FINAL REPORT

Social and Beneficiary Assessment (SABA) for Indigenous People Development Plan Under the World Bank Assisted Vector Borne Disease Control Programme

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ANNEXURES

ABBREVIATIONS

ADL	Adenolymphangitis
AES	Acute Encephalitis Syndrome
BPL	Below Poverty Line
CIB	Central Insecticide Board
DDC	Drug Distribution Centres
DEC	Diethylcarbamazine
DF	Dengue Fever
DHF	Dengue Haemorrhagic Fever
DMO	District Medical Officer
DVBDCS	District Vector Borne Disease Control Society
EAG	Empowered Action Group
EVBDCP	Enhanced Vector Borne Disease Control Project
FCU	Filaria Control Units
FTD	Fever Treatment Depots
GoI	Government of India
IPPF	Indigenous Peoples Planning Framework
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Nets
IVM	Integrated Vector Management
JE	Japanese Encephalitis
MDA	Mass Drug Administration
MLV	Malaria Link Volunteers
NGOs	Non-Governmental Organizations
NHP	National Health Policy
NRHM	National Rural Health Mission
PA	Participatory Appraisal
PCD	Passive Case Detection
PHC	Primary Health Centres
PRI	Panchayat Raj institutions
RCH	Reproductive Child Health
RSA	Rapid Social Assessment
SABA	Social and Beneficiary Assessment
SMO	Social Marketing Organization
SPR	Slide Positive Rate
STs	Scheduled Tribes
SVBDCS	State Vector Borne Disease Control Societies
SWOT	Strengths, Weaknesses, Opportunities, Threats
VBD	Vector Borne Diseases
WHO	World Health Organization

Acknowledgements

The proposed EVBDCP project would support the National Program in achieving its goal of reducing mortality and morbidity from vector borne diseases, specifically reduce malaria mortality by 50% by 2010; eliminate Lymphatic Filariasis by 2015; eliminate Kala-Azar by 2010 and reduce JE mortality (case fatality rate) by 50% by 2010; and reduce dengue mortality (case fatality rate) by 50% by 2010.

The aim of Social and Beneficiary Assessment (SABA) is to enable tribal communities to fully participate in preparation of vector borne diseases control program in a manner that would be in accordance with their social and cultural needs. The Social and Beneficiary Assessment (SABA) of such groups, who live in predominantly tribal areas, has been undertaken with a view to facilitate and ensure their free, prior and informed participation all through the project cycle and also to have a clearer understanding of various social, economic, cultural and health factors that help or hinder their accessing various components and activities of the project. This will also help with preparation of "indigenous Peoples Planning Framework" as the basis of preparing district-wise Indigenous Peoples Access to Vector Borne Diseases Control Program.

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1.0 Introduction - Proposed Enhanced Vector Borne Disease Control Project (EVBDCP)

1.1 Goal

The proposed EVBDCP project would support the National Program in achieving its goal of reducing mortality and morbidity from vector borne diseases, specifically:

- Reduce malaria mortality by 50% by 2010
- Eliminate Lymphatic Filariasis by 2015
- Eliminate Kala-Azar by 2010
- Reduce JE mortality (case fatality rate) by 50% by 2010
- Reduce dengue mortality (case fatality rate) by 50% by 2010

1.2 Vision

A well-informed and self-sustained, healthy India free from vector borne diseases with equitable access to quality health care.

1.3 Objective

To reduce the risk of vector borne disease transmission through early diagnosis & prompt and complete treatment and reducing the man mosquito contact by community involvement and inter-sectoral convergence[1].

1.4 Time Frame

The project is proposed for five years from the year 2005 to 2010

1.5 Proposed Areas

It is proposed to enhance malaria control activities in 191 districts which include 100 old districts and additional 65 districts from the EMCP project states namely, Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Maharashtra, Madhya Pradesh, Orissa and Rajasthan. Besides this, 26 districts from five new states namely Bihar, Karnataka, Goa, Uttar Pradesh & Uttaranchal are also proposed to be included under the project. The details of population where intensified malaria control activities are proposed are given below:

[1] EVBDCP would support GOI in meeting the MDG target of "halting and reversing the incidence of malaria." The indicators for this target include reducing the prevalence and death rates associated with malaria, increasing the proportion of population in malaria risk areas using effective malaria prevention and treatment measures. In addition, reducing malaria would contribute to meeting other MDGs, as the disease contributes to maternal deaths, stillbirths, and low birth weight infants.

Table-1: Details of EVBDCP malaria areas

EVBDCP malaria areas	No. of District	POP. In million
EMCP districts	165	189.2
Additional districts	26	154.9
Total	**191**	**344.1**

Total population of 344 million from 191 districts, comprise 34% of country's population but contribute to about 75.8% of malaria cases and 90% of *Pf* cases in the country[2]. This population is proposed to be covered under EVBDCP. It may be noted that among vector born diseases, malaria poses a major public health problem. The disease is more severe among the tribals. Though tribals represent only about 8% of the country's population, they account for 30% of all the malaria cases, more than 60% of the P.falciparum cases and as much as 50% of the mortality associated with malaria.

Regarding Lymphatic Filariasis, the MDA would be taken up in 202 districts in 20 States/UTs. The total population in 201 districts is 406.32 million, which is proposed to be covered under EVBDCP.

Kala-azar incidence has been endemic in 31 districts of Bihar, 4 districts of Jharkhand, 11 districts of West Bengal and 2 districts of Uttar Pradesh besides sporadic occurrence in a few areas of eastern Uttar Pradesh namely Varanasi, Faizabad, Gonda and Ghazipur. Presently, an estimated 129 million population is exposed to the risk of Kala-azar in the endemic districts of four states, which is a matter of great concern. The endemic areas are proposed to be covered under EVBDCP.

Dengue/ DHF have been reported form 18 states/UTs. The endemic areas are proposed to be covered under EVBDCP.

JE cases are reported from 15 states/UTs. The endemic areas are proposed to be covered under EVBDCP for control of JE.

1.6 **Policy Interventions to Achieve Objective:**

To achieve the objective, the National Program consists of the following key areas: (i) care and treatment; (ii) prevention and integrated vector management; and (iii) surveillance, Monitoring & Evaluation and operational research; and (iv) cross cutting interventions, such as behaviour change communication, capacity building, and inter-sectoral collaboration. The National Program is a centrally sponsored scheme that provides assistance to the states and districts in the form of technical guidelines, material supply, BCC and training, as well as additional cash assistance to meet operational

[2] According to a Study of the Knowledge, Attitude and Practices Regarding Malaria in Indian Population undertaken by the Department of Community Medicine, University College of Medical Sciences, Delhi in 2001, a rough estimate of morbidity due to malaria made on the basis of consumption of anti-malarials at 35.5 million episodes in addition to malaria cases treated by the NMEP. Mortality due to malaria was estimated at 1,20,625 deaths annually.

expenses to some states and union territories. The planning, implementation and monitoring are the responsibility of the state governments.

1.6.1 **Care and treatment of VBDs**.

The objectives of this program component is to ensure that cases of malaria and other VBDs are diagnosed early and treated promptly and to strengthen the health system to improve morbidity management of lymphoedema, case management of dengue and JE, and diagnosis and complete treatment of Kala-azar. Major strategies to achieve this objective include strengthening capacity of health facilities to manage cases of VBD, Behaviour Change Communication and Inter-sectoral collaboration for social mobilization and introducing ACT in malaria drug resistant areas, miltefosine in kala-azar endemic areas, new rapid diagnostics, among others.

1.6.2 **Prevention of VBDs and Integrated Vector Management.**

The objective of this program component is to scale up and increase prevention and vector control, which include: (i) targeted and selective indoor residual spraying; (ii) utilization of insecticide treated bed nets; and (iii) source reduction and use of larvicides and larvivorous fish in selected water bodies. In addition, mass DEC administration is carried out in LF endemic areas and elimination of kala-azar reservoir.

1.6.3 **Surveillance, M&E, and operational research**.

The objective of this program component is to improve tracking and reporting of cases, to facilitate timely response to outbreaks and mitigate their impact through strengthened surveillance and monitoring and evaluation, including program monitoring and impact evaluation of all five vector borne diseases. The component involves coordination and integration of efforts, such as strengthening laboratories, developing human resources and establishing information systems. In addition, the component supports operational research, which would include effectiveness of innovative strategies and interventions, such as for delivering services in urban and remote inaccessible areas.

1.6.4 **Cross cutting interventions.**

To achieve care, treatment, and prevention objectives, the program supports behaviour change communication initiatives, advocacy with local and community leaders, public-private partnership with NGOs and informal providers/local self government/self-help groups and inter-sectoral collaboration between health and other departments, such as agriculture, defence, fisheries, social welfare. Furthermore, building capacity of medical and health personnel in public and private sectors and grassroots workers is a critical area of support.

1.7 Social and Beneficiary Assessment (SABA) for Indigenous People Development Plan

1.7.1 Vector borne diseases (VBD), viz., Malaria, Filariasis, Kala-azar, Japanese Encephalitis (JE) and Dengue are major public health concerns in India. There are considerable variations in epidemiology of these vector borne diseases on account of ecology, vector bionomics and economic, socio-cultural, behavioral factors. The presence of VBD is an indicator for deficient health and well being as well as poverty causing tremendous personal and national economic losses due to incapacitation and disease-related deaths. The direct costs of VBD include a combination of personal and public expenditures on both prevention and treatment. The indirect costs include productivity or income loss due to illness or premature death. Although difficult to express in financial terms, another indirect cost of malaria is the human sufferings due to the disease. These diseases are mostly prevalent in the hard core endemic pockets inhabited predominantly by the rural poor including tribes with limited access to quality health care, communication and other basic facilities, although risk factors exist in many parts of the country. These communities present an unique picture in terms of their population size and heterogeneity in respect of language, race, physical, social, economic and cultural norms and patterns. Such contexts and perceptions vis-à-vis accessibility to and acceptability of quality health care services need to be sufficiently understood and assessed while formulating vector borne diseases control programme, its strategies, their components, processes, input(s) and output(s) and impact.

1.7.2 Towards reduction vector borne diseases burden, the Government of India (GoI) in its National Health Policy (NHP - 2002) has pledged commitment for reducing mortality on account of malaria, dengue and JE by 50% by year 2010 and efficient morbidity control, elimination of Kala-azar by year 2010 and elimination of Lymphatic Filariasis by year 2015. This is more or less in tandem with the Millennium Development Goal of halting and reversing the incidence of malaria by year 2015.

1.7.3 To achieve this, the Govt. of India has launched the National Rural Health Mission in April 2005 with the Action Plan of augmenting and ensuring appropriate public health focus; peoples' orientation and ownership of public health programmes; community-based approaches; public-private partnership; involvement of local bodies and Panchayati Raj Institutions; gender equity, en route to improved access to primary health care, prevention and control of communicable diseases including vector borne diseases, reduction of infant mortality rate and maternal mortality ratio by 50% by year 2012 and promotion of healthy life styles.

1.7.4 A "Vector Borne Disease Control Project: India" is presently proposed as a nation-wide programme within the overall framework of the National Rural Health Mission (NRHM) for World Bank assistance for a period of five years. The proposed project will support India's VBD Control Programme by:

(a) Improving access to quality vector borne disease control services for the rural, poor and other underprivileged populations including women, indigenous populations and urban slum residents; and

(b) Strengthening implementation capacities at the State and District levels with special emphasis on decentralized planning and focusing on tangible results.

1.7.5 It is foreseen that the implementation of the project will not have any adverse social impact on any group including those who belong to Scheduled Tribes. The project does not involve any land acquisition, use of forests or rehabilitation of land. All infrastructure development under the project will take place within the existing government activities However, a Social and Beneficiary Assessment (SABA) of such groups, who live in predominantly tribal areas, is being undertaken with a view to facilitate and ensure their free, prior and informed participation all through the project cycle and also to have a clearer understanding of various social, economic, cultural and health factors that help or hinder their accessing various components and activities of the project, this will also help with preparation of "indigenous Peoples Planning Framework" as the basis of preparing district-wise Indigenous Peoples Access to Vector Borne Diseases Control Program.

2.0 Aim and Objectives of SABA

2.1 Aim

The aim of SABA is to enable tribal communities to fully participate in preparation of vector borne diseases control program in a manner that would be in accordance with their social and cultural needs[3].

2.2 Objectives

The objectives of the assignment are:

- To enable the Government of India to have a clearer understanding of all stakeholders, both government and non-government, with a view to facilitate their informed participation;

- To assess whether or not the project will have any adverse social impacts on tribal communities with a view to confirm that the project will not have any adverse impact on them; and

- To help with preparation of "Indigenous Peoples Planning Framework for Access to Vector Borne Diseases Control Project" together with necessary guidelines as the basis for preparation of "Indigenous Peoples Access to Vector Borne Diseases Control Project"

The above objectives to be achieved through assessment and review that will center on the following:

- Stakeholders analysis with a view to identify and involve all Government and non-Government stakeholders, including Panchayati Raj Institutions, NGOs, Community Based Organizations, such as Health Committees, Self-Help Groups etc. at village, block and district levels who have a stake in the project;
- Organization of stakeholders consultations where they are given all details of the project as a basis for "free, prior and informed participation";
- Documentation of the process of consultation (who, when, where, how) and also issues raised in these consultations;
- Review of existing structures and processes of health care services in the district including staff and programs/activities and the integration of vector borne diseases control programs with them;

[3] A project proposed for Bank financing that affects Indigenous Peoples requires:
(a) screening by the Bank to identify whether Indigenous Peoples are present in, or have collective attachment to, the project area; (b) a social assessment by the borrower; (c) a process of free, prior, and informed consultation with the affected Indigenous Peoples' communities at each stage of the project, and particularly during project preparation, to fully identify their views and ascertain their broad community support for the project; (d) the preparation of an Indigenous Peoples Plan or an Indigenous Peoples Planning Framework; and (e) disclosure of the draft Indigenous Peoples Plan or draft Indigenous Peoples Planning Framework.

