



IMPACT OF IRS ON MALARIA CONTROL IN INDIA

Dr. R. S. Sharma

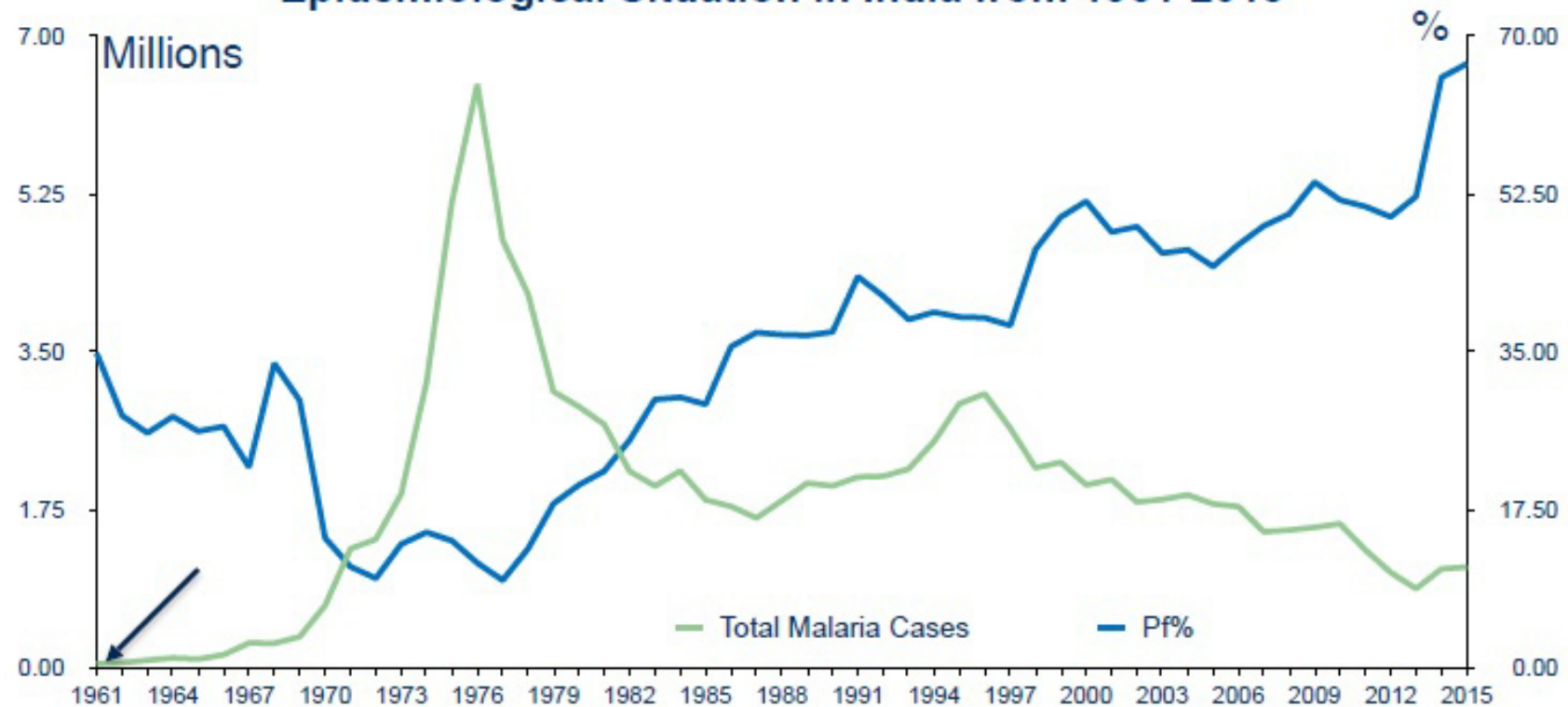
Former Scientist/Additional Director

HOD, Centre for Medical Entomology & Vector Management, India

ranjandersharma@gmail.com

Malaria Situation in India

Epidemiological Situation in India from 1961-2015



IRS FOR MALARIA VECTORS in India

An. culicifacies



An. stephensi



An. fluviatilis



An. minimus



An. dirus



An. sundaicus



An. culicifacies



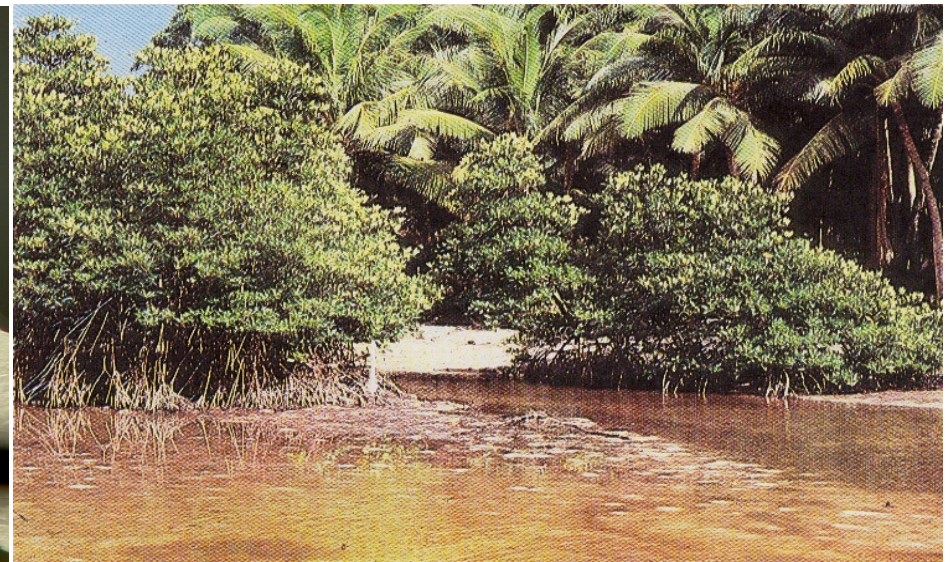
*Monsoon associated
species*

*An. culicifacies
