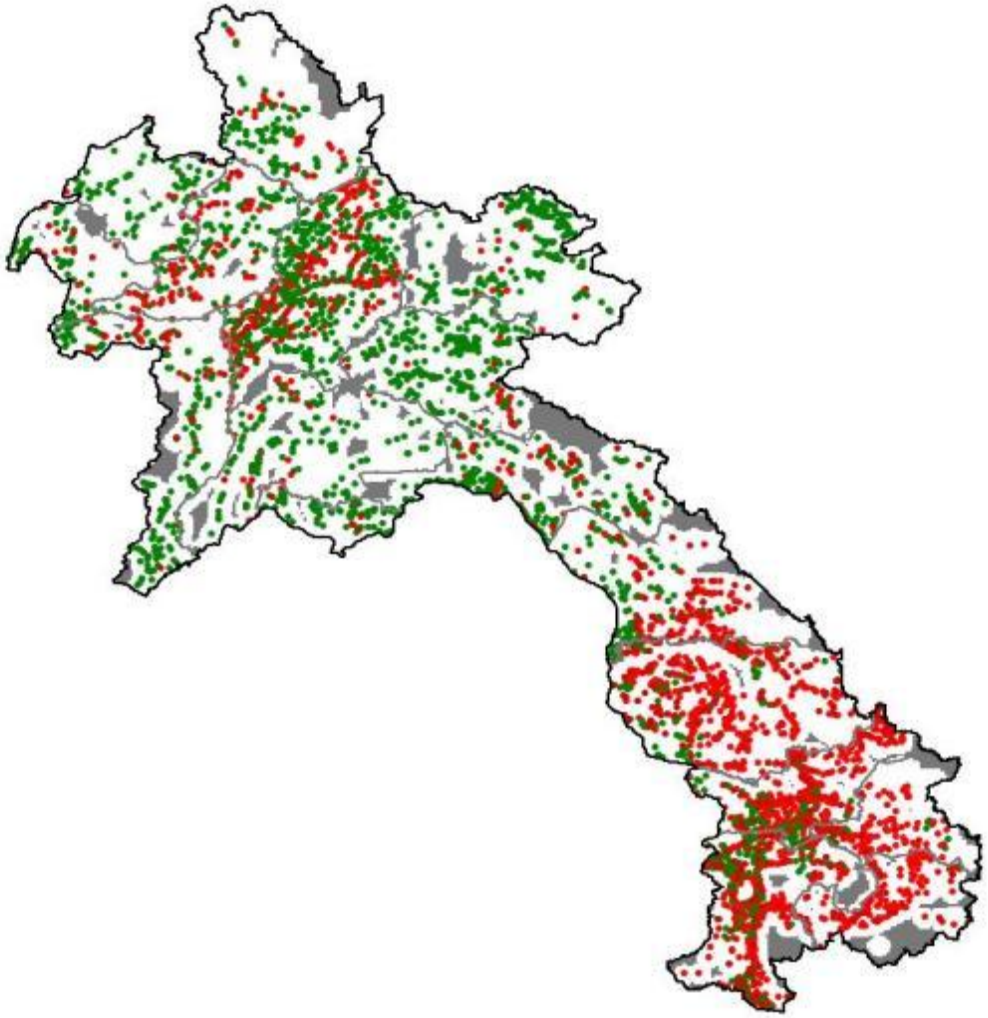
2006 – 2008 PCD/MIS data collection

- Between December 2008 and January 2009, CMPE initiated a nationwide data survey to collect monthly data on number of persons tested by RDT (or microscopy where available) and number of confirmed *P. falciparum* cases for the period 2006-2008 in health centres and villages with RDT/ACT.

- Information on when RDT/ACT was received in the village or health centre were also collected using a standard form for each district which contained the names of all villages and health centres which had been trained in using RDT/ACT.

- The survey was conducted in 135 districts throughout the 17 provinces. Five districts in Vientiane Capital Region which are considered malaria free were not included in the survey.

Confirmed P. falciparum cases by villages and health centres with rapid diagnostic tests, 2006 and 2008



Red dot: Village or health centre with at least one confirmed P. falciparum case between 2006 and 2008
Green dot: Village or health centre with no confirmed P. falciparum cases between 2006 and 2008