- Situation analysis of burden of vector borne diseases among tribal communities in the context of various guidelines on prevention and control of vector borne diseases;
- SWOT analysis (strength, weaknesses, opportunities, threats) of existing prevention and control measures of vector borne diseases control program with particular focus on women and children of tribal community;
- Identification of Government's and other donors programs for water, sanitation, income/employment generation as the basis for linkage with programs/services of the project;
- Assessment of community's understanding of the significance of vector borne diseases, their sources and their attitude towards control of vector and diseases;
- Identification of tribal and related institutions/organizations that play an important role in decision making process of tribal communities particularly with regard to social and cultural issues;
- Assessment of patterns of human settlement including types of housing and their impact on sleeping patterns of communities;
- Identification of social, economic, cultural and geographical factors that influence health/treatment seeking behavior of communities, particularly among women with regard to vector borne diseases;
- Identification of beliefs and practices of tribal communities and the influence of religion and traditional healers with a view to use them in control of vector borne diseases;
- Assessment of the nature of interaction, if any, between traditional and modern health care;
- Assessment of the sources of income and patterns of expenditures with a view to identify the amount of money spent on health and also as a basis for the willingness to pay for some services of the project such as Insecticide Treated Bed Nets.
- Assessment of requirement of land for the project to see whether the programme would involve land acquisition and transfer of land, including common land, on which tribal communities depend for social, economic and cultural needs

2.3 Scope of the Assignment

In pursuance of the objectives described above, the scope of the assignment is as follows:

- Preparation of Indigenous Peoples Planning Framework for Vector Borne Diseases Control in accordance with Annex C to the World Bank's OP 4.10 on Indigenous Peoples;
- Social screening of land requirements for the programme to assess whether or not the programme would involve land acquisition and transfer of forest, common and/or any other land on which tribal communities depend;
- Preparation of a strategy for social mobilization and organization of the community, particularly the women as the basis for "social marketing" of vector borne diseases control programs including ITNs;
- Preparation of a socially and culturally viable communication strategy for behavior change;
- Seasonality and trend analysis of vector borne diseases and their linkage with community's lifestyle and cycle of livelihood;

- Social and Physical Mapping of sample villages including human settlements, health care and other development facilities, "host reservoirs" and animal habitation;
- Preparation of a strategy for involvement of appropriate NGOs and other civil society organizations including Faith Based Organization in participatory planning and implementation of Indigenous Peoples Access to Vector Borne Diseases Control as Districts Plans to be integrated with State implementation Plans; and
- Detailed documentation of consultative processes undertaken as part of SABA.

2.4 Study Area for Coverage of SABA

The SABA was envisaged originally to be carried out in Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Maharashtra, Madhya Pradesh, Orissa, Rajasthan and West Bengal in selected districts that are classified as "tribal districts." However, in view of the time constraints related to the approval process of the programme through World Bank, and on the consideration that SABA would essentially be a qualitative study[4], the coverage of SABA has been restricted to four key project states viz. Madhya Pradesh, Chhattisgarh, Andhra Pradesh and Orissa designated under Schedule 5 of the Constitution with the same sample size as originally envisaged by the consultants (that is, a total of 80 villages which are within the endemic districts of Schedule 5 with respect to vector borne diseases (viz. Malaria, Filariasis, Kala-azar, Japanese Encephalitis and Dengue), but spread across the identified 4 states of the Schedule. The list of villages for field visits was to be identified by the Directorate of NVBDCP in consultation with concerned State Project Directors. The sample districts and or villages were to be selected by the Directorate on the basis of purposive sampling based on criteria such as endemicity, size of women's population, remoteness of villages, lack of inadequate health care facilities. These issues were considered and agreed to by the Directorate of National Vector Borne Diseases Programme during the detailed discussions with consultants on January 17, 2007. Further, it was agreed that initially 40 villages in two states, namely Madhya Pradesh and Chhattisgarh will be covered for Rapid Social Assessment (RSA) through focus group discussions with stakeholders and based on the findings, the Indigenous Peoples Development Plan-IPDP (Vulnerable Communities Plan) as well as the Indigenous Peoples Planning Framework (IPPF) for access to Vector Borne Diseases Control Project would be prepared by the consultants which will be hosted on the NVBDCP website for comments from public by February 15, 2007. The consultants shall then continue with and complete the RSA (with a total coverage of 40 villages) in Andhra Pradesh and Orissa and shall integrate/address the comments/feedback received during the public consultation process in the Final Social & Beneficiary Assessment Report. The Directorate will provide all assistance and relevant data/information through their state offices as may be required by the consultants and also depute an appropriate official from the State Programme Office/District Health Authorities to accompany the

[4] However, certain quantitative data based on primary and secondary information as relevant was incorporated as base line data. The study is envisaged to be largely qualitative on account of the nature of information to be collected which is not quantitative in the main, likely variations in results across geographic and location specific factors, and the relatively non-compliant nature of the sample size of villages and the community members consulted in the identified states in a statistical sense,

consultants during the field visits. Further, in view of the time constraints, the mobilization of stakeholders were to be organized/facilitated by the Directorate through State Programme Officers to ensure participation of a broad cross section of stakeholders indicated below, in line with the planned schedule of visits to the States/villages. Further, relevant data/information relating to Special Tribal Groups in states other than the States under coverage by the consultants may be obtained by the Directorate of NVBDCP based on the field survey instruments and provided to consultants in time for integration and completion of the SABA Report within the time limits set for the completion of the assignment.

Table-2: Study Area for Coverage of SABA

Stakeholders	Expected Level of Participation	Comments
Panchayat Representative/Sarpanch/Mukhiya	1	The mobilization and participation to be ensured through appropriate coordination by the Directorate of NVBDCP for all the sample villages within the districts identified for coverage in the four focus states in line with the visit schedule of consultants. There will be four teams visiting initially Madhya Pradesh and Chhattisgarh during **23rd January - 2nd February, 2007** each team covering ten villages (20 villages per State in all). Similar exercise will be undertaken during **19th February – 1st March, 2007** to cover Andhra Pradesh and Orissa.
NGOs active in health sector/community development and advocacy/IEC in the village/area	2	
Community based organisations		
a) Health Committees at village/block level	1	
b) Self-Help Groups at village/block level	1	
District Health Authorities	1	
Tribal Women	5	
Tribal community (Men)	10	
Block Development Officer	1	
Faith based organizations	1	
Opinion Leaders	2	
Tribal Institutions/Tribal Councils	1	
Health Care Service Providers (Private & Public)	2	
Anganwadi Workers/ANM/Village Health Worker/Accredited Social Health Activist (ASHA)	1	

2.5 Indigenous/Tribal Groups

The tribal population of the country, as per the 2001 Census, is 8.43 crore, constituting 8.2% of the total population. The population of tribes had grown at the rate of 24.45% during the period 1991-2001. This is slightly more than the decadal growth rate of 22.66% for the nation as a whole. More than half the Scheduled Tribe population is concentrated in the States of Madhya Pradesh, Chhattisgarh, Maharashtra, Orissa, Jharkhand and Gujarat.

The terms 'indigenous peoples', indigenous ethnic minorities', tribal groups,' and 'scheduled tribes' describe social groups with a social and cultural identity distinct from the dominant society that makes them vulnerable to being disadvantaged in the development process. By definition, IP refers to peoples living in an area within a nation-state, prior to the formation of a nation-state, but who do not identify with the dominant nation. This group has social, cultural, economic, and political traditions and institutions distinct from

the mainstream or dominant society and culture. In India, IP with similar cultural characteristics are known as '*Adivasis'* in Hindi and are recognized as Scheduled Tribes (STs).

The following characteristics define indigenous people: (i) descent from population groups present in a given area before territories were defined; (ii) maintenance of cultural and social identities separate from dominant societies and cultures; (iii) self identification and identification by others as being part of a distinct cultural group; (iv) linguistic identity different from that of dominant society; (v) social, cultural, economic and political traditions and institutions distinct from dominant culture; (vi) economic systems oriented more towards traditional production systems rather than mainstream; and (vii) unique ties and attachments to traditional habitats and ancestral territories. Essentially, indigenous people have a social and cultural identity distinct from the mainstream society that makes them vulnerable to being overlooked in development processes.

As per the Census 2001, STs constitute roughly 8.2% of India's total population and the Indian Constitution has recognized about 573 communities as STs, which confers entitlements to affirmative action programs. However, the majority of tribal communities continue to be vulnerable even today in comparison to the general population and this is reflected in the socio-economic realities and problems of these groups compounded by low literacy and prevalence of extreme poverty with 45.86% STs living BPL in rural areas and 34.75% in urban areas in 1999-2000 in India.

The Fifth Schedule of the Indian Constitution designates 'Scheduled Areas' in which the interests of the Scheduled Tribes are to be protected. The Scheduled Areas have more than 50% tribal population. The Fifth Schedule covers Tribal areas in 9 states of India namely Andhra Pradesh, Jharkhand, Gujarat, Himachal Pradesh, Maharashtra, Madhya Pradesh, Chhattisgarh, Orissa and Rajasthan. The notified tribal districts of the country under Fifth Schedule (which covers 8 states out of 11 envisaged for coverage under the Programme) are indicated below. It is noted that Bihar, Karnataka and West Bengal are not covered under this schedule[5].

Table-3: Fifth Schedule Areas

State	Areas
Andhra Pradesh	Visakhapatnam, East Godavari, West Godavari, Adilabad, Srikakulam, Vizianagaram, Mahboobnagar, Prakasam (only some mandals are scheduled mandals)
Jharkhand	Dumka, Godda, Devgarh, Sahabgunj, Pakur, Ranchi, Singhbhum (East & West), Gumla, Simdega, Lohardaga, Palamu, Garwa, (some districts are only partly tribal blocks)
Chattisgarh	Sarbhuja, Bastar, Raigad, Raipur, Rajnandgaon, Durg, Bilaspur, Sehdol, Chindwada, Kanker

[5] The North Eastern states such as Assam, Meghalaya, Tripura and Mizoram are covered by the Sixth Schedule and not included in the Fifth schedule.

Himachal Pradesh	Lahaul and Spiti districts, Kinnaur, Pangi tehsil and Bharmour sub-tehsil in Chamba district
Madhya Pradesh	Jhabua, Mandla, Dhar, Khargone, East Nimar (khandwa), Sailana tehsil in Ratlam district, Betul, Seoni, Balaghat, Morena
Gujarat	Surat, Bharauch, Dangs, Valsad, Panchmahl, Sadodara, Sabarkanta (parts of these districts only)
Maharashtra	Thane, Nasik, Dhule, Ahmednagar, Pune, Nanded, Amravati, Yavatmal, Gadchiroli, Chandrapur (parts of these districts only)
Orissa	Mayurbhanj, Sundargarh, Koraput (fully scheduled area in these three districts), Raigada, Keonjhar, Sambalpur, Baudakondmals, Ganjam, Kalahandi, Bolangir, Balasor (parts of these districts only)
Rajasthan	Banswara, Dungarpur (fully tribal districts), Udaipur, Chittaurgarh, Siroi (partly tribal areas)

2.6 Indigenous People under RSA

The Indigenous People (IP) surveyed during the Rapid Social Assessment (RSA) mainly belonged to the following tribes:

Table-4: Major Tribes in Sample Villages of Madhya Pradesh, Chhattisgarh, Andhra Pradesh and Orissa

Major tribes in sample villages in Madhya Pradesh	**Major tribes in sample villages in Chhattisgarh**
Bheel, Bhilala, Bhavere, Gond, Babhera, Kalar, Panchal, Shil, Padaliya, Ajeja, Corku, Goli and Patlia	Gond, Halwa
Major tribes in sample villages in Andhra Pradesh	**Major tribes in sample villages in Orissa**
Koya Dora, Konda Kammara, Valmiki, Konda Kapu, Madga, Malla, Sensu, Gond, Lambari and Baika	Saura, Lanjia Saura, Kondodura, Khond, Gadaba, Didai, Bhuiyan, Santal, Munda

3.0 Approach and Methodology

3.1 Approach

Our approach to the study will be systematic, participative, analytical and rational. Systematic, in the sequencing of action plan and steps; participative, to ensure an understanding of the perceptions of all stakeholders and factoring them in the Social and Beneficiary Assessment so as to ensure tribal communities to fully participate in the preparation of vector borne diseases control programme in line with their social and cultural needs; analytical, in the processing of information; and rational in deriving relevant, workable and pragmatic results of SABA that will form the basis to develop "Indigenous Peoples Planning Framework".

Holistic approach vis-à-vis the development of framework was adopted to assess the potential socio-economic, cultural and health factors that help or hinder their accessing various components and activities of the project. 'Four pillars' strategy for social assessment as described in the draft social assessment guidelines by the World Bank: identification of key social development and participation issues; evaluation of institutional and social organizational issues; definition of a participation framework; and establishment of social-based indicators for monitoring and evaluation were the guiding principles.

All through the assignment, close consultation and coordination was maintained with the Directorate of NVBDCP. The tasks were carried out in close coordination with the Dte of NVBDCP, State/District Health Authorities.

3.2 Methodology

SABA was undertaken in accordance with relevant social policies and procedures of Government of India and also the World Bank's Operational Policy for Indigenous Peoples Development Plan and Indigenous Peoples Planning Framework based on Rapid Social Assessment in the study area.

3.2.1 Desk Review of Secondary Data:

This covered review and analysis of secondary data (internal and public documentation) including project documents from the past (EMCP) and proposed (EVBDCP) projects and other relevant information from the Directorate of National Vector Borne Disease Control Programme, Ministry of Health & Family Welfare, GoI and the World Bank. These included the following:

- Draft Concept Note for the Proposed Enhanced Vector Borne Disease Control Programme (2005-10), Directorate of NVBDCP, Ministry of Health & Family Welfare, Government of India
- Epidemiological Situation Report of States in 2005, Directorate of National Vector Borne Diseases Control Programme, Ministry of Health & Family Welfare, Government of India

- Baseline Survey on Knowledge, Attitude & Practice – Baseline Report: Bihar & Jharkhand under National Anti Malaria Programme, Centre for Media Studies, New Delhi, April 2003
- A Study of Knowledge, Attitude and Practices Regarding Malaria in Indian Population, Department of Community Medicine, University College of Medical Sciences, Delhi, 2001
- Evaluation Report of EMCP of Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum
- Summary Report on Concurrent Evaluation of the Pilot Programme for the Insecticide Treatment of Community Owned Mosquito Nets - District Kanker, Chhattisgarh & District Betul, Madhya Pradesh, April, 2004
- Evaluation of Impact of Indoor Residual Sprays Used for Control of Vectors of Public Health Importance in Mizoram, West Bengal, Karnataka, Haryana and Maharashtra, National Environmental Engineering Research Institute, Nagpur 2002
- Annual Epidemiological Surveillance Reports of selected districts for coverage of sample villages
- Annual Reports of selected districts for coverage of sample villages

3.2.2 **Development of Survey Instruments**

- The survey instruments were a mix of open and close-ended schedules in the form of a check-list for interviews and group discussions including a schedule for village mapping. The seasonality and trend analysis of vector borne diseases and social and physical mapping of sample villages were also included in this questionnaire. The check-list for interviews/focus group discussions at the village level is given at Annexure-I.
- The survey instruments were finalised under intimation to the client.
- A training programme was held for field investigators recruited for the study. The investigators were oriented on the field survey instruments, data collection formats, and sample size as well as in techniques of establishing rapport, trust and conducive environment for collection of field data.