(Epidemic vector)*

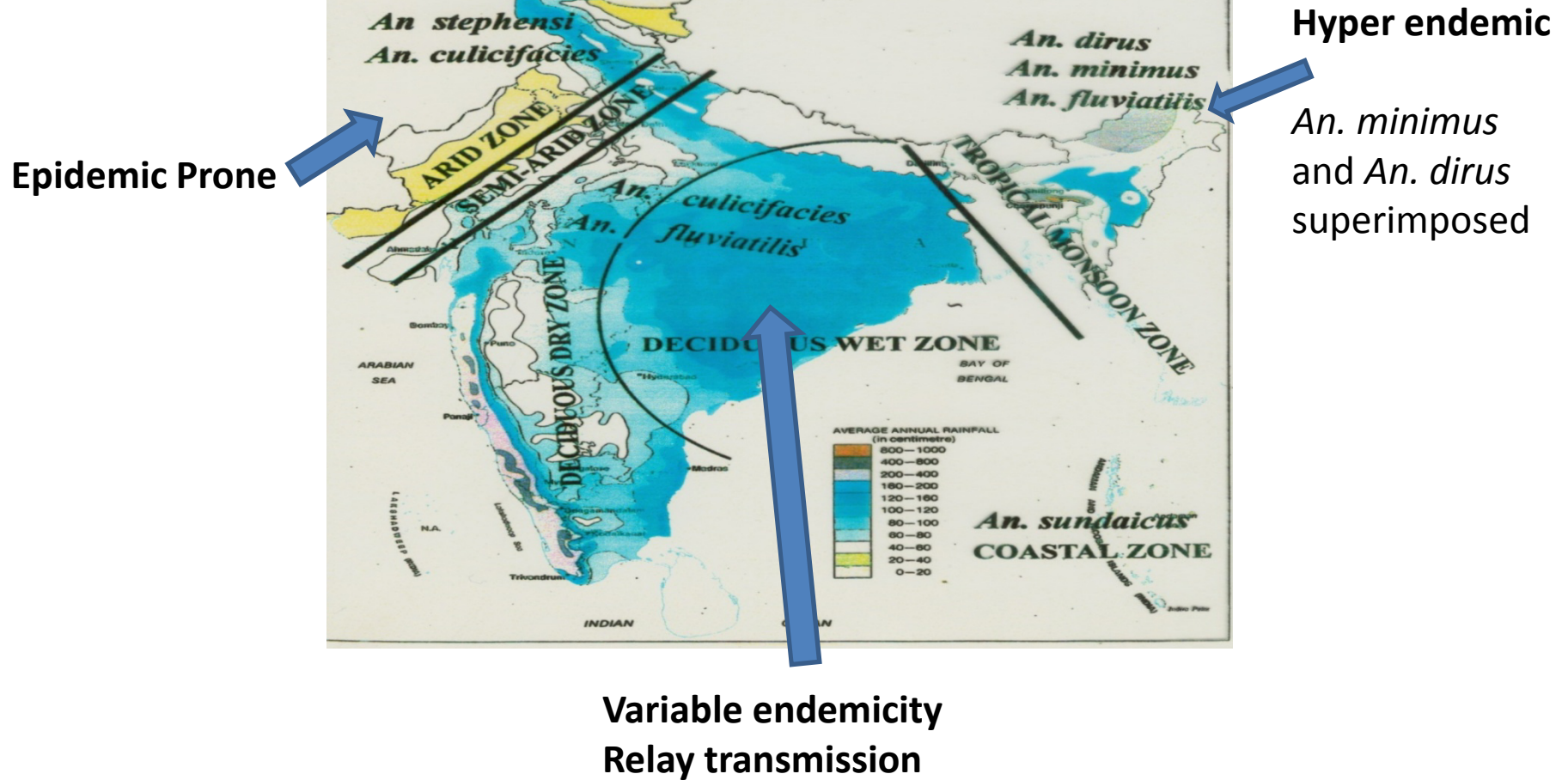
Responsible for 60-70% malaria in India



An. dirus and *An. sundiacus*



CLIMATIC ZONES AND NATURAL DISTRIBUTION OF MALARIA VECTORS IN INDIA



Malaria

VECTOR CONTROL STRATEGY-INDIA

Designed on concept of Macro level Epidemiology

- ✓ IRS in areas with >2 API
- ✓ LLIN - 11 million LLINs distributed
- ✓ Biological Control (Fish)
- ✓ Urban- Anti-larval measures
- ✓ Civic Bye-laws
- ✓ Legislative measures
 - Model civic bye-laws: Promulgation and implementation with provisions to prevent/eliminate mosquito breeding
 - Building bye-laws: Provision to prevent mosquito breeding conditions and clauses in the contract to keep curing tanks free of mosquito breeding during construction phase and dismantling of the same before issuance of occupancy certificate



IRS –Micro Action Plan, INDIA

Planning

Country Targeted Pop (TP)for IRS = 86.3 M > 2 API

Pop. Covered (PC) = 66.4 M

»

TP

PC

Ins. Cal.

– DDT

40.7 M

24.6 M@ 150 MT

– Malathion

10.3 M

9.6 M @ 900 MT

– Synthetic Pyrethroids

35.3 M

32.2 M @ 60 MT

(DELTAMETHRIN)