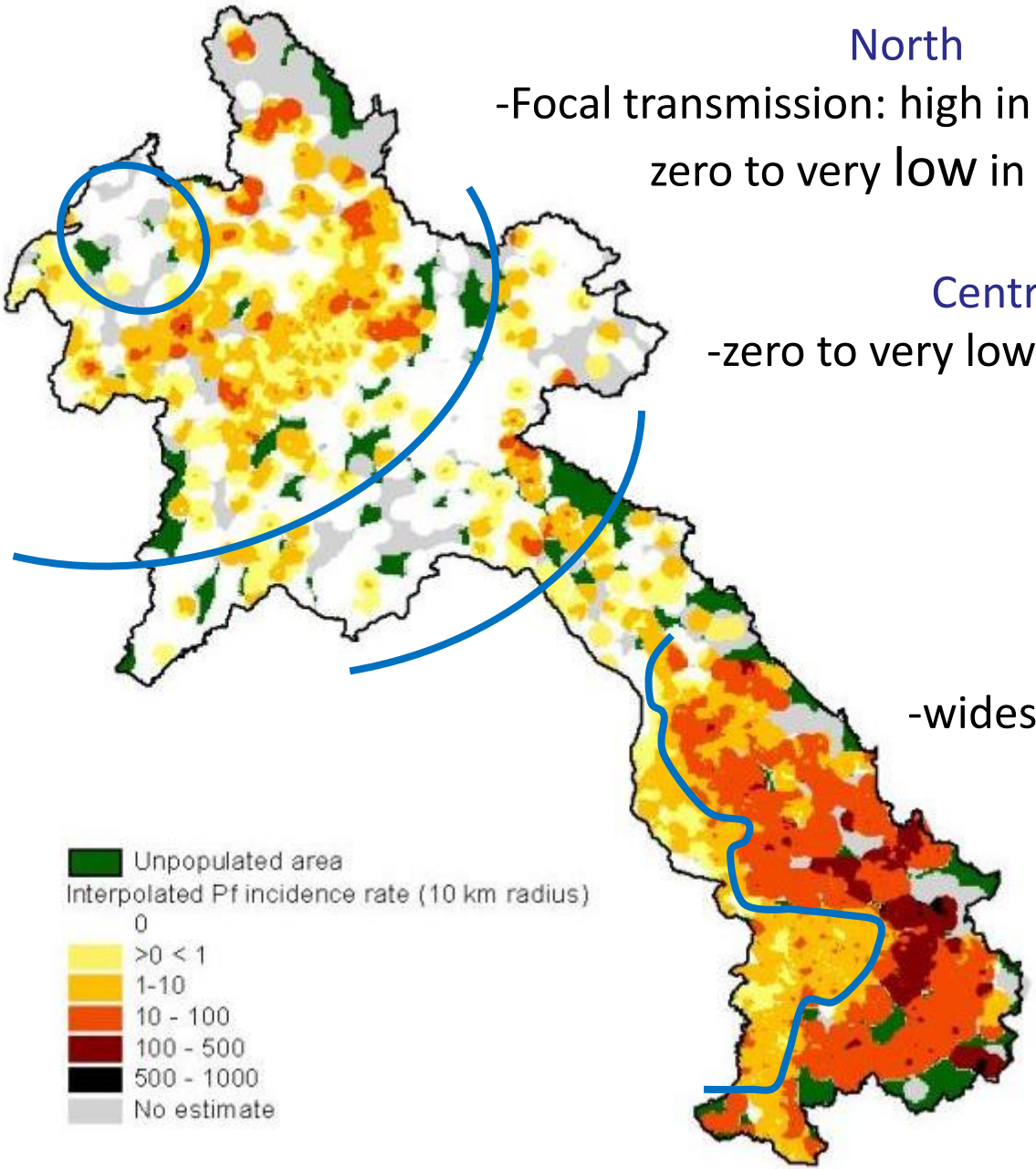
Source: CMPE, 2009

Red dot: Village or health center with at least one confirmed P.falciparum case between 2006 – 2008.

Green dot: Village or health center with no confirmed P.falciparum case between 2006 – 2008.