3.2.3 **Field Survey for Primary and Secondary Data Collection:**

The secondary data was augmented with primary data collected from primary sources (key stakeholders) as part of Rapid Social Assessment (RSA) that involved group meetings/focus group discussions at identified villages for sample coverage. This interaction was based on a check-list to facilitate Participatory Appraisal (PA) techniques. Where feasible, the consultants also conducted interviews with key informants in the project areas.

The consultants collected relevant secondary data during the field visits from district/block/village level functionaries associated with the NVBDCP based on the advice from the Directorate. It is envisaged that the primary and secondary data analysis will contribute to many of the Government's National Vector Born Disease Control Program (NVBDCP) goals, mainly involving the improvement of surveillance, strengthening national capacity, implanting evidence-based policies, and scaling up cost-effective and sustainable interventions. It is also envisaged to contribute to the examination of the

impact of malaria and other VBDs on tribal populations as well as barriers to access and use of preventive and treatment interventions.

3.2.4 **Field Visits:**

The consultant undertook field visits to meet with stakeholders for groups meetings/focus group discussions organized at the village PHCs/Sub-Centres. The Directorate of NVBDCP assisted in the mobilization of necessary stakeholders (as per the field visit plan of the consultants in Madhya Pradesh and Chhattisgarh during Phase I and in Andhra Pradesh and Orissa in Phase II) by the state unit headed by the State Programme Officer and/or District Malaria Programme Officer.

3.2.5 **Methods:**

The methods used for SABA in different combinations are as follows:

- Rapid Social Assessment (RSA) involving Focus Group Discussions with community, vulnerable sections, viz., women, civil society and faith based organizations, opinion leaders, representatives of Panchayati Raj Institutions, Tribal institutions/organizations/councils, and private health care service providers. The primary data collected was used according to the specific objectives of the participatory assessment. The whole process was pre-planned and tools carefully selected. Group meetings/focus group discussions were set in advance, at convenient times (not when people are likely to be at work or busy with daily activities) and places (not in venues where some individuals may be uncomfortable). The facilitators/investigators were sensitized to be aware and respectful of local protocol; build a rapport and explain clearly, but briefly, the objectives of SABA.

The **Rapid** Social **Assessment** included the following elements, as needed:

A review of the legal and institutional framework applicable to Indigenous Peoples; (b) Gathering of baseline information on the demographic, social, cultural, and political characteristics of the affected Indigenous Peoples' communities and the natural resources on which they depend; (c) Taking the review and baseline information into account, the identification of key project stakeholders and the elaboration of a culturally appropriate process for consulting with the Indigenous Peoples at each stage of project preparation and implementation; (d) An assessment, based on free, prior, and informed consultation, with the affected Indigenous Peoples' communities, of the potential adverse and positive effects of the project[6]. Critical to the determination of potential adverse impacts is an analysis of the relative vulnerability of, and risks to, the affected Indigenous Peoples' communities given their distinct circumstances and close ties to natural resources, as well as their lack of access to opportunities relative to other social groups in the communities, regions, or national societies in which they live; (e) The

[6] Free, prior and informed consultation with tribal communities was ensured through conduct of separate focus group discussions and or interveiws with key sub-groups such as tribal women and children, tribal men, separate from government health functionaries, civil society organizations etc. wherever possible to avoid potential bias. The project background and objectives and purpose of the discussions was explained to the target groups for an appreciation of the context of consultations.

identification and evaluation, based on free, prior, and informed consultation with the affected Indigenous Peoples' communities, of measures necessary to avoid adverse effects, or if such measures are not feasible, the identification of measures to minimize, mitigate, or compensate for such effects, and to ensure that the Indigenous Peoples receive culturally appropriate benefits[7] under the project.

- Participatory Social and Physical Resource Mapping of villages/living areas
- Seasonality of VBD by analysis of months/seasons/time of days
- Trend analysis of VBD and analysis of trends and factors influencing availability and accessibility of services by stakeholders
- In-depth interviews with semi-structured questionnaires for collection of baseline data and stakeholder information [Questionnaires are to be pre-tested before using them and cleared by the GoI, World Bank].
- Collection and review of existing documents, information data from secondary sources and incorporation of relevant information to appropriate issues;
- Listing and review of existing communication materials in terms of media and messages used for distribution/delivery of various services.
- Preparation of **Indigenous Peoples Development Plan-IPDP**[8] (Vulnerable Communities Plan) which includes the following elements, as needed:

  (a) A summary of the social assessment
  (b) A summary of results of the free, prior, and informed consultation with the affected Indigenous Peoples' communities that was carried out
  (c) A framework for ensuring free, prior, and informed consultation with the affected Indigenous Peoples' communities during project implementation.
  (e) An action plan of measures to ensure that the Indigenous Peoples receive social and economic benefits that are culturally appropriate, including, if necessary, measures to enhance the capacity of the project implementing agencies and medical/healthcare support -both preventive and curative to control/eliminate VBPs.
  (f) When potential adverse effects on Indigenous Peoples are identified, an appropriate action plan of measures to avoid, minimize, mitigate, or compensate for these adverse effects.

[7] The specific benefits expected from the NVBDCP include: (a) reduce deaths and morbidity due to VBDs; (b) increase equity especially for the rural poor in dealing with all aspects of VBD control; (c) save money for households, especially poor households as they treat VBD cases; (d) provide opportunity for grassroots enterprises by supporting women's cooperatives and Non-Governmental Organizations (NGOs) that engage in the production and sale of medicated mosquito nets; (e) reduce unnecessary environmental contamination by reducing indoor residual spraying and shifting to more environmentally neutral insecticides; and (f) prepare NAMP to develop capabilities in terms of better interventions and information system to more effectively respond to VBDs in the future.

[8] IPDP is a planning document to incorporate Indigenous Peoples concerns into the project design. It includes provisions for project implementation, monitoring, and evaluation. IPDP ensures improving the participation of indigenous people in sharing benefits and addresses any unintended effects that may reinforce their vulnerability.

(h) Accessible procedures appropriate to the project to address grievances by the affected Indigenous Peoples' communities arising from project implementation.
(i) Mechanisms and benchmarks appropriate to the project for monitoring, evaluating, and reporting on the implementation of the IPDP.

- Preparation of **Indigenous Peoples Planning Framework (IPPF)** for Access to Vector Borne Diseases Control Project[9]. The Indigenous Peoples Planning Framework (IPPF) sets out:

(a) The types of programs and subprojects likely to be proposed for financing under the project.
(b) The potential positive and adverse effects of such programs or subprojects on Indigenous Peoples.
(c) A plan for carrying out the social assessment for such programs or subprojects.
(d) A framework for ensuring free, prior, and informed consultation with the affected Indigenous Peoples' communities at each stage of project preparation and implementation
(e) Institutional arrangements (including capacity building where necessary) for screening project-supported activities, evaluating their effects on Indigenous Peoples, preparing IPPs, and addressing any grievances.
(f) Monitoring and reporting arrangements, including mechanisms and benchmarks appropriate to the project.
(g) Disclosure arrangements for IPPs to be prepared under the IPPF.

3.2.6 **Data Analysis**

- The information gathered was consolidated, compiled and tabulated on a concurrent basis.
- Appropriate computer software was developed for the above purpose.
- Statistical validation of data was undertaken.
- The tabulated information was analyzed through appropriate statistical analysis while qualitative data was grouped to draw conclusions.

3.2.7 **Team Composition:**

The consultants team comprised of social scientists having experience in SABA, M&E design and staff (field investigators) having experience on social safeguard and social impact issues, participatory processes of planning, implementation, monitoring & evaluation.

[9] IPPF is a policy and procedural framework and identifies the policy and procedural requirements together with the screening and planning procedures which apply to sub-projects, components or investments that are to be approved during loan implementation.

4.0 Rapid Social Assessment

4.1 Introduction

4.1.1 India has the second largest concentration of tribal population in the World. Indian tribes constitute around 8.2 percent of nation's total population (Census 2001). Social assessment is required to uncover the social causes and consequences of epidemic which in turn necessitates to explore the various social groups in the society and to understand the social environment of these identified groups which are socially vulnerable or excluded and or vulnerable to VBDs due to such socio- economic and cultural factors. It is also important to assess their level of knowledge about VBDs and also to assess their risk behaviours. Apart from that, it is pertinent to know about the institutions providing services to these groups and the policy environment around these groups. Identifying gaps with respect to the reach of the programme to these social groups and measures to be taken for the same and developing indicators to measures the impact of interventions are among the other components of social assessment.

As a methodology, social assessment refers to a broad range of processes and procedures for incorporating social dimensions into the development project such as NVBCDP. The social assessment influences project design and the overall approval of the project in as much as the focus is on people as beneficiaries, and especially the vulnerable groups that may be adversely affected by the project. The social assessment aims to determine the social costs of the project and the degree to which the benefits of a project will be distributed in an equitable manner. Social assessments are necessary to help ensure the project will accomplish its development goals and avoiding or mitigating negative effects on vulnerable groups, and protecting these groups.

4.1.2 Social Screening of Land Requirements

As part of SABA, an assessment has been undertaken to see whether or not any land acquisition and/or government land under different tenure system such as forest, village common land will be required for the project and whether or not it will affect the sources of income, livelihood, common and cultural properties on which tribal communities depend. The assessment indicates that this is unlikely to happen as the programme will use existing buildings and infrastructure at district, block and village levels such as the buildings of PHCs etc. As such, there will not be any land acquisition and/or transfer of government land, in light of the already existing health infrastructure, both rural and urban. As far as rural health infrastructure is concerned, the center of the public health system is primary health center (PHC). Each PHC has five to six sub-centers located closer to rural villages that are managed by an Auxiliary Nurse Manager. A PHC can also have a community health center that serves as a larger community hospital. Each sub-center is meant to serve three to four villages. Overall, one PHC can serve anywhere from 25,000 to 48,000 people[10].

[10] The basic infrastructure of the public health system has potential, but without proper funding and resources it will continue to fail to deliver on its promise of quality

The potential adverse impacts of the programme however are discussed under Section 4.19 - Assessment of the Potential Adverse Effects of the Project.

4.1.3 Local Indigenous Knowledge/Practices Related to Healthcare and VBDs

Based on the detailed discussions with the tribal communities, tribal leaders, elderly persons, women representatives for local SHGs, Panchayat leaders, local teachers, educated persons and local doctors practicising Ayurveda and allopathic systems of medicine, following observations are being made in respect of local knowledge/practices related to health care and VBDs::

The tribals depend mostly on traditional beliefs, customs and religious practices. In case of any illness they tend to observe some rituals, offer cereals and liquor to the family deity and departed souls to please them for cure of family members from the suffering/ailment. They believe that evil spirits try to harm the family and only the tribal priests/medicine men can cure the disease. When they are not able to get any relief, they would not hesitate to sacrifice domestic animals (goat, buffalo, poultry birds etc.) give grand feast to the villagers and even take loan for such activities. They would visit the local doctor or the government health staff if no relief is obtained. The trend is charging slowly due to the presence of Health workers and PHC doctors in some villages close to the PHC centres, but a large number of inaccessible villages on high hills and forests are rarely visited by competent medical staff and the tribals (particularly Primitive Tribals) continue to depend on local tribal medicine men (bej, bejuni, gunia, etc).

The tribals (particularly primitive tribes) living in the forests and high hills construct dwelling huts with bamboo, mud and palm leaves or dry paddy stalk. The height of the dwelling unit is low and hardly any provision of ventilation is made to protect the huts from wind and heavy rains. Since they have only one living room which is used for storage of food grains, cooking and storage of household articles, etc, there is hardly any space left to sleep. Families having average 5 members can not sleep under one net. Moreover, traditionally they never sleep inside any foreign object, such as roof or nets. Accordingly they are reluctant to use bed nets even if the same was provided free of cost. However, in case of malaria epidemic in some villages, the villagers started using the same for their children. The adult members however continue to sleep in the open which they are used to.

A section of tribals who came in contact with other weaker sections/SC/OBC and general population living in the plains, started using body oil (neem oil, karnjie seed oil, babool seed oil, mustered oil etc) through cross cultural

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healthcare. The difficulties of location, the uncertainty of supplies and the varied qualification of different personnel have all combined to make demand of public health services very low, even in those areas where public health centers offer adequate services. The data shows that even though it is more affordable, poor and rural populations will pay more money to use private health services and traditional healers, rather than go to public health centers. The majority of growth in the health sector over the last two decades has been in urban areas, with 75% of health infrastructure now being located in that area.

influence. They have been using clothings (dhoti, saree, bed sheet etc) to cover their body and continue the same practice in the villages.

In the past few elderly persons (particularly traditional medicine men) had some knowledge about local roots, tubers, leaves growing in the hills which had medicinal values and used these indigenous products for treatment of diseases. However, since this was not their profession, and younger generation are not interested in such knowledge, the knowledge and expertise did not percolate down and lost its importance. Most of the modern medicines (Allopathic, Ayurvedic and Homeopathic) one derived from the herbals and plants grown in the wild but the people who collect these herbs and plants are not able to derive any benefit.

The tribals still burn neem leaves, cow dung cake, paddy stalk and leaves collected from the forest to drive away mosquitoes during the night hours. They have some knowledge about the quality of the articles they use but this traditional knowledge acquired over a period of time is not likely to be preserved for future generations.

The tribals normally are reluctant to allow their rooms to be sprayed with DDT due to their long traditional beliefs that the family deity resides in the room and ancestral souls who are supposed to protect their surviving children also reside in the room. On account of spray of DDT, it is believed that the family deity will be polluted and will leave their house. They have also some traditional belief about the concept of pollution which is perceived to be caused on account of the entry of strangers of different sects and hence as a compromise, it is noted, that the tribals sometimes only allow the pumping operation to be carried out by the health functionaries from outside of the hut/tenement while the actual spray operation inside is carried out by themselves.