Spray Squads

IRS Norms - 52 squads per Million

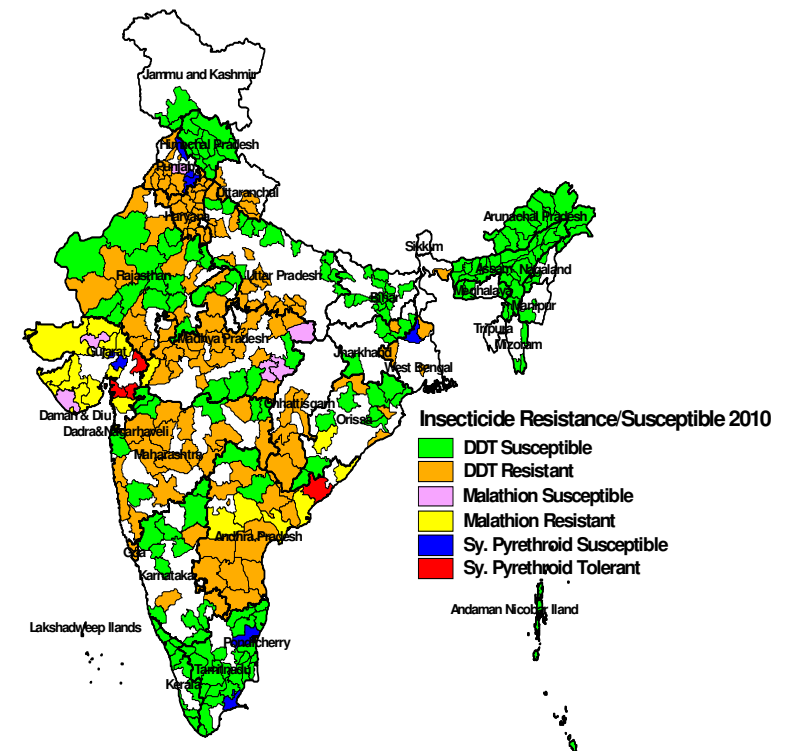
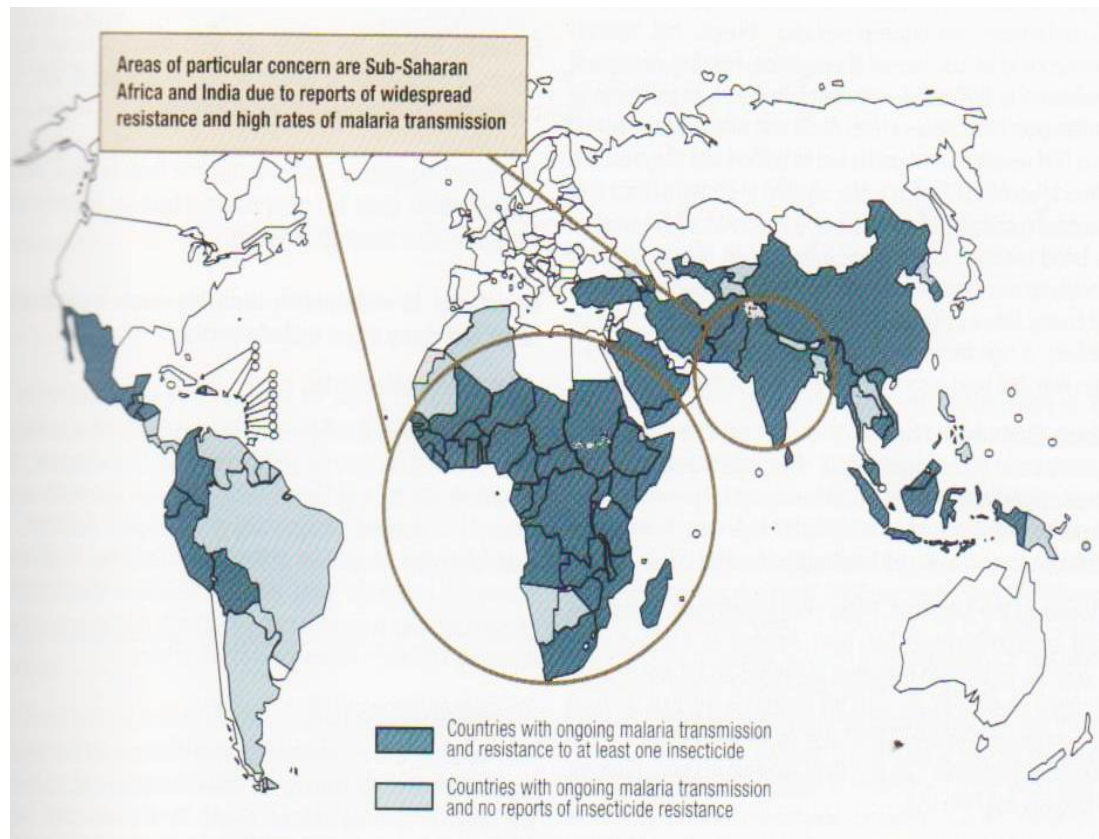
Capacity
Building