Grey areas – No data

Identification of epidemiological strata



North

-Focal transmission: high in some villages, zero to very low in others

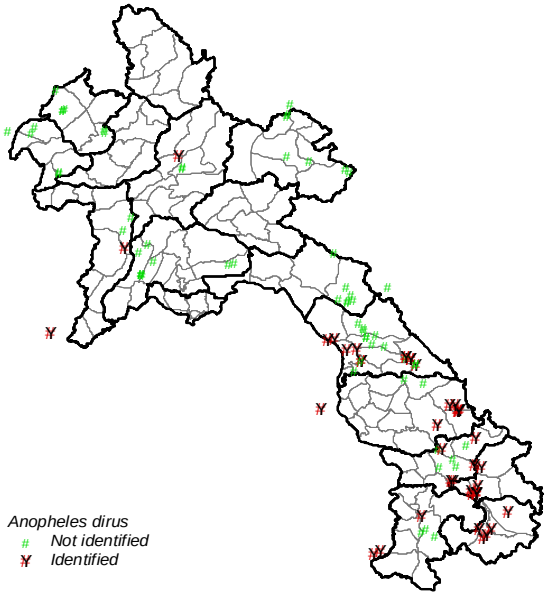
Central

-zero to very low transmission

South

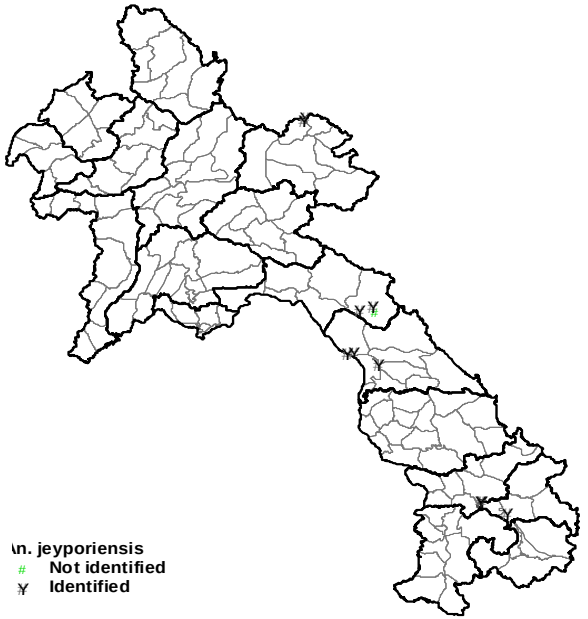
-widespread transmission

Vector distribution

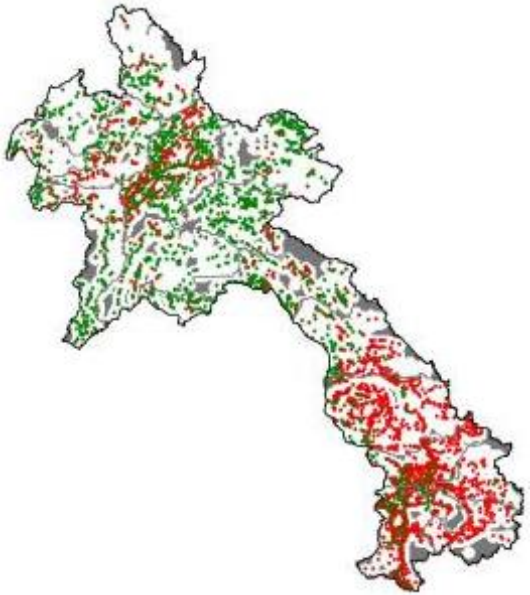


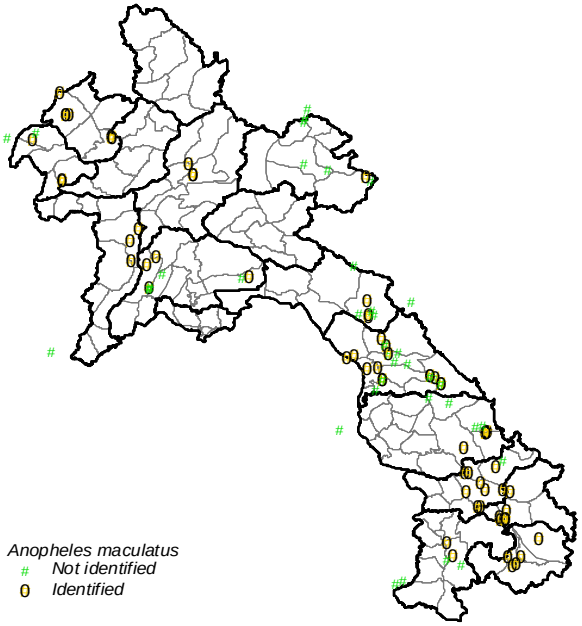
Anopheles dirus
Not identified
Identified

Source: CMPE, 2009



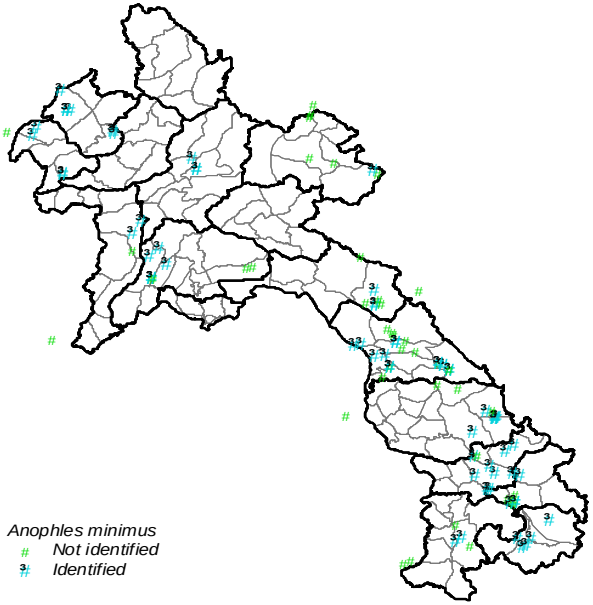
An. jeyporiensis
Not identified
Identified





Anopheles maculatus
Not identified
Identified

Source: CMPE, 2009



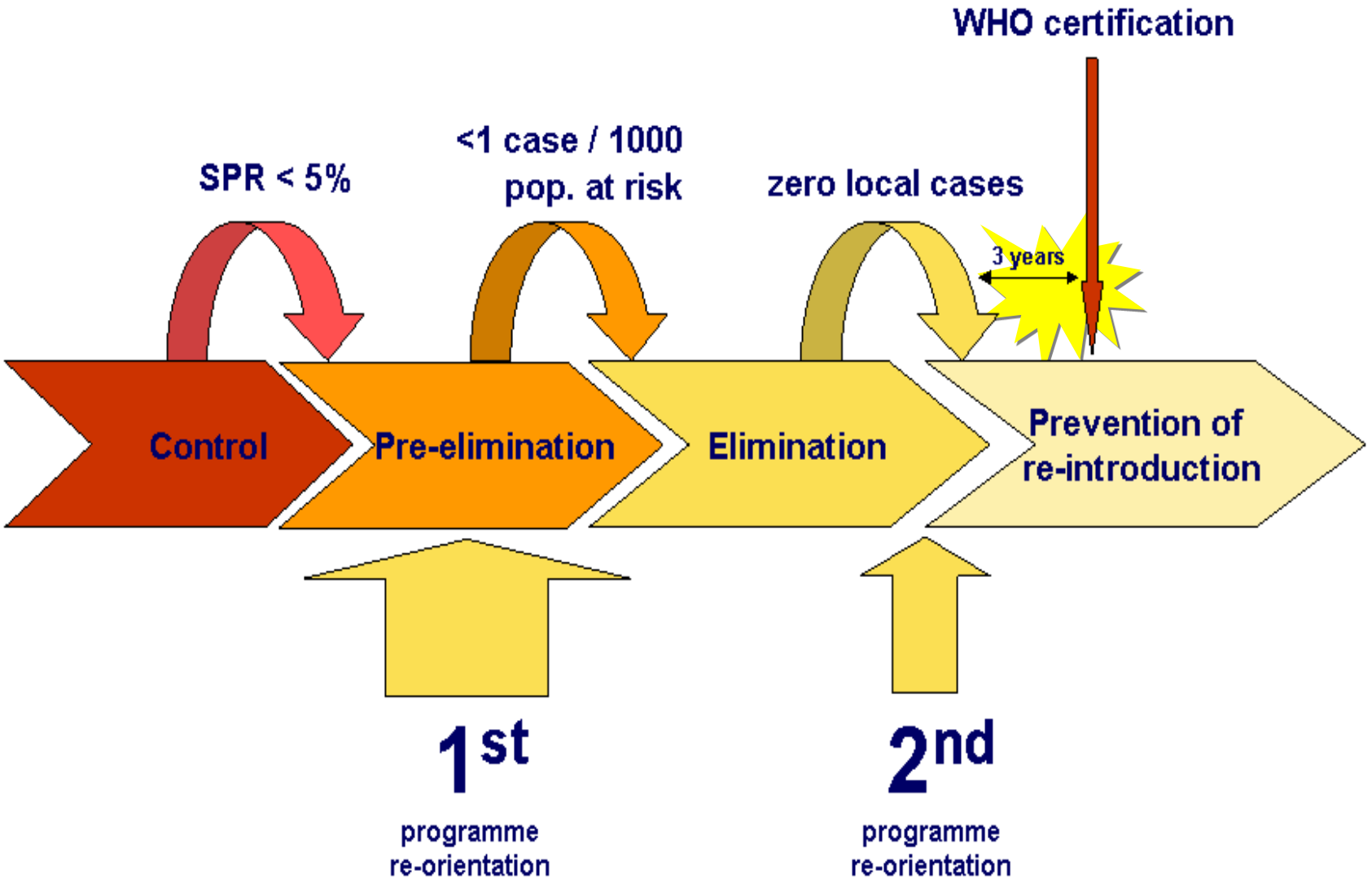
Anophles minimus
Not identified
Identified

Source: CMPE, 2009

Strata by Malaria Endemicity

ACI /1000	Strata	No. of villages
0-0.1	Strata 1	3,861
0.1-10	Strata 2	694
>10	Strata 3	649
Unknown incidence		621
		5,825

From malaria control to elimination



Population at risk in different incidence strata.