4.2 Rapid Social Assessment - Madhya Pradesh

4.2.1 Madhya Pradesh has 10 notified tribal districts and for the SABA, 3 sample districts were selected by the State Programme Office of NVBDCP considering the accessibility and other field constraints. The selected districts are bordering Gujarat and Maharashtra. Two of the selected districts, Jhabua and Dhar are situated in the eastern side of the state bordering Gujarat. The third district Betul is located in the southern side bordering Maharashtra state. The following table gives a comparison of the selected districts.

Table-5: Comparison of Selected Districts

Items	Dhar	Jhabua	Betul
Area in sq km	8153	6781	10043
Development blocks	13	12	10
CHCs	8	10	9
Sector PHC	51	29	30
Sector labs	38	23	30
Sub-Centres	372	346	261
No. of villages	1490	1345	1322
Total population	19366562(05)	1396677(01)	1564689(01)
Tribal Population	1713840	1215109	1084692
FTDs	1148	248	1741
DDCs	2086	1267	1224

Items	Dhar	Jhabua	Betul
Malaria clinics	51	36	41
Anganwadi	2086	1977	1600
MLV	200	461	550
Temporary & permanent source of water	706	2410	6027
No. of larvivorous fish put in '06	514000	261000	561300
No. of people using bed nets	15267	54828	343241

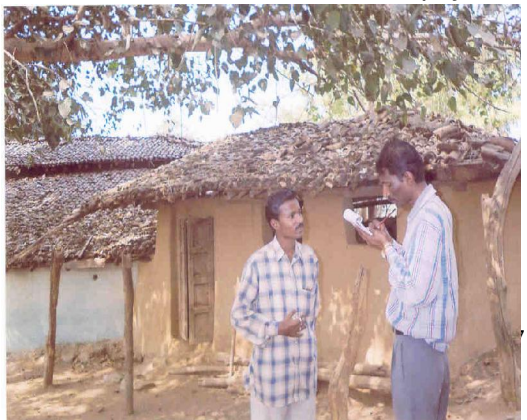
The performance indicators of the selected districts is summarized below:

Table- 6: Performance Indicators of the Selected Districts

Items		Dhar	Jhabua	Betul
Malaria Positive cases	2004	9739	25336	1063
	2006	2242	3274	1323
PF Case	2004	5059	15032	841
	2006	618	1053	845
SPR	2004	2.74	6.05	0.44
	2006	0.80	1.25	0.47
Malaria Death	2004	9	NA	2
	2006	1	NA	8

As per Table 3, Betul district is performing not so good compared to Dhar and Jhabua district as far malaria Control programme is concerned. The number of malaria positive cases in Betul was 1,063 in 2004 which increased to 1323 in 2006. The Slide Positive Rate (SPR) increased from 0.44 in 2004 to 0.47 in 2006. The number of death due to Malaria had a sharp increase from two deaths to 8 deaths in 2006. Betul district need special attention to control the malaria programme.

4.2.2 In Dhar district, 88.5 percent of total population, in Jhabua, 87 percent and in Betul, 69.3 percent of the total population are tribal. In absolute number, tribal population is highest in Dhar district (17.1 lakhs compared to 12.1 lakhs in Jhabua and 10.8 lakhs in Betul district). Area wise Betul is the biggest among the three selected districts. The table shows that very negligible percent of population are using bed nets distributed by the Government. In Betul district the district society passed a resolution to collect Rs 10 from families below poverty line (BPL) for the bed nets. On an average there is 1-2 MLVs are present in each and every health sub center. If the MLVs are monitored properly they can do a much better job of disease surveillance. Almost 1 DDC per village is present in all the villages of the district and it is 1.4 DDC per village in Dhar district. This shows that the physical infrastructure is almost present in all the sample districts.



4.2.3 It was considered necessary to analyse the human resources, especially vacant posts of key officers involved in NVBDCP in

the selected districts. As per the details provided by the District Malaria Officers of the selected districts, staffing of most of the posts is in place.

In Interview with MLV

Table- 7: Vacant Key Positions

Name of the post	Dhar	Jhabua	Betul
Malaria Inspector	4	0	2
Surveillance Inspector	0	0	0
Surveillance Worker	0	0	4
Superior Field worker	2	2	2
Field Worker	0	0	0

Table above shows that most of the posts related to NVBDCP are filled. But in case of Dhar district, four posts of Malaria inspector and two posts of Superior Field Workers are vacant. In case of Jhabua district, only two posts of Superior Field Worker are vacant and in Betul, 2 posts of superior Field worker and 4 posts of Surveillance Worker are vacant which needs to be filled in order to have a better performance of the districts as far as NVBDCP is concerned. Overall in all the three selected most of the key positions are in place.

4.2.4 The stock positions of the medicines, equipments and chemicals were also examined for all the 3 districts. As per the details provided by the District Malaria officer it is understood that the stock positions of all these 3 items are satisfactory and there is no shortage of any medicines or chemicals.

4.2.5 As per the information made available from the State Programme Office in Madhya Pradesh, the following provides a situational overview:

- The population catered by each PHC is 30,000 approximately.
- Medicated nets were made available under the project by Government of India. The year wise details are as given below. These were distributed among below poverty line families. If supply of nets are made available in sufficient quantity then the Programme Office is stated to be in a position to supply the same to the remaining population of high risk areas.

Table-8: Year-Wise Distribution of Medicated Nets

Year	Quantity (in Lakhs)
2002-03	0.25
2003-04	0.50
2004-05	1.00
2005-06	1.95

- The target in the State was to establish One Depot either DDC or FTD in each village. This has been accomplished.

- The target for induction is 60 lakh fish annually in the entire State. The fish are inducted into high risk villages by DMOs.
- MLVs are being placed in every 2000 population in high risk areas under EMCP project. The target of 20 slides/all fever cases in a month has been fixed on an average.
- The investigation by Lab Technician is being undertaken at CHC. In the project area, over 300 PHC level laboratories are functioning for malaria diagnosis.
- Two rounds of spray is done annually, 1st Round commencing w.e.f.15th June to 31st July and 2nd Round commencing from 1st Sept to 15th October of the year. Focal spray is also being undertaken depending upon the need in light of any situation of outbreak of malaria in a particular village.
- Insecticide and Larvicides are being used in the programme Adultcides like Pyrethrum Ext./ Malathion are also used as required.

4.2.6 **Key observations in Dhar District**

In Dhar district, there is District Malaria Officer, Assistant Malaria Officer, eight Malaria Inspectors and field staff. There is one Malaria Inspector per two blocks. There are 250 male workers and 485 female workers. There are 53 vacant positions of male workers and 50 female workers. There are 80 male Supervisor posts and only 26 are in position. Quarterly meetings have been reported to be convened with all staff for monitoring. In 2004, there was a malaria outbreak in the district and nine deaths are reported to have been caused due to cerebral malaria. Last year, the target versus achievement was recorded to be 120%. 80% of the houses reported to have undergone residual spray. There are 40 Slide Collection Centres in the district. The public – private partnership in the district is quite impressive. The private nursing homes and clinics report the cases of malaria with details to the District Malaria Officer. The following private hospitals report cases of malaria.

1. Chauhan Hospital
2. Parthidhar Hospital
3. Jain Nursing Home
4. Mittal Hospital
5. Chauhan Nursing Home
6. Suraj Nursing Home
7. Laxmi Narayan Sansthan
8. Manav Sewa Sansthan and
9. Sarvottam Pathology Centre

13,092 samples were examined by these private institutions and 214 cases were reported to the department. They send monthly reports and the department takes immediate action and follow up.

In **Miapura** village, it is noticed that majority of the people are followers of Radhaswami and mainly are vegetarians. The village reported a few TB cases which are all presently cured. People mainly drink water from tube wells. They also keep a separate tube well for drinking and washing

purposes. Few cases of Flurosis have also been noticed in the village. Though there are 40 common toilets, people still practice open defecation.

In **Megapura** village, garbage is disposed off in the open fields. There is no separate building for Anganwadi which is running from the house of an individual resident. ANM gives medicines to the shopkeepers who in turn distributes the medicines to the villagers. There is no sign board for DDCs. Most houses in the village have been sprayed with DDT and are also given bed nets. Blood samples are collected from the fever cases but the results are not generally reported back to the concerned persons. The community is not very happy with the functioning of the government facilities. The nearest health centre is 8 kms away. One private doctor visits the village and provides treatment at low cost.

Girwania village is located 125 km away from the district headquarter. It is one of the biggest villages in the block. The village is affected with the mosquito menace and people are reported with fevers all the time. There was an outbreak of Chikungunya in September 2006. 8 people were affected in one of the hamlets alone. In order to drive away the mosquitoes, they undertake fumigation of neem leaves. A government mobile van comes in the village every Friday. There is one stop dam and 14 small lakes in the village.

In **Kundlai** village, there are three Anganwadi Workers and six hamlets. It is located 15 kms away from block headquarters. In this village, despite mosquitoes none of the houses are sprayed with DDT and none of community members received any bed nets. People fumigate to drive away mosquitoes. A few mentioned that they have never even seen a mosquito net. In this village, 12 of them were affected by Chikungunya. August and September months are mainly the disease season for the village. It is noticed that mosquitoes breed near the drainage of the hand pumps. None of the houses have been sprayed for the last few years.

In **Jagodhi**, DDT is sprayed in majority of the houses. 45 families reported to have got government distributed bed nets. Electricity connection reached the village but power supply is limited to only four hours a day.

Mohanpur village is spread over 10 sq. km. The population is divided into 10-12 falias (hamlets). 80% population is composed of scheduled tribes and 20% are from OBC and general categories. The main sources of drinking water for the inhabitants are hand pumps & tube wells. In this village, despite the menace of mosquitoes, none of the houses were sprayed with DDT and none of the inhabitants received any bed nets. People fumigate to drive away mosquitoes. August and September months are mainly the disease season for the village. People still practice open defecation. None of the houses have been sprayed for the last few years.

Longsiri village with 700 households is a tribal village dominated by Bhilala tribes (70-80%) and Bhavare tribes. In this village, community members have stated to be conscious of the need to store drinking water in covered earthen pots. They all know about mosquitoes and malaria but are using only

fumigation with neem leaves to drive away mosquitoes. In this village specific intervention in the form of a campaign was undertaken to control malaria. Health workers and ANMs are developing awareness through group meetings. People spray kerosene oil over stagnant water. No Gambusia fish is reported to be put to use. Majority of the people mentioned that they sleep on the floor and that it is difficult to tie the bed nets.

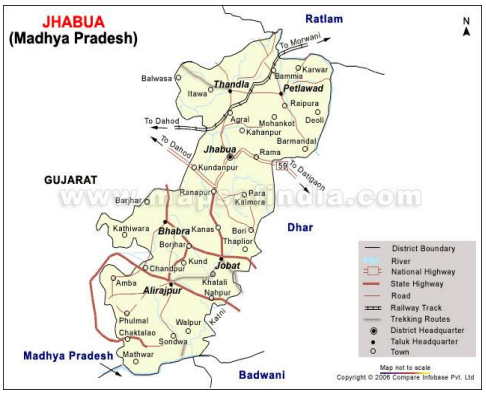
In **Jharda** village, about 80% houses are kuccha and the remaining 20% are semi pucca. Five hand pumps are providing drinking water to about 150 families. People store gray water of their houses in a pit near to their entry door and clean the pit once in 10-15 days. There is one Anganwadi Worker in the village. In this village, there are plenty of mosquitoes while none of the houses in the village are DDT sprayed. No community member seem to have received any bed nets. People fumigate with neem leaves and Kandas to drive away mosquitoes. In this village, a few inhabitants were reported to have been affected by Chikungunya. It is noticed that mosquitoes breed near the drainage of pits. None of the houses are sprayed for the last few years.

In **Khargaon** village, about 80% houses are kuccha and the remaining 20% are semi pucca. Mostly dominated by Bhilale tribes (60%), this village was selected as NIRMAL GAON by the state government which entails provision of sanitation facilities being developed in the village. There are three primary schools and two balwadis. It is located 45 kms away from block headquarters. Despite mosquito menace, none of the houses in the village are DDT sprayed and none of them receive any bed nets. Few families reported to have purchased bed nets on their own and use them regularly. People fumigate to drive away mosquitoes. In this village, Chikungunya outbreak has been observed but no death occurred. July- August and November - December months are mainly the disease season in the village.

In **Padaliya** village, garbage is disposed in the open anywhere. There is a separate building for Anganwadi which running regularly. ANM gives medicines to the shopkeepers for distribution to the villagers. There is no sign board for DDCs and FTDs. None of the houses in the village are DDT sprayed since last 5 years and none of them received any bed nets. People fumigate to drive away mosquitoes. In this village, Chikungunya outbreak has been reported but no deaths occurred. None of the houses are sprayed for the last few years. The nearest health centre is 8 kms away. One private doctor is available in the village who provides treatment at low cost.

4.2.7 **Key observations in Jhabua District**

There are twelve blocks in this district with 1,344 villages. There are 346 sub Centres in this district and only 300 ANMs are working. 46 Sub-Centres are without any ANM. There are 180 sanctioned posts of multi purpose workers and only 115 are in place. In 2003 there was a Malaria outbreak and no deaths were recorded. Among migrated labourers, few cases of Chikungunya also reported. Out of 1,344 villages in the district, only 625 high risk villages were sprayed with DDT. The number of rooms sprayed with DDT is 187,166 and number of houses which denied spraying is 1,057. 997 houses were found locked during this spray campaign. There are 900 ASHAs in place and are working in tandem with Anganwadi Workers and ANM. There was a shortage of Primaquine 2.5 mg tablets. No private labs are involved in malaria identification in this district.



In **Samuhyee** village, there were reported public announcements and nukkad nataks on malaria. The population of the village is around 3500 and number of voters is around 2,200. There are 750 houses in this village, out of which 45 are of pucca type. Most of the community members utilized the services of FTD, and know that mosquitoes spread malaria and the disease could be dangerous. Rainy season is stated to be the major season for spread of diseases from mosquitoes.

Tandi village was affected by Chikungunya. The key signs identified by the community members are shivering, continuous headache and joint pain. Few use bed nets and majority of the population fumigate neem leaves to drive away mosquitoes. Though bed nets were distributed in the village, in the focus group discussions, none of the participants were noted to have got government supplied bed nets. It is noticed that none of the community members had given blood samples for diagnosis of malaria. People are still practicing open defecation. In this village, electricity supply is restricted to once a week.