Implement
Action

Monitoring &
Supervision

Evidence
Based Impact

Susceptibility /Resistant status of malaria vectors with insecticides



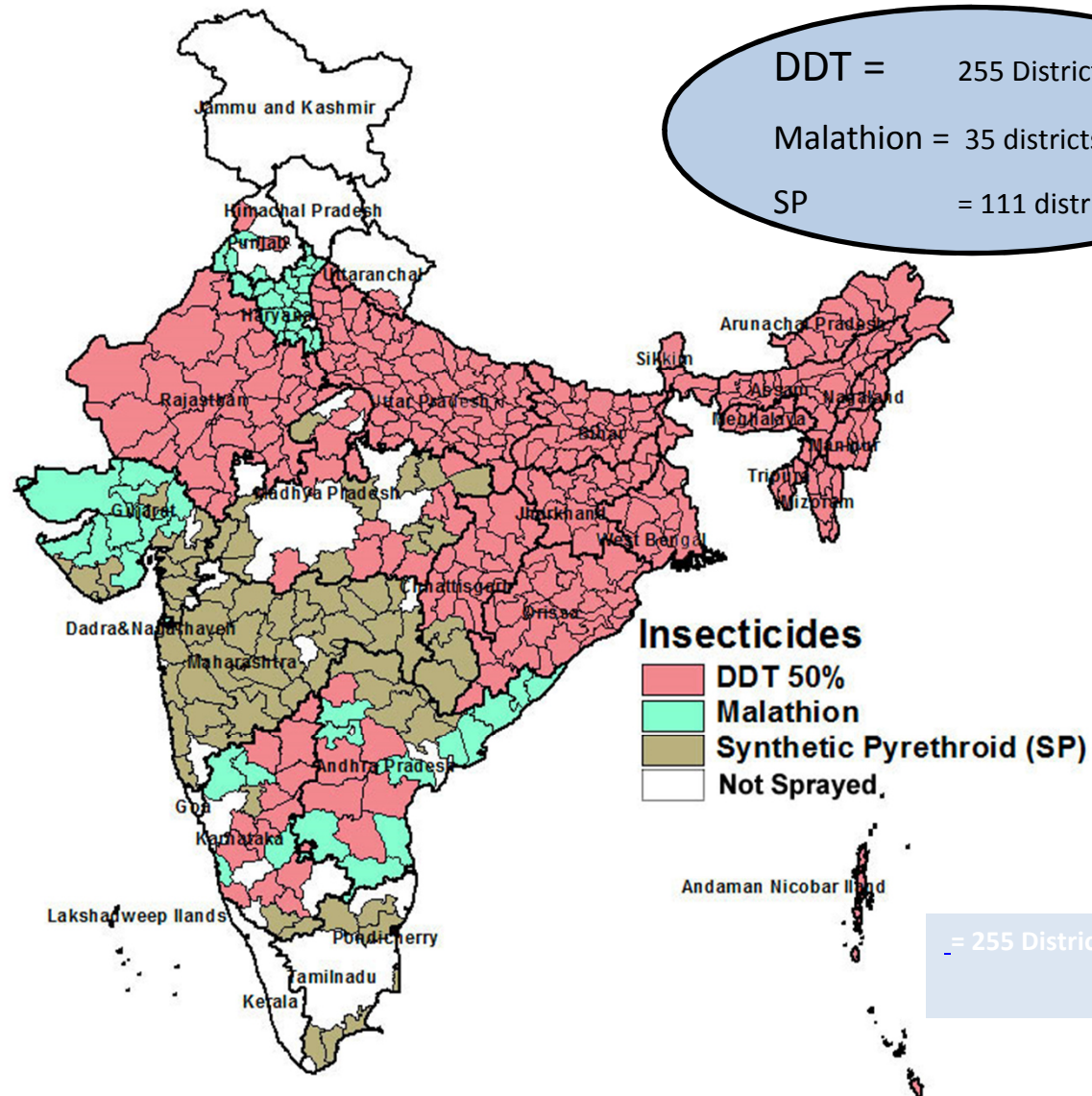
IRS MICRO ACTION PLAN

Delineation of areas for IRS

DDT = 255 Districts

Malathion = 35 districts

SP = 111 districts



= 255 Districts

CAPACITY BUILDING FOR IRS



Training of trainers workshop (for DMO, VBD, MI and MTS) in Jagdalpur (Chattishgarh),



Training of trainers workshop (for DMO, VBD, MI and MTS) in Raipur (Chattishgarh),



Training of trainers workshop (for DMO, VBD, MI and MTS) in Bilaspur (Chattishgarh),



Handholding training for spray workers at Sahasra DMO office, Bihar,

Monitoring and Evaluation indicators-IRS

INPUT INDICATORS

- ❑ Capacity Building of Spray Personnel
- ❑ Adequacy of PPE
- ❑ Safeguards for Staging Area
- ❑ Safe Transportation of Insecticides
- ❑ Safe Storage of Pesticide

Handholding Training Conducted

PPE Availability/PPE Requirement

Availability of Polythene Sheet

Mode of Transportation of Insecticides

*Location of Storage
Condition of Storage*

PROCESS INDICATORS

- ❑ Capacity Building of Spray Personnel
- ❑ Depth of training
- ❑ Community level Planning for IRS
- ❑ Safeguards during IRS

Trainers in the Handholding Training

Trainee in the Handholding Training

Availability of Prior Information

*Food & Household Goods Covered
Presence of Children
Domestic Animals kept of spraying*

- ❑ Usage of PPE by Spray Personnel
- ❑ Safeguards for Staging Area
- ❑ Safe Storage of Insecticides
- ❑ Involvement & Awareness of Spray Staff
- ❑ Awareness of Community
- ❑ Penetration of Training
- ❑ Usage of PPE by Spray Personnel