PROVINCES	Pop Stratum 1	Pop Stratum 2	Pop Stratum 3	'Unknown' risk	TOTAL pop
Incidence/1,000	0-0.1	0.1-10	>10		
VTC	58,434	1,542	-	-	59,976
PSL	59,060	1,409	1,040	43,993	105,502
LNT	81,542	756	-	6,850	89,148
ODX	106,236	15,122	590	5,101	127,049
BK	77,116	8,844	920	21,285	108,165
LPB	213,421	30,510	6,409	-	250,340
HP	118,659	2,282	125	35,764	156,830
XBL	162,274	4,861	427	6,343	173,905
XK	132,409	2,593	173	1,403	136,578
VTP	93,702	9,565	-	83,922	187,189
BLX	116,139	2,029	221	1,552	119,941
KM	71,016	15,384	8,201	16,943	111,544
SVK	131,714	110,796	67,371	9,212	319,093
SRV	66,710	51,299	47,455	-	165,464
SK	21,647	6,685	21,466	6,027	55,825
CPS	173,289	120,885	33,724	1,417	329,315
ATP	8,476	23,599	51,666	424	84,165
Total	1,691,844	408,161	239,788	240,236	**2,580,029**
	66%	16%	9%	9%	

Malaria risk villages /districts in different strata by province

	Strata 1 villages	Strata 2 villages	Strata 3 villages	Unknown risk	TOTAL villages
VTC	60	2	0	1	*63*
PSL	220	6	5	159	*390*
LNT	269	3	0	22	*294*
ODX	282	30	2	14	*328*
BK	175	5	1	57	*238*
LPB	526	80	24	0	*630*
HP	343	5	1	116	*465*
XYL	263	8	1	14	*286*
XK	336	5	1	4	*346*
VTP	135	11	0	118	*264*
BLX	238	3	1	5	*247*
KM	175	38	28	49	*290*
SVK	288	174	176	28	*666*
SRV	148	104	147	0	*399*
SK	75	17	83	31	*206*
CPS	305	167	71	1	*544*
ATP	23	36	108	2	*169*
districts	*131*	*86*	*57*	*58*	
villages	*3,861*	*694*	*649*	*621*	*5,825*
population	*1,691,844*	*239,788*	*408,161*	*240,236*	***2,580,029***

Surveys/studies conducted

- Bed net survey
- PCD survey
- ACD survey
- Entomology survey
- LLN acceptance and bioassay
- MIS survey
- Ethnic minority baseline survey
- IEC tools evaluation

So what next?

National Malaria Strategic Plan 2011-2015

- Based on the findings of the restratification exercise (ACD, PCD, EMG survey) and from routine programatic data, a revised National Malaria Strategy was justified.

- A Planning Log frame was developed, based on the Regional WHO Strategic Plan, with goal, objectives, activities and indicators.

- An estimated cost for the implementation of malaria control toward pre-elimination has been done.

Reprogramming

- Reprogramming existing GF Phase 2 grant with NSP elements……nightmare!

LAO PEOPLE'S DEMOCRATIC REPUBLIC

Peace Independence Democracy Unity Prosperity

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Ministry of Health

National Strategy for Malaria Control and Pre-Elimination

2011-2015

JULY 2010

World Health Organization

ສາທາລະນະລັດ ປະຊາທິປະໄຕ ປະຊາຊົນລາວ

ສັນຕິພາບ ເອກະລາດ ປະຊາທິປະໄຕ ເອກະພາບ ວັດທະນາຖາວອນ

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ກະຊວງສາທາລະນະສຸກ

ຍຸດທະສາດແຫ່ງຊາດການຄວບຄຸມ ແລະ ກະກຽມຈຳກັດໄຂ້ຍຸງ

ປີ 2011-2015

ກໍລະກົດ 2010

World Health Organization

NSP Goal

The overall goal of the National Strategy for Malaria Control and Elimination 2011-15 is to:

'Intensify malaria control efforts, targeting remaining endemic communities and key risk groups, and progressively roll out malaria elimination in selected provinces'.

8 objectives of the NSP 2011-2015

1. **Strengthening programme management**
2. Maximize access to effective vector control and personal protection measures.
3. Improve access to early, effective diagnosis for malaria.
4. Support routine malaria case management at community level in Stratum 3 villages and in selected private sector health facilities
5. Strengthen routine Malaria Information System
6. Maintain malaria epidemic preparedness and response capabilities.
7. Progressively roll out malaria elimination in selected provinces
8. Maximize utilization of malaria services through IEC/BCC and strengthen community mobilization efforts especially in elimination provinces

Impact targets

- Reduce annual incidence of uncomplicated malaria (probable and confirmed) to 0.8 cases per 1,000 population by 2015 (compared to 2008 baseline of 3.14 per 1,000 population).

- Reduce API (Annual Parasite Incidence) to 0.6 per 1,000 population by 2015 (compared to 2008 baseline of 3.13 per 1,000 population).

- Maintain the number of reported malaria deaths in hospital at below 15 per annum throughout the programme period (compared with a 2008 baseline of 11 malaria deaths in hospital).

Objective 3 - Improve access to early, effective diagnosis for malaria.

3.1 Maintain and strengthen public sector microscopy network.
3.2 Develop and implement robust QA for microscopy (including establishment of 3 regional reference laboratories).
3.3 Provide combination-RDT based diagnosis at all Stratum 3 villages through VMW network.
3.4 Support combination-RDT based diagnosis at all public sector health facilities (for use in emergencies, for post-treatment diagnosis and for when microscopy services are not available).
3.5 Support parasite based diagnosis at selected private sector pharmacies and clinics.
3.6 Implement G6PD testing at all public sector health facilities and by all VMWs once technology available.
3.7 Develop and maintain high throughput PCR based diagnostic facility.