In **Machlia** village, there are two big and three small lakes. In this village, people store drinking water in earthen pots. They all know about mosquitoes and malaria but are using only fumigation to drive away mosquitoes. In this village, though located near the main road, no specific intervention has been made to control malaria. The water from tube wells is stored in one place and no Gambusia fish is put in to this stored water. There was no initiative to drain out the water as well. This was seen to act as a breeding ground for the mosquitoes. Majority of the people mentioned that they sleep on the floor and is difficult to tie the bed nets.

Pipalya village a population of about 1600 has around 75% educated males & females residing in 550 households. Few people were affected by Chikungunya last year. Few use bed nets and majority of the population fumigate neem leaves to drive away mosquitoes. Though bed nets were distributed in the village, as revealed in the focus group discussions, most of the community members other than BPL families received government supplied bed nets. It is noticed that blood samples for diagnosis of malaria were collected. People are still practicing open defecation with some arrangement for toilets constructed under Nirmal Village campaign. In this village, electricity supply is restricted to few hours in the day. One MCH centre is being run by Nirmal Jyoti Mission which provides health services.

Kallipura village has a population of around 1200 residing in 200 households. A few people were reported to have been affected by T.B., Dengue & Chikungunya last year. These were stated to have been caused by the migrant families returning from Rajasthan, Maharashtra and Madhya Pradesh.

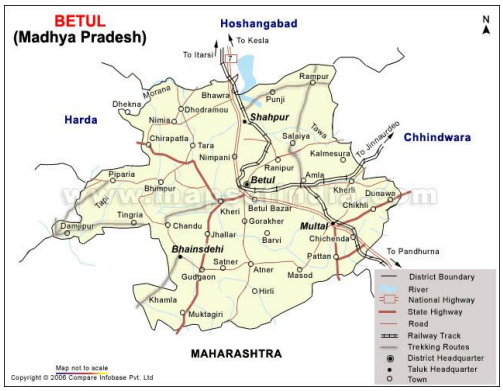
Hattyadelli village is spread over 15 sq. km. The population is divided into 20-22 falias (hamlets). 90% of the population is tribal and 10% are from OBC

and general categories. Almost 70% houses are Kaccha while 10% & 20% are pacca and semi pucca respectively. The main sources of drinking water are hand pumps and tube wells. In this village, there are plenty of mosquitoes and none of the houses in the village are DDT sprayed and none seemed to have received any bed nets. People fumigate to drive away mosquitoes. People still practice open defecation . None of the houses were sprayed for the last few years. Blood slide samples were being collected from people who had fever and positive cases were being treated.

4.2.8 Key observations in Betul District

In Betul, there are 10 blocks and 1328 villages. There are 93 vacant places of MLVs in this district. In this district, there are 217 male health workers and 297 ANMs. All ANMs are in place. There is no shortage of drugs and chemicals. In 2000 – 01, there was malaria outbreak in the whole district. Bhimpur, Chicholi, Shah Pur and Koda Dongri blocks were mainly affected. 20,000 positive cases were identified and there were 30 deaths due to FP. For regular surveillance there are 1,781 FTDs and 1224 DDCs in the district. In 2004, there were 841 FP cases, which reduced to 193 in 2005 and again increased to 845 in 2006. In 2004, there were 1063 vivax cases and 2 deaths. In 2005, it reduced to 373 vivax cases and no deaths. Again in 2006, the number of vivax cases increased to 1323 and 8 deaths occurred. As per the district Malaria officer, increase of malaria cases in 2006 is due to labour migration. They reinforced spray activities and biological control through Gambusia fish. In 2003, 50,000 bed nets were distributed, but the number reduced to 12,500 in 2005. The District Society made a decision to collect Rs. 20 per bed net from APL families and Rs 10 per bed bet from BPL families. They are distributing the nets free of cost to absolute poor. There were 11 malaria campaigns in the district during the past year. In 2006, there was Chikungunya outbreak in the district and 35,520 cases were reported. Though there were 3,096 indoor cases in the hospital, no deaths were reported in the district. The district is planning special surveillance for Malaria and Gambusia fish is being put into most of the places. In this district, there are several dams and lakes, which act as the main breeding places for the mosquitoes. Several anti larvae techniques are used to control the mosquito breeding. In 58 high-risk villages, two rounds of DDT have been sprayed in the year 2006. There are 41 labs in the district for slide examination. In 2004, 242,927 slides were collected out of which 1063 were positive cases and 841 were FP cases. In 2005, 242,928 slides were collected, 373 were the positive cases and 193 were FP cases. In 2006, out of the 282,871 slides collected, 1323 turned out to be positive and 845 were the FP cases. No private agencies are involved in slide collection. In order to enhance the surveillance, the district is using Modified Action Plan Form No. 2.

In **Saighundra** village, there are two Anganwadi Workers and one ANM. The population of the village is 1,358 and 250 families are residing in this village. In the focus group discussions, it is noted that people are aware of the symptoms of malaria and the ways in which mosquito multiplies. None of the participants who had suffered fever



before, tested blood slide samples for malaria.

In **Tetermal** village, blood slide samples were collected from people who had fever and positive cases were treated properly. DDT was sprayed in many of the houses and Gambusia fish were put in many of the stagnant water bodies. There were 5 to 6 small lakes with one stop dam. There are 70 families with a population of 435 people.

Sohagpur village of Betul Block is a mixed-group village with10% tribal population and 80% general and OBC population. There are three Anganwadi Workers and one ANM, TTD, MLVs and CHW-cum-Supervisor and other staff at the Health Sub-Centre. The population of the village is around 2500 with about 500 households in this village. In the focus group discussion, it was observed that the community members are aware of the symptoms of malaria and the ways in which mosquito multiplies. The participants who had suffered fever tested blood slide samples for malaria and were treated properly. Generally people use bed nets purchased from private sources.

In **Kuppa** village, there are 8 hand pumps providing drinking water to about 700 population. In this village, people store drinking water in earthen & metal pots and cover it with lids. Proper garbage disposal and cleanliness is being maintained by the residents. The residents dispose their daily garbage in compost pit situated far from their houses. Majority of villagers are found to be aware of mosquitoes and malaria but are using only fumigation to drive away mosquitoes. In this village, though located near the main road, no significant intervention has been made to control malaria. Gambusia fish however was indicated to have been put in the ponds and people have experienced benefits of cleanliness and gambusia fish.

4.3 Rapid Social Assessment - Chhattisgarh

4.3.1 Chhattisgarh has 16 districts with a population around 24 million. Out of the total population, 80 percent live in rural areas while around 50 % population is tribal. Chhattisgarh contributes around 10% new malaria cases per annum as per the national data. The API in 2006 was 5.62 while SFR was 3.11. The annual blood examination rate (ABER[11]) required to calculate API, the predictor of operational efficiency which should be 10% of the population, was 13.88 in 2006. Out of all the districts in the State, 9 are endemic for filaria and the causative organisms involved are B.malayi and W.bancrofti. According to health database maintained at Raipur, there were 1400 cases of hydrocele and around 700 cases of lymphadema in the State in 2006. Chhattisgarh has reported only 12 cases of dengue and 7 cases of chikungunya in the year 2006.

[11] The malaria data are tabulated into the following categories: the total population under surveillance (Population), the number of Blood Slides Examined (BSE), the number of blood smears found positive for the malaria parasite (Positives), the number blood smears found positive for *Plasmodium falciparum* (Pf), the percentage of Positives that are caused by *Plasmodium falciparum* (%Pf), the Annual Blood Exam Rate (ABER), the Annual Parasite Index (API), the Slide Positivity Rate (SPR), and the Slide falciparum Rate (SfR). The following are the equations used to calculate the derived rates: ABER = # of Blood Slides collected / Population; API = # of Positives / Population; SPR = # of Positives / BSE; SfR = Pf / BSE; %Pf = Pf / Positives.

4.3.2 For the purpose of SABA, 20 tribal villages in four districts were selected in Chhattisgarh by the State Programme Office of NVBDCP. In district Raipur, Gariyaband and Mainpur were the two sample blocks selected out of three tribal blocks (coverage 4 sample villages). In Kanker, all blocks are tribal (coverage 7 sample villages). In Rajnadgaon, there are 3 tribal blocks (coverage 4 sample villages) while in Durg, there is only one tribal block (coverage 5 sample villages).

The comparative position of selected districts is summarized below:

Table-9 : Comparison of Selected Districts

Items	Chhattisgarh State	Raipur	Kanker	Rajnandgaon	Durg
Area (sq km)	135237	15359	8285	NA	NA
Total population	20795956	3009092	746382	1482480	3209523
Literacy	66	56.8	73	70	73
Development Blocks	146	16	7	9	NA
Tribal Developmental blocks	85	3	6	3	1
CHCs	132	NA	7	9	11
PHCs	712	16	24	56	13
Sub Centres	4692	496	204	306	441
MPW(M)	2940	281	169	NA	NA
MPW(F)	4334	479	204	NA	NA
No. of Villages	20379	2159	1082	1625	1803
FTDs	11685	1013	140	4218	3890
DDCs	20433	338	1752	2546	2713
Malaria Clinic	180	21	38	NA	NA
Anganwadi		2294	1283	NA	NA
Mitanins (ASHA)	36000	6500	1752	3740	5113
MLV	2000	1511	178	120	80
No. of larvivorous fish put in '06	NA	NA	75000	NA	NA
No. of people using bed nets	NA	NA	15571	NA	NA

The performance indicators of districts covered in Chhattisgarh is summarized below:

Table 10: Performance Indicators of Districts Covered in Chhattisgarh

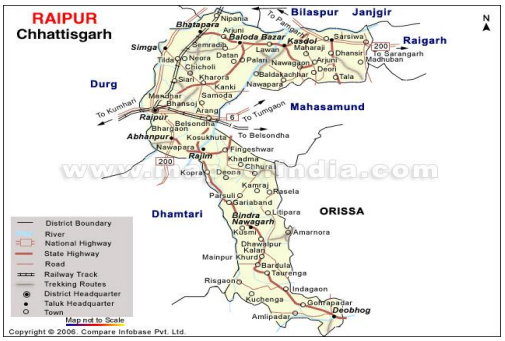
Indicators	Year	Kanker	Raipur	Rajnadgaon	Durg
API	2005	32	0.55	2.21	0.6
	2006	18	0.50	1.91	0.5
ABER	2005	45	11	14.12	12.51
	2006	31	12	13.08	11.71
SPR	2005	7	0.6	1.62	0.4
	2006	5.8	0.5	1.46	0.4
SFR	2005	5.8	0.3	0.11	0.1

	2006	5.4	0.3	0.23	0.1

4.3.3 Key Observations in Raipur District

Raipur is among the low prevalent districts for malaria with API <2 and the mosquito species is tolerant to DDT. Raipur is among the affected districts for lymphatic filariasis and the common causative organism is W.bancrofti. There is a District Malaria Officer (DMO), Assistant Malaria Officer (AMO), six Malaria Inspectors and field staff. In Raipur district, One Malaria Inspector is incharge of two or more blocks. There are 6000 Mitanins (Asha workers) in the district serving about 2100 villages. In general, almost for every group of 50-70 families, one Mitanin is working. These workers are working under the supervision of ANM who are key health personal at the PHC & Sub-Centre level. It was reported by DMO that 3.5 lakh fishes have been distributed through Mitanins in all the 14 Blocks of the district. About 13000 bed nets are distributed in general to BPL families. Gram Panchayats were involved in distribution and selection of beneficiaries. In the district, there are 1013 FTDs and 338 DDCs, each taking care of 500-1000 families. Capacity building for Mitanins was organized and the responsibility for operation of FTDs and DDCs was given to them. There are 15 Lab Technician positions in the district out of which 7 positions are vacant.

Four villages were covered in the selected two blocks and the findings are as follows :



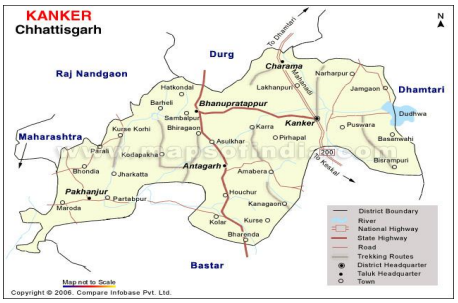
In village **Argadi** of Mainpur block, there are around 700 inhabitants, out of which 90 percent are tribal. The major population is illiterate in this village. There are only three sanitary latrines including the house of "gram pramukh' - an indicator of the current situation with respect to sanitation. In this village there is no health center but Mosquito nets were distributed from health department in this village. In this village there is a AAGAN BARI SOCIETY which provides health services to women and children.

In village **Shobha** of Mainpur block, which has a population of around 800, there are mainly wells and few hand pumps for drinking water. Most of the population is literate but only upto primary level, as a result of which the current practices are not very poor in relation to health and hygiene but still the dry wash technique post defecation prevails in the village. It was declared as NIRMAL GAON, as a result of which Panchayat will construct sanitary latrines in each and every house, the cost of which will not be charged in case of BPL families. Most houses in the village were stated to have been sprayed with DDT and is also given bed nets. Blood samples are collected from the fever cases and only positive cases are being followed up with the report and treatment, due to which other community members seem to remain ignorant of their condition. The community members are noted to go to local private doctors for diagnosis and treatment, partly due to the distance involved to reach the Sub-Centre.

Malgaon of Gariyaband block has a population of around 1550, among which 80 percent are tribal. The village has Government as well as private hand pumps with a few open wells. The village also has a health sub center with full staff. It was noted that the IEC material is not being distributed to the community in the village. Bed nets are being used by BPL families.

Baruka village of Gariyaband block is a small village with a population of around 500, but the major portion of population was educated upto middle school level. Majority of tribal community is stated to utilize bed nets. One of the key reason for spread of malaria is stated to be the proximity of forest. There is no private doctor is available in the village. Generally people go to the Sub-Centre for their illnesses. ANM visits the village on a periodical basis.