Output INDICATORS

Extent of PPE Usage by Solution Prepare
Extent of PPE Usage by Pump man

Usage of Polythene Sheet in Staging Area

Use of Staging Area during IRS
Non Target Areas sprayed
Spillage on Ground

Safeguards for Storage

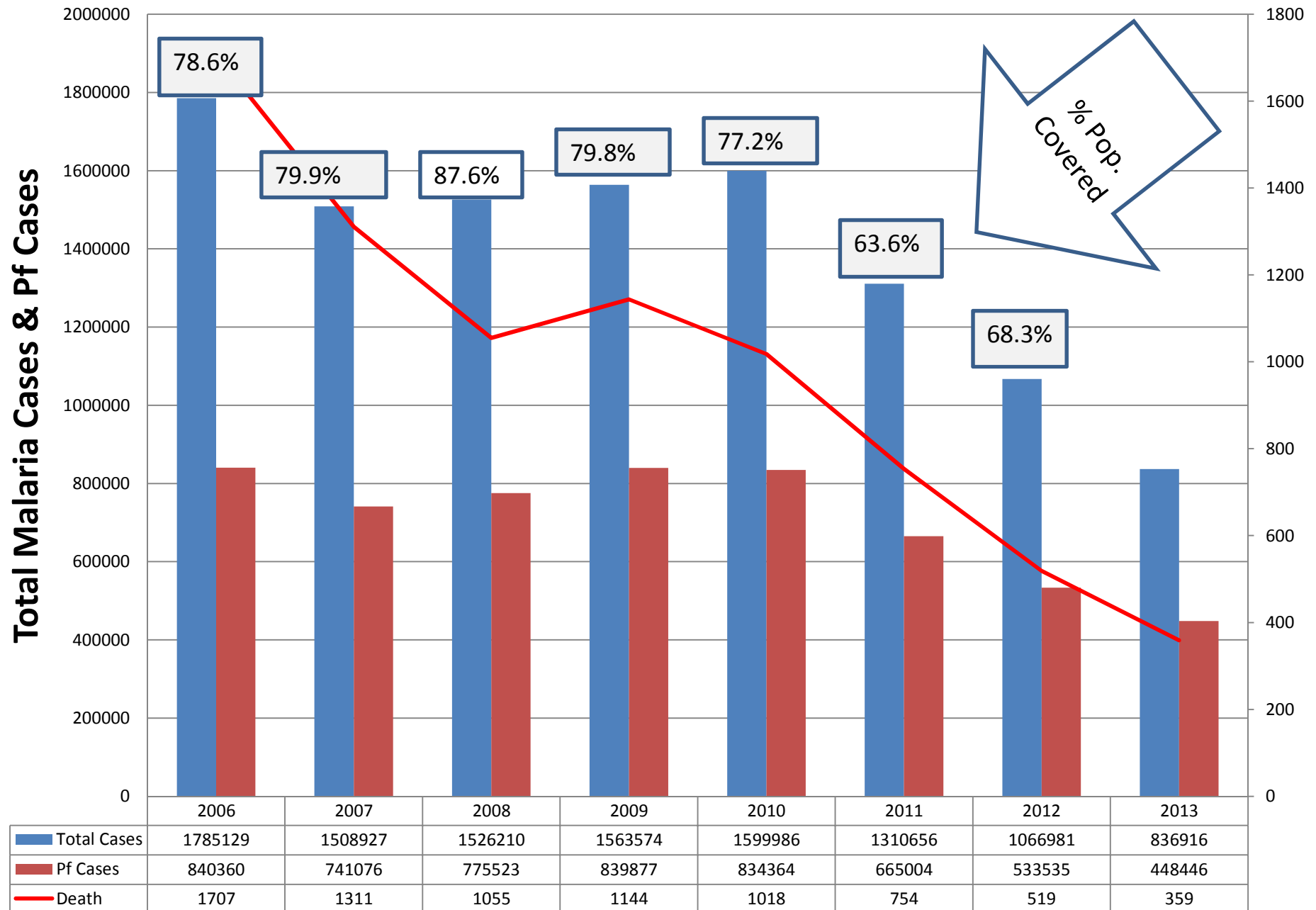
Output INDICATORS

Awareness of SFW/BHI
Involvement of ASHA

Awareness of Community - Env Safeguards

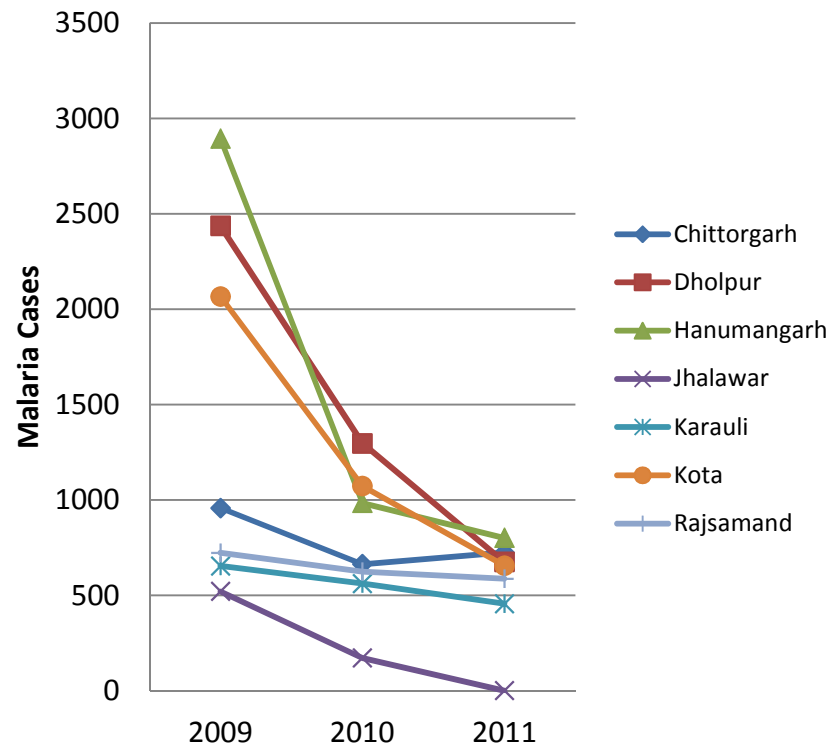
Personnel's knowledge of Env Aspects
Extent of PPE Usage by Sprayer