Objective 3 – indicators

-

% of suspected malaria cases with parasite based diagnosis *(WPRO indicator)*

% of microscopy points fully functional for at least 11 months per year

% of microscopists with sensitivity >95% [and specificity >98%]

- % of Stratum 3 villages with no stock out of combi-RDTs during the last 12 months *(WPRO indicator)*

- % of health facilities with no stock out of combi-RDTs during the last 12 months *(WPRO indicator)*

- % of target private sector pharmacies/clinics participating.

Human Resource

strata 3	strata 2	strata 1	unknown risk
649	694	3,875	623
VMW, HC, District and Provincial	VHV, HC, District and Provincial	HC, District and Provincial	VHV, HC, District and Provincial
VMW: village malaria worker: paid			
VHW: village malaria volunteer: voluntary			
BY 2011, all villages in strata 'unknown risk' will be relisted under strata 1,2 or 3			

Vector control and personal protection

strata 3	strata 2	strata 1	unknown risk
649	694	3,875	623
free LLN to all	free LLN to all	pop procure new nets from private	free LLN to all
free LLN to pregnant women attending ANC or TBA	free LLN to pregnant women attending ANC or TBA		free LLN to pregnant women attending ANC or TBA
engage through regular meetings with project developers	engage through regular meetings with project developers		
retreat existing ITN (including army/police) with long lasting insecticide for R7Y3 only	retreat existing ITN (including army/police) with long lasting insecticide for R7Y3 only	retreat existing ITN (including army/police) with long lasting insecticide for R7Y3 only	

Vector control and personal protection (cont..)

strata 3	strata 2	strata 1	unknown risk
649	694	3,875	623
retreat existing ITN (including army/police) with long lasting insecticide for R7Y3 only	retreat existing ITN (including army/police) with long lasting insecticide for R7Y3 only	retreat existing ITN (including army/police) with long lasting insecticide for R7Y3 only	
provide single LLN to mobile populations			provide single LLN to mobile populations
insect repellent through VMW and PAMS&DAMS			
** *IRS plan to be finalized 1st Q Y3*			

EDAT

strata 3	strata 2	strata 1	unknown risk
649	694	3,875	623
Combo RDT down to village	Combo RDT down to village	Combo RDT down to HC	Combo RDT down to village
G6PD testing down to HC	G6PD testing down to HC	G6PD testing down to HC	G6PD testing down to HC
ACT down to village	ACT down to village	ACT down to HC	ACT down to village
PQ down to HC	PQ down to HC	PQ down to HC	PQ down to HC

IEC

strata 3	strata 2	strata 1	unknown risk
649	694	3,875	623
IPC through VMW, Mass media	Community outreach through district team, mass media	Mass media only	Community outreach district team, mass media

Public-Private Initiative for EDAT

- A pilot initiative to involve the private sector in diagnosis and treatment for malaria

- The PPM for malaria, in the 1st 18months of its implementation involved a total of 95 private providers (10 clinics and 85 pharmacies) were in the 8 districts of 4 provinces.

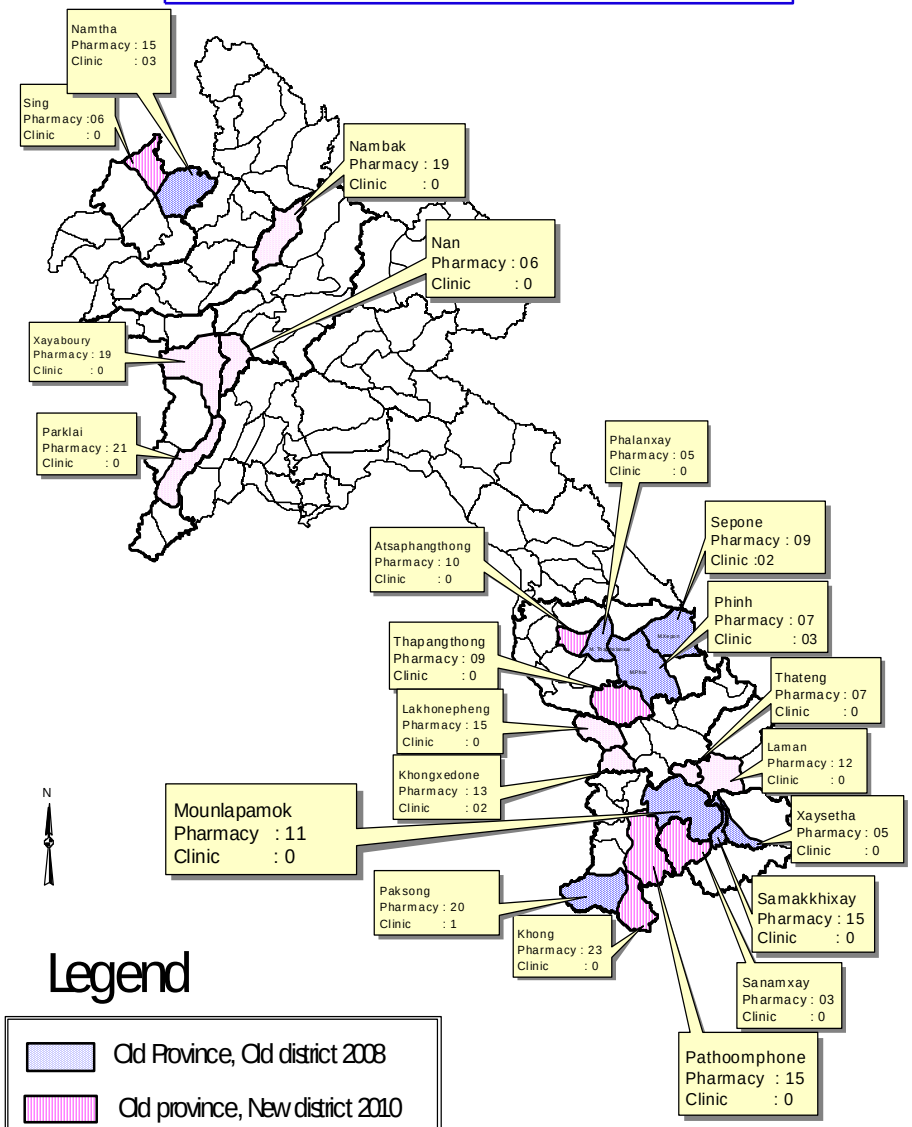
- The PPM is primarily intended to :

1. Improve population access to RDT and ACT

2. Improve the quality of service provided by the private sector, (compliance to the national malaria STGs, decreasing need for fake/substandard antimalarials and artesunate monotherapy.