4.3.4 Key observations of Kanker District



Kanker is among the highly prevalent districts with API >10. The mosquito species is resistant to DDT in this district and therefore pyrethroids are used for spray. It has total 11 blocks, out of which 10 are predominantly tribals and the remaining one is mixed. During 2005, it was among the highly prevalent areas with an API >20 but in 2006 the API dropped down to <20. Ninety five percent cases in this area belong to P. falciparum. In terms of health infrastructure, there is one DMO, one AMO and three MIs with two vehicles for transportation. District Kanker has extreme climatic conditions. High SPR and SFR during the winter month of December are explained by the fact that tribals use fire in their houses during night to keep the house warm. This practice makes the microclimate in the house conducive for the metabolic activities and development of parasite in the insect and maintains transmission. The area is covered under thick forest. Such situation provides favourable atmosphere for P.falciparum.

The transmission and incidence of malaria in this district is characterized by seasonal fluctuations. The peak transmission was observed after rains. Magnitude of rains, number of rainy days and spells and agricultural pattern are the factors, which determine the breeding of vector, its density and longevity. During the rains large pools are formed which are the preferred breeding sites of An.culicifacies. After rains, water starts receding and left within low running channels which are the most favourable breeding sites for An. fluviatilis. Hence, the transmission continues from July to December by An.culicifacies during monsoon and by An.fluviatilis during post monsoon. The P.falciparum transmission predominates in all the seasons.

The district has adequate rapid diagnostic kits but according to health functionaries, as they have not undergone any training, false negatives are noted to be high.

A total of 8 villages were covered in this district, details of which are captured below:

In **Junvani** village of Amoda block, there are around 600 inhabitants and it has a Sub Centre with one MPW (F) only. There is one AWW and three

mitanins. Most of the population was educated upto middle school. Mostly houses were kucchha made up of kaprel. It was stated that the Multi-Purpose Worker (MPW), who collects blood smears, oversees several health programs and taking blood smears is not the one given the most attention.

The **Markatola** of Amoda block, has a population of around 1000 with reasonable sanitation and awareness level regarding health and hygiene. The households are reported to have 2-3 bed nets per house. This village was awarded as NIRMAL GAON, under which scheme, all the houses will be provided with sanitary latrines. There was one AWW and five mitanins. Most of the houses were kuccha and of mud. The main water supply is from hand pumps only with very few open wells. There are two self-help groups functioning under the guidance of village panchayat and MLA, which are being utilized in resoaking of bed nets on a six monthly basis.

In **Udkuda** village, there are three big ponds. In this village, people store drinking water in earthen pots, brought from hand pumps. One river flows near to the village which is being used for bathing and washing of clothes. People are aware about mosquitoes and malaria but are using only fumigation using herbs and neem leaves to drive away mosquitoes. In this village, (connected with the main road by a 5 km link road), specific interventions in the form of kerosene oil spray in the ponds, organization of Awareness Camp and Malaria Campaign were undertaken to control Malaria. There are 500 households and around 2000 inhabitants in this village. 3 years ago, the village was said to be affected by malaria resulting in 7-8 deaths. The community is dissatisfied with the health services provided by the health administration.

Khairkhera village has a population of around 2400 people residing in 470 households. A few people affected by seasonal fever was reported by villagers. Bed nets are provided to most of the villagers which they use regularly. Majority of the population seem to be generally aware of sanitation and hygienic conditions and fumigate neem leaves and locally available herbs to drive away mosquitoes.

Village Pond

It is noticed that blood samples for malaria diagnosis are collected by mitanins on regular basis. On account of lack of adequate sanitation facilities, the villagers are still practicing open defecation, though toilets are seen in a few houses. Specific interventions in the form of kerosene oil spray in the ponds, organization of Awareness Camp and Malaria Campaign were undertaken to control Malaria. In august 2006, the government officials are stated to have inducted Gambusia fish in this village, in addition to spraying of kerosene in drains and supply of bleaching powder and chlorine tablets for drinking water. A doctor from district hospital also is reported to visit this village once in a month.

In **Kacche** village, mixed population dominated by Gond and Halwa tribes (70%) was noted. An estimated literacy rate of around 75% was observed. Radio, TV and Newspaper are widely used. About 80% population use bed nets regularly, while BPL families have been provided bed nets by the project.

Fumigation with neem leaves and locally available herbs as well as use of neem & mustard oil as an application to drive away mosquitoes are being practiced. People of this village keep watch on sanitation and hygienic conditions and to an extent maintain the cleanliness. The national NGO CARE is working here for the last 5-6 years for the overall development of villagers. Panchayat along with Health department officials organize health camps and awareness campaigns. No outbreak of VBDs seems to have occurred during the last two years .

Salebhati is a mixed population village of 500 inhabitants. This village was identified by the administration as ' Nirmal Gram' and has katcha houses. Assistance for the construction of toilets and bathrooms are provided by the local administration under Nirmal Gram scheme. Eight hand pumps are providing drinking water supply in this village. FTD and DDC facilities through Mitanins and ANM is being provided. It was noted that drug distribution centers give out drugs to people with malaria without taking blood smears, so those malaria cases are not known or counted. In the focus group discussions, it is observed that people are aware of the symptoms of malaria and the ways in which mosquito multiplies. Participants who suffered fever, tested blood slide samples for malaria and were treated properly. Women of this village run a Self Help Group (SHG). In this village there is also an AAGAN BARI SOCIETY.

Kirgabhati village is a tribal village and Gond constitutes the main tribe in the village. Their main occupation is agriculture and labour work. This small population of 90 families are being provided employment through 'Jawahar Rojgar Yojana" during the year. Most of the families have been provided with bed nets. Participants who had suffered fever, tested blood slide samples for malaria and were treated properly. Mitanins are the key field level workers maintaining FTDs and DDCs in this village. Sufficient number of hand pumps (7 for 90 families) are providing drinking water. The Health Sub-Centre is located around 3 km from this village. The ANM house is located in this village itself.

4.3.5 Key Observations in Rajnadgaon District

In Rajnadgaon there are 1625 villages being covered through 696 Panchayats. It has 3 tribal blocks out of a total 9 blocks. There are 2,546 DDCs and 4,218 FTDs for regular surveillance in the district mostly run by 3740 Mitanins. Blood slides collected by Mitanins are being examined through 32 Centres. In 2006, out of 212,330 slides collected 3424 turned out to be positive and 656 were the PF cases. There are 5 Malaria Inspector posts in the district which are all vacant as per the recent data. Likewise 80% male health supervisor and 30% female health supervisor positions are vacant.

In Penda Kodai village has 172 Gond tribe families. Their main occupation is agriculture. Bed nets are provided to most of the families . People who have

suffered fever, tested blood slide samples for malaria and are being treated properly by Mitanins. Mitanins are the key field level workers maintaining FTDs and DDCs here. Sufficient number of hand pumps are providing drinking water. Fumigation with neem leaves and locally available herb to drive away mosquitoes is being practiced by the most of the families. There is a sub center in this village. The village also has two self-help groups.

Karakas is a village of mixed population dominated by Gond tribes followed by OBC & SC and some of the higher caste families. The village is noted to have a high level of literacy rate. Radio, TV and Newspaper are widely used. About 80% population use bed nets regularly. Fumigation with neem leaves and locally available herb to drive away mosquitoes is the current practice. Bed nets are being used by most of the village families. People of this village keeps watch on sanitation and hygienic conditions and maintain the cleanliness. Household garbage is stored in a pit far from the houses and is being utilized for compost fertilizer. Panchayat is involved in organising health camps and awareness campaigns . No outbreak of VBDs has occurred for the last several years.

In village **Devarsur** of chowki block, there are around 90 inhabitants, out of which about 90 percent are tribal (Gond) & 10% SC. The major population is illiterate in this village. Fumigation with neem leaves and locally available herbs and use of neem oil, electricity fans, bleaching powder, bed nets are used to safeguard against mosquitoes. It is observed that hygiene & sanitation is poor in this village, drains are chocked and unclean, garbage is thrown every where. People suffer with seasonal diseases frequently and approach local Sub-Centre for treatment. Mitanins collect blood samples and provide medicine. FTDs and DDCs are maintained by Mitanins and ANM. Around 50% are stated to use bed nets received from Government while around 30% have procured the nets from private sources. Gambusia fish is reported to have been inducted in this village.

Rangakotra , a big village, has mixed population dominated by Gond and Halwa tribes (70%) and OBC & SC. The houses are mixed with pucca and semi pucca construction. There are about 750 households. About 80% of the population uses fumigation with neem leaves, use of bed nets, use of neem & mustard oil, coils, electricity fans etc. It is observed that sanitation and hygienic conditions are poor. In the focus group discussion, it is observed that people are aware of the symptoms of malaria and the ways in which mosquito multiplies. Participants who had suffered fever before, tested blood slide samples for malaria.

4.3.6 Key Observations in Durg District

In **Durg**, there are 1803 villages being covered through 945 Gram Panchayats. It has one Tribal block, namely Dondi. In this district, there are 5117 Mitanins working as health workers in the villages. All ANMs are in place. It was stated that generally there is no shortage of drugs and chemicals. For regular surveillance there are 3850 FTDs and 2713 DDCs in the district. In 2005, 23,750 bed nets were distributed. District Society made a decision to provide bed nets with the help of local Panchayats to the APL and BPL families. These are being distributed free of cost to absolute poor. There are 10 sanctioned posts for Malaria Inspector while 2 are in position and 8 are vacant. In the district, there are several dams and lakes which act as the main breeding ground for the mosquitoes and consequently

Gambusia fish is being put into most of these sites. In high risk villages, DDT has been sprayed in the year 2006. No private agencies are involved in slide collection.

Kusumkasa village of Dondi block has 75% kutchha and 25% & 5% semi pucca and pucca houses respectively. It has1560 houses served by one Health Sub Centre headed by an ANM. The health team has MLVs and Mitanins. People get drinking water from hand pumps and store in metal and earthen utensils. Bed nets are stated to be provided to most of the villagers which they use regularly. Regular fumigation, cleanliness and good garbage management are stated to keep families free from malaria. It is noticed that blood samples for malaria diagnosis are collected by mitanins on regular basis. People have high level of literacy rate. Radio, TV and Newspaper are widely used. About 80% population use bed nets regularly. DDT was sprayed in many of the houses and Gambusia fish were put in many of the stagnant water bodies. However, a few chronic cases of filaria were noticed and the patients are observed to be getting treatment privately through a local doctor.

In **Putarvahi** village, there are two big lakes. In this village, people store drinking water in earthen pots. They all know about mosquitoes and malaria but are using only fumigation to drive away mosquitoes. Blood samples for malaria investigation are collected by mitanins on regular basis. This village is located near the main road but no significant intervention has been made to control Malaria. Gambusia fish is not being put in to stagnant water bodies. People have high level of literacy rate (80%). Radio, TV and Newspaper are widely used by about 50% of population. Fumigation with neem leaves and locally available herbs are used to drive away mosquitoes. People some time consult with local doctors for treatment. This village has about 80% kutcha and 20% semi kutcha houses. Garbage is collected in a pit far from the houses. A significant percentage of villagers are stated to be using government supplied bed nets.

Chikalakasa village of Dondi block has 75% pucca and 20% & 10% kutcha and semi pucca houses respectively. It has around 750 houses served by one Community Health Centre headed by a Doctor and his full fledged team. The health team has MLVs and mitanins. The villagers are seen to get drinking water from hand pumps and store it in metal and earthen utensils. Bed nets are provided to the families selected by local panchayat. Regular fumigation keeps families free from malaria. It is noticed that blood samples for malaria checking are collected by mitanins on regular basis. People have high level of literacy rate. Radio, TV and Newspaper are widely used. About 80% population use bed nets regularly. Few chronic cases of filaria are found but the health centre is found unaware about this

In **Ghotiya** village, people store drinking water in metal & earthen pots. They all know about mosquitoes and malaria but are using fumigation, bed nets and cleanliness to drive away mosquitoes. Blood samples for malaria checking are collected by mitanins on regular basis. Fumigation with neem leaves and locally available herbs is used to drive away mosquitoes. People

some time consult with local doctors for treatment. This village has about 90% kutcha and 10% semi kutcha houses. Garbage is collected in a pit far from the house. A significant percentage of villagers are stated to be using government supplied bed nets. There are around 450 households in this village. There is a PHC and Ayurvedic dispensary available in this village.

Pacheda village of Dondi block has 85% Kutcha and 10% & 5% semi pucca houses respectively. The health team has MLVs and Mitanins. Bed nets are provided to the families selected by local panchayat, but they are not aware of the treatment of bed nets.. Regular fumigation is said to keep families free from malaria. It is noticed that blood samples for malaria dianosisare collected by Mitanins on regular basis. The village has a mixed population with 75-80% tribal communities. Villagers are reported to go to about 4 K.M away from the village for treatment facilities and are generally dependent on local private doctors.

4.4 Rapid Social Assessment – Andhra Pradesh

4.4.1 Andhra Pradesh has 8 notified tribal districts under schedule 5 and for the conduct of SABA, 4 sample districts were selected by the State Programme Office of NVBDCP considering the accessibility and other field constraints. Two of the selected districts i.e. Vishakhapattnam and East Godavari are situated on the north-eastern side of the state bordering Chattisgarh. The third district Mehbubnagar is located on the western side of the state bordering Maharashtra state, while the fourth District Adilabad is situated on the north side of the state bordering with Maharashtra state from west & Chattisgarh from north.

The comparative position of selected districts is summarized below:

Table-11: Comparison of Selected Districts

Items	Vishakhapattnam	East Godavari	Mehbubnagar	Adilabad
Area in sq km	11,161 sq.km	10,807 sq.km	NA	NA
Mandals (Development blocks)	43	60	84	
Sub Centres	538	NA	674	NA
Sector PHCs	76	69	84	63
Sector Labs\Sub Units	14		76	
Sections	538	430	676	304
No. of Villages	5428	1340	2001	2827
Total Population	39,54,625	48,95,579	32,85,503	26,91,337
Tribal Population	5.7 Lakhs	1,91 Lakhs	NA	NA
FTDs	883	288	48	169
DDCs	2334	186\177	22	809
Malaria Clinics	76	69	85	57
Anganwadis	NA	NA	NA	NA
WHVs				
Temporary & permanent source of water	NA	NA	NA	NA

No. of larvivorous fish put in '06	89600	NA	NA	NA
No.of People using Bed Nets	44581	45300	NA	NA

J.E incidence has been reported from various parts of Andhra Pradesh regularly since 1979 onwards. This is a post monsoon disease which generally comes in-between September to December. In Andhra Pradesh, the incidence of Dengue was almost nil up to the year September, 2002. Only sporadic cases were reported in chittoor District which is neighboring Chennai during the year 2001 & 2002. The Dengue incidence is mostly concentrated in urban and semi-urban areas. Chikungunya outbreaks have been reported in Kadapa, Chittoor and Anantpur districts of AP which is stated to have slowly spread to other districts. 16 districts are identified as endemic for filariasis in the State. Based on the micro filaria rate, NFCP units were sanctioned in phased manner to delimit the magnitude of the filaria problem. At present in Andhra Pradesh there are 29 NFCP Units, 4 Filaria Clinics, 1 FRTC and 2 survey units in 14 districts and the Filaria Control Programme activities are confined to urban and semi-urban areas only.