Impact of IRS – Malaria

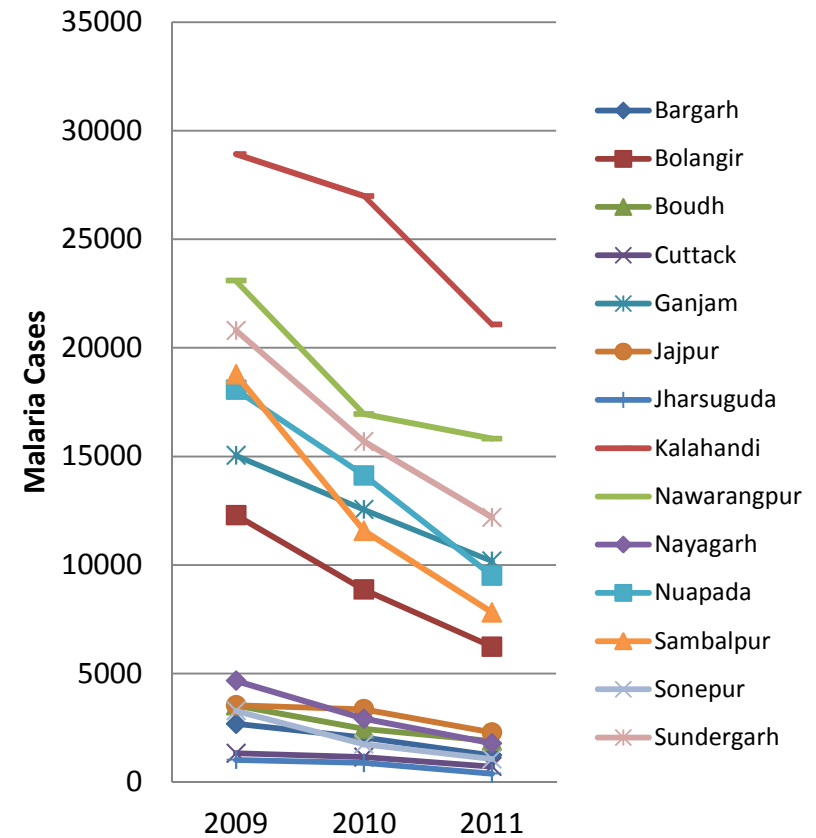


IMPACT OF IRS

Trend of Malaria Cases - Rajasthan



Trend of Malaria Cases - Orissa



ENVIRONMENTAL CODE OF PRACTICE(EMP) FOR IRS

ENVIRONMENTAL CODES OF PRACTICE



The ECoP series Contain:

1. Transport of Insecticides for IRS activities
2. Storage and Management of Insecticides Stock
3. Community Responsibility During IRS
4. Use and Maintenance of Personal Protective Equipment (PPE)
5. Indoor Residual Spraying (IRS)
6. Disposal of waste water, empty bags/ Containers and bio-medical wastes

THANKS