3. Improve the comprehensiveness of the national malaria statistics by including information on patients tested, treated and referred from the private sector.

Map of PPM in Laos as of June 2010



Provision of drugs and diagnostic kits for private sectors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ກະຊວງສາທາລະນະສຸກ

ກົມອະນາໄມ - ກັນພະຍາດ

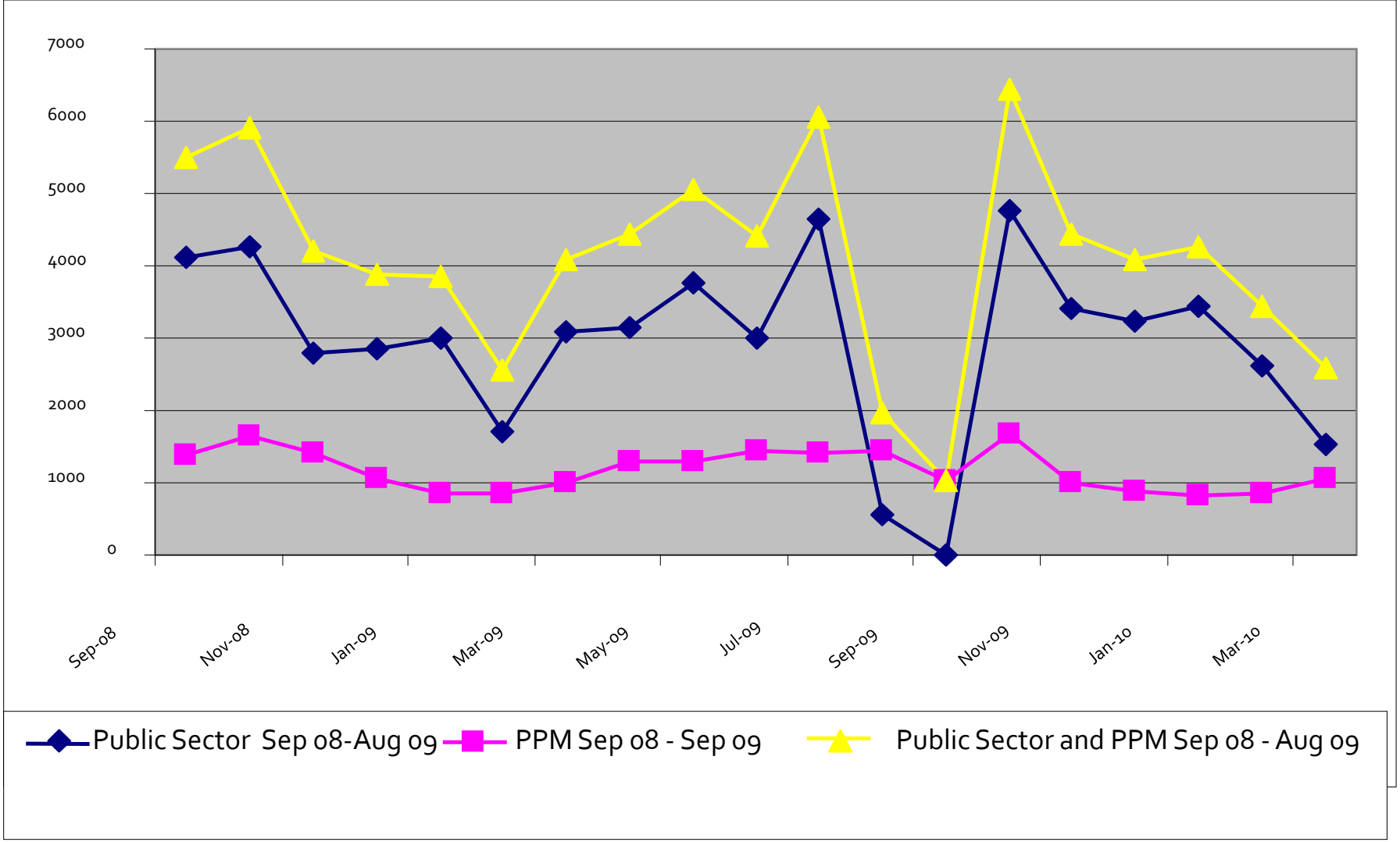
ຄູ່ມືນຳໃຊ້

ຂັ້ນຕອນການປະຕິບັດທີ່ເປັນມາດຕະຖານ
ກ່ຽວກັບການມີສ່ວນຮ່ວມພາກລັດ - ເອກະຊົນ
ການກວດເລືອດເບື້ອງຕົ້ນ ແລະຢາຍຢາໄຂ້ຍຸງ

ສະໜັບສະໜູນໂດຍ

ກອງທຶນໂລກຕ້ານເອດ, ວັນນະໂລກ ແລະໄຂ້ຍຸງ

Public Private Mix (PPM) for malaria diagnosis and treatment



18 months	
tested	22,088
Pf	2,815
Test positivity rate	13%

In comparision with a test positivity rate of 6.9% for the country in the public sector alone for 2008.

Remaining gaps within the NMCP?