The performance indicators of the selected districts is summarized below:

Table- 12: Performance Indicators of the Selected Districts

Items	Year	Vishakhapattnam	East Godavari	Mehabubnagar	Adilabad
Malaria Positive cases	2004	9894	5944	204	758
	2006	5984	8765	158	902
PF Cases	2004	7312	5010	841	559
	2006	3921	7357	104	725
SPR	2004	1.1	0.89	0.07	0.24
	2006	0.8	1.30	0.04	0.32
Malaria Deaths	2004	00	Nil	NA	NA
	2006	00	Nil	NA	NA

It is seen from the above table that East Godavari and Adilabad districts are performing as well as Vishakhapattnam and Mehabubnagar districts in terms of malaria control. The number of malaria positive cases in East Godavari and Adilabad districts were 5944 &758 respectively in 2004 which increased to 8765 & 902 respectively in 2006. The Slide Positive Rate (SPR) increased from 0.89 &0.24 respectively in 2004 to 1.30 &0.32 respectively in 2006. The two districts need special attention for control of malaria.

4.4.2 The tribal population as a percentage of total population In Vishakhapattnam district is about 18% while this is about 4% in East Godavari district. In terms of absolute numbers, tribal population is highest in Vishakhapattnam district which is 5.7 lakhs compared to 1.91 lakhs in East Godavari district. The field survey revealed that negligible percent of population are using bed nets distributed by the Government. On an average, there are 1-2 WHVs present

at Health Sub-Centers. If the WHVs are supported , supervised and monitored properly, it is noted that they can perhaps undertake disease surveillance better. DDCs and FTDs are present almost in every sample village.

4.4.3 It was considered necessary to analyse the human resources, especially vacant posts of key officers involved in NVBDCP in the selected districts. As per the details provided by the District Malaria Officers of the selected districts, staffing of most of the posts is in place except the key supervisory positions of AMO and MPHS. This requires immediate attention.

Table- 13: Vacant Key Positions

Name of the post	Vishakhapattnam	East Godavari	Mehabubnagar	Adilabad
Assistant Malaria Officer	2 (65%)	Nil	2	NA
Sub Unit Officer	5 (60%)	Nil	7	NA
MPHS (M) Worker	18 (70%)	14	Nil	NA
MPHA (M)	6 (about 3 %)	6	47	NA
Lab technician	6 (about 18%)	12	26	NA

Table above hows that most of the key posts related to NVBDCP are not filled. In case of Vishakhapattnam district, two posts(65%) of Assistant Malaria Officer and five (60%) posts of Sub Unit Officer are vacant. In case of Mehabubnagar district, seven posts of Sub Unit Officer are vacant which need to be filled in order to ensure better performance of the district.

4.4.4 The stock positions of the medicines, equipments and chemicals were also examined for all the 4 districts. As per the details provided by the District Malaria Officer, it is understood that the stock position of all the 4 districts are satisfactory and there is no shortage of any medicines or chemicals in general.

4.4.2 As per the information made available from the State Programme Office in Andhra Pradesh, the following provides a situational overview:

- The population catered by each PHC is 30,000 approximately.
- Medicated nets were made available under the project by Government of India. These were distributed among below poverty line families on the basis of 1 bed net to a family of 2 members and an additional bed net in case of additional 2 members in the family. This scheme has been followed specially in the tribal areas. If supply of nets are made available in sufficient quantity, then the Programme Office is stated to be in a position to supply the same to the remaining population of high risk areas.
- The target in the State was to establish one Depot (either DDC or FTD) in each village. This has been accomplished.
- The target is for induction is 60 lakh fish annually in the entire State. The fish are inducted into high risk villages by DMOs.

- CHWs are being placed in every village in high risk areas under EMCP project. The target of 20 slide examinations/all fever cases in a month has been fixed on an average.
- The investigation by Lab Technician is being undertaken at PHC. In the project area, PHC level laboratories are functioning for malaria diagnosis.
- Two rounds of spray is done annually, 1st Round commencing w.e.f.15th June to 31st July and 2nd Round commencing from 1st Sept to 15th October of the year. Focal spray is also being undertaken depending upon the need in light of any situation of outbreak of malaria in a particular village.
- Insecticides and Larvicides are being used in the programme Adultcides like Pyrethrum Ext./ Malathion are also used as required.

4.4.6 Key observations in Vishakhapattnam District

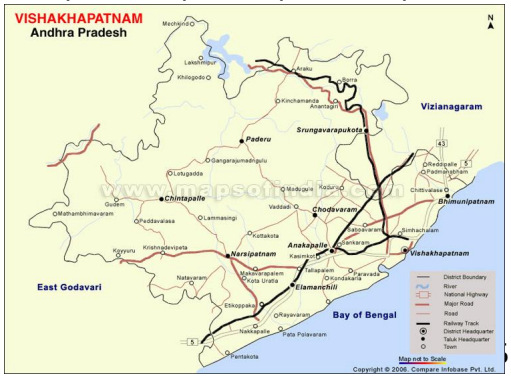
Vishakhapatnam District has 70 Primary Health Centers with a population of 39.5 lakh out of which 33 PHCs with 5.7 lakh tribal population, which comes under high risk, are confined to 7 foot hill primary centers. One urban malaria unit is functioning in Visakhapatnam city with 13.8 lakh population. There are 2 Anti Malaria Units, one at Gajuwaka and the other at the Steel Plant, which comes under project area.

The following anti malaria activities were undertaken in the district during 2006:

- Intensive surveillance activities in the entire district through MPHA (M) & (F)
- Preparation of Action Plan with calendar of activities for implementation
- 1st round of Malathion 25% and 2nd round of Alpha Cyper Maetrin (Synthetic Pyrethroid) spray operations were completed and 3rd round is in progress.
- Anti larval operations are being taken up at high-risk villages.
- Deployed paramedical staff in vacant sections for a period of 45 days.

In Vishakhapattnam district, there is a District Malaria Officer, Assistant Malaria Officer, eight Malaria Inspectors and field staff. There is one Malaria Inspector per two blocks. There are 250 male workers and 485 female workers (There are 53 vacant positions for male workers and 50 for female workers). There are 80 male supervisor posts but only 26 are in position. Quarterly meetings have been reported to be convened with all staff for monitoring. In 2004, there was a malaria outbreak in the district and nine deaths were reported to have been caused due to cerebral malaria. Last year, the target versus achievement was recorded to be 120%. 80% of the houses reported to have undergone residual spray. There are 40 Slide Collection Centres in the district. The public – private partnership in the district is quite impressive.

A total of 4 sample villages were covered in this district, details of which are captured below:



Bhemavaruru village is located about 65 km away from the district headquarter & about 25 km away from the PHC. It is one of the remote villages in the PHC. The village is affected by mosquito menace and the tribal people report frequent fever outbreaks. The mosquitoes are sought to be controlled by the tribal communities through fumigation of neem leaves and herbs. The CHW runs FTD and DDC and takes care of people regularly. It was observed that there is no sign board for DDC. Most houses in the village have been sprayed with DDT and are also given bed nets. Blood samples are collected of the fever cases but the results are not generally reported back to the concerned persons. The community is not very happy with the functioning of the government facilities. People still practice open defecation

In **Valsampeta** village, garbage is disposed off in the open fields far from the houses. There is no separate building for Anganwadi which is running from the house of an individual resident. CHW gives medicines and runs FTD. There is no sign board for DDC & FTD. Most houses in the village have been sprayed with DDT . People mainly drink water from HPs which are in sufficient number. Drinking water is stored in metal utensils and covered with lid. People still practice open defecation. Fumigation of neem leaves and herbs are used to contain mosquitoes. For malaria treatment, the community members are stated to approach the nearest health centre which is situated about 5 km away.

Gopavaram village has 60 houses in all and the houses are mud plastered (with thatched roof). Only 30% houses are with tiled roof. Garbage is disposed off in the open fields and on the hill side, near the houses. There is no drainage facility available. HPs are observed in the village but are stated to be non-functional for many years. The tribal community members have returned to use the two wells for fetching water for daily use. There has not been any epidemic or outbreak of any VBDs in the village. CHW distributes the medicines to the villagers. All houses in the village have been reported to be sprayed with DDT and bed nets distributed to the households. Bed nets are stated to be in use. The nearest health centre PHC is about 8 kms away. Villagers have been found to be aware of the general symptoms and preventive measures of Malaria.

Rabbinsigna is a 100% tribal village and has about 620 households. The village is located about 15 kms away from nearest PHC. There is one Anganwadi Centre and 2 SHGs functioning in this village. All houses are stated to have been sprayed with DDT and the community members received bed nets, which are being used. August and September months are mainly the disease season for the village. Wells are being used for drinking water purpose. Electricity reached the village but the power supply is limited to only a few hours a day. Radio is a major means of information for the village community. DDC and FTD are run by a CHW who collects blood samples and also distributes medicines to the villagers. There are no wall writings or display of posters or distribution of pamphlets in the past one year on malaria/VBDs was not recalled by the village community members.

4.4.7 Key observations in East Godavari District

With a surveillance population of 39.37,971, East Godavari District Is broadly divided into 3 zones as far as NVBDCP is concerned . Zone 1 (Tribal Area), Zone 2 (Sub Plan), Zone 3 (Plains). The district Malaria administration is

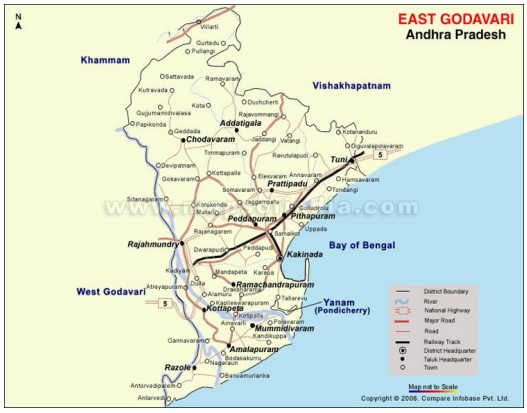
extending its services to a population of 2,32,732 through 10 PHCs in the agency area; a population of 3,79,628 through 6 PHCs in Zone 2 and a population of 33,25,611 through 51 PHCs in Zone 3.

Gambusia fish is being introduced in the water stagnations of the Zone 1 and Zone 2 Areas as a routine process.

Surveillance of Dengue , Chickenguniya and J.E Cases in the district is being undertaken for early detection and prompt control measures to arrest the spread of the diseases. Fogging and Pyrethrum spraying are being undertaken in the villages affected by Chickenguniya and Dengue cases in the District. 45,300 mosquito nets were stated to have been distributed (treated with Deltamethrin) and there is plan to distribute an additional 30,000 mosquito nets to the tribal families in High Malaria incidence villages.

There are twelve blocks in this district with 1,344 villages. There are 346 sub centres in this district while only 300 ANMs are functional. 46 sub centres are without any ANM. There are 180 sanctioned posts of multi purpose workers and only 115 are in place. In 2003, there was a Malaria outbreak although no deaths were recorded. Among migrant labourers, a few cases of Chikungunya were reported. Out of 1,344 villages in the district, only 625 high risk villages were sprayed with DDT. The number of rooms sprayed with DDT is 187,166 while the number of houses which denied spraying is 1,057. 997 houses were found locked during this spray campaign. There are 900 ASHAs in place and are working in tandem with Anganwadi Workers and ANM. It was indicated by the district health administration that there was a shortage of Primaquine 2.5 mg tablets.

A total of 6 villages were covered in this district, details of which are captured below:



Bodluru village is located about 115 km away from the district headquarter & about 25 km away from the nearest PHC. It is one of the remote villages in the PHC. This village has one primary school, Anganwadi Centre, a health centre, and a high school. Drinking water is provided through water tank constructed by SAI BABA Trust, an NGO working specializing in rural development in the District. Blood samples are being collected from fever cases but the results are not seen to be informed to the patients. DDT is sprayed in majority of the houses. Fumigation of neem leaves and herbs is a common practice to dispel mosquitoes. CHW runs FTD and DDC. 80% families reported to have got government distributed bed nets. People practice open defecation. Electricity connection reached the village but power supply is limited to a few hours a day. Garbage is being disposed far from the houses in to a pit to be used as compost later on.

Dirisinapalli village has a population of 381 constituted mainly by Dorai & Koyyall tribes and is surrounded by hills from three sides. A river stream flows from the east, about half a kilometer away. 90% of the population is

composed of scheduled tribes and 10% are from SC category. The main sources of drinking water for the inhabitants are 7 hand pumps. It was noted that insignificant inhabitants of this village use bed nets, although these were distributed under Malaria Control Programme. Majority of the population fumigate neem leaves to drive away mosquitoes. It is noticed that blood samples for diagnosis of malaria were being collected. People are still practicing open defecation with some arrangement for toilets constructed under sanitation campaign. Daily Garbage is put in a pit for composting and use in agriculture. The nearest health centre is 3 km away and the villagers find it easy and useful to approach this sub centre for treatment.

Pallavaram village with 700 households is a tribal village dominated by Dosai tribes (70-80%) and koyyal tribes. In this village, community members have stated to be conscious of the need to store drinking water in covered metal pots. In this village, specific intervention was reported to have been undertaken through malaria campaign to control incidence of malaria. Community Health workers and ANMs are stated to be the main source of awareness generation through group meetings. No Gambusia fish is reported to be put to use. Majority of the people mentioned that they sleep on the floor and that it is difficult to tie the bed nets.

In **Madhurulu** village, about 80% houses are kuccha and the remaining 20% are semi pucca. Three hand pumps are providing drinking water to about 150 families. There is one Anganwadi Centre in the village. Distribution of bed nets was seen to be very limited. A few inhabitants were reported to have been affected by Chikungunya but the outbreak of this disease was not confirmed. It is noticed that mosquitoes breed near the drainage of pits. Houses were sprayed twice last year and all rooms of the houses were reported to have been covered.