Challenges

- Maintaining village based diagnosis and treatment in high risk areas with Combo RDT for diagnosis and radical treatment with Primaquine for P. vivax infections
- Integration of surveillance and response activities within national surveillance systems
- Expanding and integration of VHV scope of work (ie, including other diseases – ARI, diarrheal disease etc) and harmonizing incentive mechanisms among various stakeholders
- Strengthening capacity of central, provincial and district staff in early detection and prompt response of outbreaks
- Adopting effective pro-active strategies for addressing external risk factors like deforestation, plantation, mining and hydro dam and road development projects

- Health Systems Strengthening – Human Resource development, incentives, capacity building at provincial/district levels, integration of service delivery and surveillance & response
- Operational research and piloting/integration of recommended results.
- IEC/BCC – CIEH (national IEC center, MoH) NSP framework needed
- Elimination/pre-elimination
- Better supply chain management – SMS pilot?

Impact of rapid development : Plantations, hydro dams, road construction, mining

-Change in vector ecology – predominant species, biting times

- influx of foreign workers – resistant strains, increase in Pv, self medication and increase in substandard antimalarials and monotherapies

- local population displacement – highland to lowland, low immunity and no protection, loss of traditional occupation, more forest based activities, engaged in development projects

Rubber Plantations

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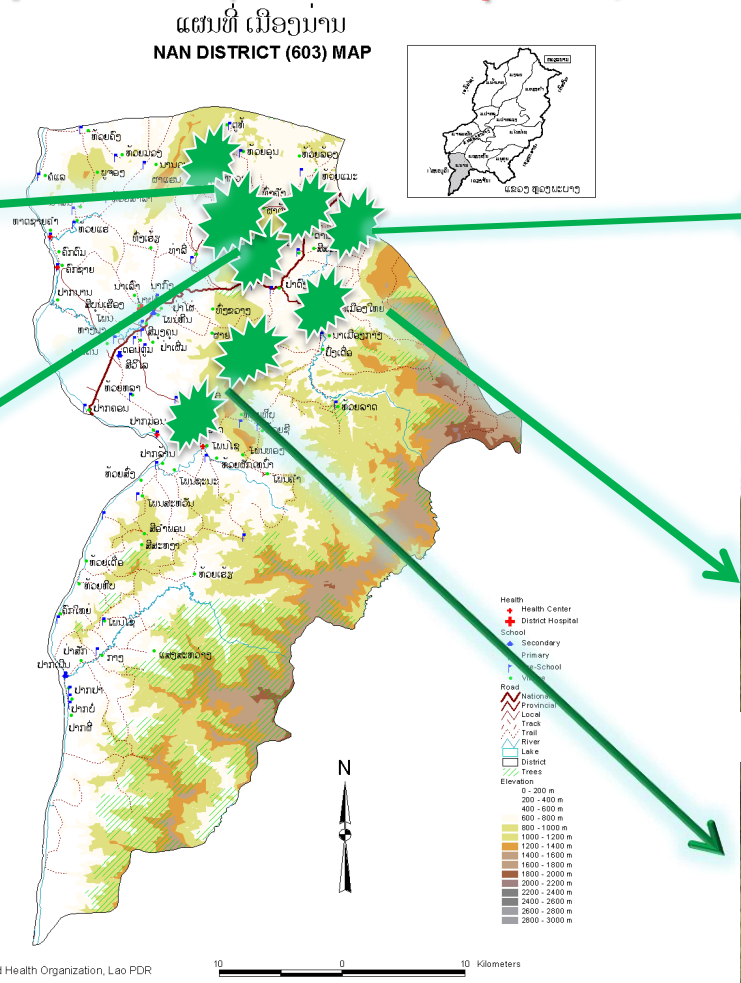
1.®ðìò¦ñ© §ó¸½-¾Å²ñ-(¦¯¥ó-) 275 »ª

2.®ðìò¦ñ© ¥‰¤À»ó (¦¯¥ó-) 650 »ª

3.¯½§¾§ö- 357 »ª

À-õºê† êñ¤Ïö©¢º¤ 2 ®ðìò¦ñ© 1, 282 »ª



Population Movement

Active transmission is still occurring in remote forested foci, and human migration from these endemic foci to non-transmission areas can reintroduce the disease in areas now free of malaria, especially among the migrating population from the highlands and vice versa.

Hydro Dams

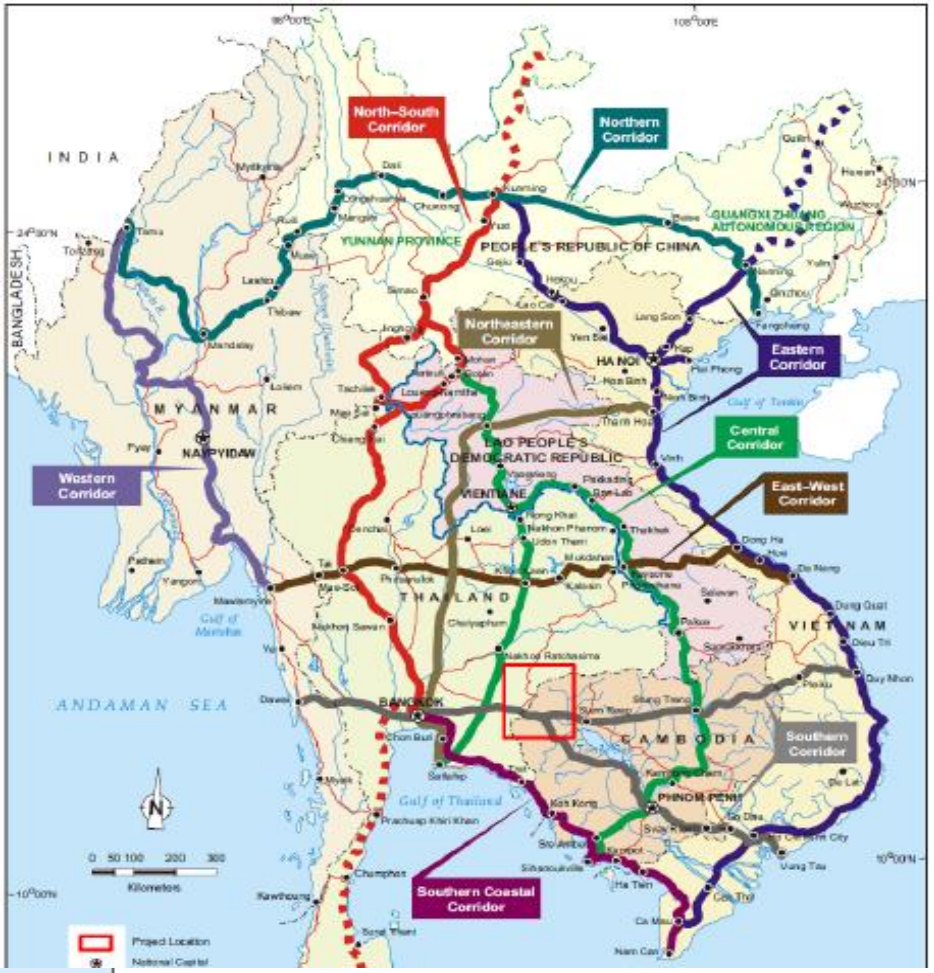
Hydrodams
- # 2009 - 2010
- # 2011 - 2012
- # 2013 - 2015
- r No data

Interpolated Pf incidence rate (10 km radius)
- 0
- >0 < 1
- 1-10
- 10 - 100
- 100 - 500
- 500 - 1000

Road construction

GMS Flagship Initiative

EAST-WEST ECONOMIC CORRIDOR



ADB

IOM International Organization for Migration

For Life, With Love

Training Tool for HIV Prevention and Safe Migration
in Road Construction Settings and Affected Communities

What is planned (2010-2012) and assistance needed

- Liaise with project developers
  - provincial level
  - district level

Other health and non health sectors involved

- water& sanitation, MCH, EPI, forestry, agriculture, mining, energy, governor, labour, road etc

- Regular stakeholder meetings, advocacy, ‘win-win’, extension of PPM to project development sites, insecticide and re-treatment of nets

Operational Research

Proposed
-Epidemiology of malaria among mobile workers in development projects (mining, rubber plantation, dam construction…)
-An investigation of continuing malaria transmission in villages with high ITN coverage and access to EDAT
-An assessment of Primary School Based treatment and distribution of Bed nets in remote areas of Laos.
-Mapping of G6PD deficiency in Laos, field based testing and clinical trials for safe dosage of Primaquine
-An assessment of incentive schemes for improving the performance of VHVs participating in Malaria, TB and HIV/AIDS
-Strengthen supply management at all levels monitoring stocks through SMS text messaging
- Feasibility studies for suitable malaria prevention methods for forest goers

"SMS for Life"

Improving medicine access through innovation

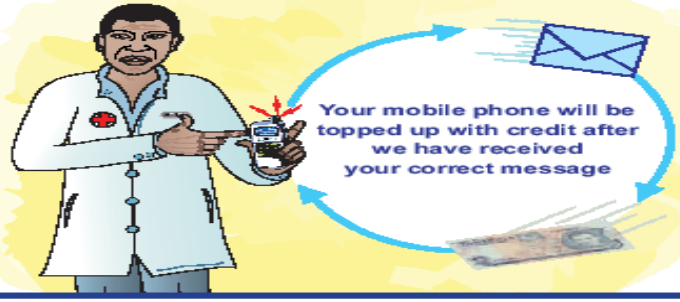
A Roll Back Malaria Partnership Initiative

1 Receive a text message requesting stock information

2 Count stock

3 Compose and send an SMS message to: 15009

4 Receive free air time credit



Message enters central database

Stock information is visible on Google Maps

Appropriate action is taken

ROLL BACK MALARIA

NOVARTIS

The United Republic of Tanzania Ministry of Health and Social Welfare

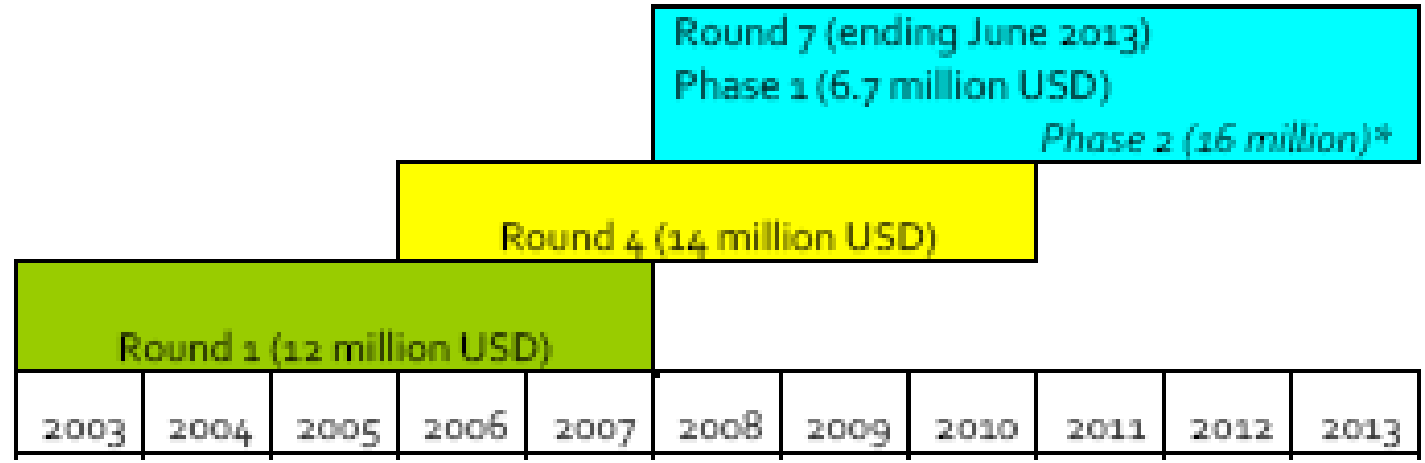
vodafone

vodacom

IBM

NMCP Financing

	2008	2009	2010	2011	2012
National funding resources (USD) [Communicable diseases]	726,547	756,309	850,119	NA	NA
External source: Private Sector/grants/ contributions (International) (USD)	4,105,820	2,634,963	6,657,545	4,046,401	5,394,516
TOTAL	4,700,732	3,289,366	7,377,388	4,838,228	6,265,526



* Subject to GFATM approval

Thank you for your attention