In **Sonanapadu** village, which is located 45 kms away from Mandal headquarters, about 80% houses are kuccha, 10% are semi pucca. while 10% are pucca with cement wall and tiles for roofing. There is a primary school and an Anganwadi .. Bed nets are reported to be in use. July- August and November - December months are stated to be mainly the disease season in the village. Hygienic condition of the houses is observed to be good due to mud plastering with cow dung which is done regularly but the garbage management is poor. FTD &DDC are managed by CHW. Blood samples are being collected and deposited at PHC on weekly basis.

In **Vedukudu** village, garbage is seen to be disposed off in the open everywhere. There is a separate building for Anganwadi which is functional. There is no sign board for DDC and FTD. One private doctor with homeopathy clinic is available in the village who provides treatment at low cost. Drinking water is provided through water tank constructed by SAI BABA Trust, an NGO working for provision of rural drinking water & sanitation.

4.4.8 Key observations in Mehabubnagar District

Mehahbubnagar District has a population of 37,34,110 with 4 MCDs and 64 Mandals. The district is bordering Karnataka State in the west and 4 districts i.e Kurnool, Nalgunda, Guntur and Rangareddy from east and south. Though the prevalence of vector borne diseases is not considered to be significant, at the border around 40% of malaria cases are being recorded every year due to

migration of labour to the places where development activities are taking place within the state and outside the state.

Out of 85 primary health centres in the districts 6 PHCs are problematic for Malaria. Out of these 6, three PHCs are under enhanced malaria control programme. Early Detection and Prompt Treatment is being ensured the active surveillance with regular fortnightly visit by Multi Purpose Health Worker (MPH M/F). Under passive surveillance, for detection of reported cases, collection, examination of blood samples and prompt treatment at the civil hospitals, primary health centers and Malaria Clinics were established. Two rounds of spray in the selected areas were stated to have been carried out.

In Mehahbubnagar district, there are no confirmed JE cases recorded for the last 4 years. Likewise, since last 3 years dengue cases were not recorded, although during 2006 seven suspect cases were recorded at Karnool General Hospital in which 2 were confirmed. In case of Chickenguniya, in 2006 few outbreaks were observed in 126 villages of 57 PHCs in the district. Blood samples were collected from the affected villages in which 29 samples were confirmed as Chickenguniya.

Three Filaria units are functioning in the district at Kodangal, Raichur, and Gokafaslabad, each unit covering 20 villages which are highly endemic. During 2006 these 3 units collected 8752 blood samples through night surveys in which 79 micro filaric cases were detected and treated in addition to treatment of 896 old cases.

A total of 6 villages were covered in this district, details of which are captured below:

In **Kunchitalabai** village, there is an Anganwadi Worker and one CHW (M) taking care of DDC & FTD. The population of the village is around 350 with 82 households, dominated by Baika & Sensui tribes. In the focus group discussions, it is noted that people are aware of the symptoms of malaria and the ways in which mosquitoes breed. None of the participants who had suffered fever before, tested blood slide samples for malaria. Few use bed nets and majority of the population fumigate neem leaves, use neem oil and coils to ward off mosquitoes. No drainage facility is available in the village.

In **Negadimailaram** village, blood slide samples are being collected from people who had fever and the positive cases were being treated properly. DDT was sprayed in many of the houses (80%) and Gambusia fish were put in many of the stagnant water bodies. This village is dominated by lambari tribes (65%). In the focus group discussions, it was observed that the community members are aware of the symptoms of malaria. The participants who had suffered fever tested blood slide samples for malaria and were

treated properly. Generally the inhabitants are stated to use bed nets purchased from private sources.

Parsapur village of Korangalgaon Mandal is a mixed-group village with 70% tribal population and 25% general and OBC population & 5% SC population. There are three Anganwadi Workers and one ANM, and CHW-cum-Supervisor and other staff at the Health Sub-Centre. The population of the village is around 2500 with about 500 households in this village. Open defecation is still being practiced with some arrangement for toilets constructed under other government schemes. In this village, electricity supply is restricted to a few hours in the day. One MCH centre is situated at a distance of about 2-3 km and is being run by the Health Department. The participants in the focus group discussions stated that those who suffered fever tested blood slide samples for malaria and were treated properly. Generally, the villagers use bed nets purchased from private sources.

In **Sarlapalli** village, there are 8 hand pumps providing drinking water to about 700 population belonging to madga , Malia, golobu & sensu tribes. Generally proper garbage disposal and cleanliness is being maintained by the residents. The residents dispose their daily garbage in compost pit situated far from their houses. Majority of villagers are found to be aware of mosquitoes and symptoms of malaria but are using only fumigation to drive away mosquitoes. In this village, though located near the main road, no significant intervention has been made to control malaria. Once in a month MPHA (Male) and ANM are stated to visit the village. It was noted that the villagers are willing to contribute 50% of the cost of additional bed nets if provided by the Government for every bed net supplied free of cost.

In **Vankeshvaram** village of Amrabad Mandal, there were reported public announcements and nukkad nataks on malaria. The population of the village is around 3500. There are 750 houses in this village out of which 45% are of pucca type. Most of the community members utilized the services of FTD and know that mosquitoes spread malaria and the disease could be dangerous. Rainy season is stated to be the major season for spread of diseases from mosquitoes. The village is affected with mosquito menace and people are reported with fevers all the time. Blood samples are collected from the fever cases but the results are not generally reported back to the concerned persons. DDT is sprayed in majority of the houses. CHW runs FTD and DDC. 80% families reported to have got government distributed bed nets. People practice open defecation.

Votrapalli village was affected by Chikungunya. The key signs identified by the community members are shivering, continuous headache and joint pain. However, these reported cases were not confirmed Few use bed nets and majority of the population fumigate neem leaves. Though bed nets were distributed in the village, in the focus group discussions, none of the participants were noted to have got government supplied bed nets. It is noticed that none of the community members had given blood samples for diagnosis of malaria. People are still practicing open defecation.

4.4.9 **Key observations in Adilabad District**

The transmission and incidence of malaria in this district is characterized by seasonal fluctuations. The peak transmission was observed after rains. Magnitude of rains, number of rainy days and spells and agricultural pattern are the factors, which determine the breeding of vector, its density and Focus Group Discussions
longevity. During the rains large pools are formed which are the preferred breeding sites of An.culicifacies. After rains, water starts receding and leaves within low running channels which are the most favourable breeding sites for An. fluviatilis. Hence, the transmission continues from July to December by An.culicifacies during monsoon and by An.fluviatilis during post monsoon. The P.falciparum transmission predominates in all the seasons.

Adilabad is among the low prevalent districts for malaria with API <2 and the mosquito species is tolerant to DDT. Adilabad is among the affected districts for lymphatic filariasis and the common causative organism is W.bancrofti. There is a District Malaria Officer (DMO), Assistant Malaria Officer (AMO), six Malaria Inspectors and field staff. In Adilabad district, one Malaria Inspector is incharge of two or more Mandals. There are WHVs & Asha workers in the district serving about 2827 villages. In general, almost for every group of 50-70 families, one Mitanin is positioned. These workers function under the supervision of ANM who are the key health personnel at the PHC & Sub-Centre level. It was reported by DMO that 3.5 lakh fishes have been distributed through Mitanins in all the 14 Blocks of the district. About 13,000 bednets were distributed to BPL families. Gram Panchayats were involved in distribution and selection of beneficiaries. In the district, there are 1013 FTDs and 338 DDCs, each taking care of 500-1000 families. Capacity building for Mitanins was organized and the responsibility for operation of FTDs and DDCs was given to them. There are 15 Lab Technician positions in the district out of which 7 positions are vacant

A total of 4 villages were covered in this district, details of which are captured below:

In village **Ghanpur** of Dhandanpali Mandal, which has a population of around 800 dominated by Gond and lambada tribes, there are mainly wells and a few hand pumps for drinking water. Most of the population is literate but only upto primary level, as a result of which the current practices are not very poor in relation to health and hygiene but still the dry wash technique post defecation prevails in the village. Most houses in the village were stated to have been sprayed with DDT and also given bed nets. Blood samples are collected from the fever cases and only positive cases are being followed up with the report and treatment, due to which other community members seem to remain ignorant of their condition. The community members are noted to go to local private doctors for diagnosis and treatment, partly due to inadequate interaction and communication by PHC health team involved in reaching the Sub-Centre.

In **Ushegaon,** a village of Gond tribe, there is one big pond which is being used for bathing and washing of clothes. In this village, people store drinking water in earthen and metal pots, supplied through water tank. People are aware about mosquitoes and malaria but are using only fumigation using herbs and neem leaves. In this village, (connected with the main road), specific interventions in the form of kerosene oil spray in the ponds, organization of Awareness Camp and Malaria Campaign were undertaken to

control Malaria. There are 350 households and around 1200 inhabitants in this village. 3 years ago, the village was said to be affected by malaria resulting in few deaths. The community is dissatisfied with the health services provided by the health administration.

In **Pochamlodi** village, about 80% houses are kuccha and the remaining 20% are semi pucca. Gond tribe dominate with 90% population. Three hand pumps are providing drinking water to about 150 families. There is one Anganwadi Centre in the village. None of the houses in the village are DDT sprayed. Bed nets in very limited number are available in the village. People fumigate with neem leaves and Kandas to drive away mosquitoes. In this village, a few inhabitants were reported to have been affected by Chikungunya but the disease was not confirmed.

Povagoda is a mixed population village dominated by Gond tribe (65 families) followed by SC (10 families). FTD and DDC sign board are found to be displayed prominently. Strong women groups and SHGs have been observed to be functioning well in the village.

4.5 Rapid Social Assessment – Orissa

4.5.1 Orissa has third largest tribal population (36,804,600) which is 22.1 percent of the total population of the State and 9.66% of the total population of the country. There are 62 tribal communities and 13 Primitive Tribal groups living in 17 districts. Majority of the backward tribal communities are located in the hills and forests of Rayagada, Koraput, Gajapati, Ganjam, Mayurbhanj, Bolangir and Kalahandi districts bordering Andhra Pradesh, Mahashtra, Chhattisgarh, Jharkhand and West Bengal. The tribals remained backward due to historical and geographical reasons.

Vector borne diseases like malaria and filaria have been major causes of mortality and morbidity in the State of Orissa. As per data available mostly the poor and weaker section population, particularly the tribals have suffered most on account of their traditional way of life and isolation. While malaria and filaria could be controlled partly in urban and semi-ubran areas in the tribal dominated blocks, malaria and other vector borne diseases continued to pose severe threats. Besides malaria and filaria, recently in 2006 outbreaks of chikungunnya in Orissa resulted in high degree of morbidity. Young children and pregnant women are the most vulnerable groups. Nearly 24 percent of malaria cases and 30 percent of deaths due to malaria in the country are from Orissa.

The southern and western districts dominated by tribal population are badly affected by malaria. Out of 6240 sub-centres in the State 2799 (45%) sub-centres having a population of 23,506,744 (61%) are with API more than five. Over three fourth (85%) of the cases reported from the State are due to falciparum species, the dangerous variety of malaria parasite.

There is a shortage of staff at the state and district levels which is evident from the date available relating to the sample districts visited by the consultants. The staff postion at the state level is as follows:

Table 13 : Staff Position at the State Level

Category	Sanctioned Strength	In position	Clear Vacancy	% of Vacancy
MO	4215	3424	791	32.75
LT (Mal)	351	298	53	15.09
MPHS (F)	1053	1012	41	3.8
MPHS (M)	1551	839	712	45.9
MPHS (F)	7121	6871	250	3.5

The staff position at the district level is also not satisfactory. In Rayagada district 32 posts of MPHS (M) and 17 posts of MPHSW (M) are lying vacant for some time. In Bauda district 43 posts of MPHW (M) and 760 posts of MPHW(F) are lying vacant. In Mayurbhanj district 28 posts of MPHS, 115 posts of MPHW (M) and 38 posts of MPHW (F) are lying vacant. To cater to the needs of the tribal people in the remote and isolated villages, all vacant posts need to be filled urgently and additional staff at the village level for DDC and FTD levels need to be planned. Out of three sample districts visited by the consultants, only Mayurbhanj has a District Malaria Officer, while the remaining two districts are yet to get a medical officer exclusively for malaria and other vector borne disease. The district health authorities in their Annual Action Plans for the year 2007-08 have projected requirement of additional staff. To meet the shortage of staff and deliver medical facilities for treatment of VBDs the District Medical Officers are trying to associate NGOs for awareness building, training and distribution of bed nets, maintenance of hatcheries, running of some FTDs/DDC Centres etc. The steps taken are encouraging, but utmost caution has to be taken while selecting NGOs for attending health related activities. All assignments should be time bound and payment should be linked with performance.

The following Table gives a comparative status of the districts covered in the SABA study. The districts were selected in consultation with the Director in the Health Directorate looking after Malaria and other Vector Borne Diseases. The selected districts Mayurbhanj, Rayagada and Bauda represent three geographical locations (North, South and Central part of Orissa). Moreover the districts were malaria prone and several cases of death were reported during the last 5 years. One common factor was significant tribal concentration in the three districts.

Table 14 : Comparison of Selected Districts

Items	Rayagada	Bauda	Mayurbhanj
Area in sq km	7,584	3444	10,418
Development blocks	11	3	26
CHCs/PHC	11	3	28
Sector PHC	34	11	74
Sector labs	-	-	-
Sub-centres	235	62	548
No. of villages	2667	-	-
Total population	910665	405161	22,23,456 (2001)
Tribal Population	807600	3,85000	12,58,459
FTDs	858	653	2,871
DDCs	2460	699	NA

Items	Rayagada	Bauda	Mayurbhanj
Malaria clinics	45	4	NA
Anganwadi	1001	417	2996
MLV/ASHA	858	417	NA
Microscopy Centre	41	4	NA
No. of larvivorous fish put in '06	15000	250	2,936
No. of people using bed nets	67517	1,24,383	NA
Sector level Clinic	32	NA	NA

The performance indicators of the selected districts is summarized below:

Table 15: Performance Indicators of the Selected Districts

Items		Rayagada	Bauda	Mayurbhanj
Malaria Positive cases	2004	28428	4128	21044
	2006	28717	2812	16781
PF Case	2004	27552	2678	19128
	2006	27576	2135	15482
SPR	2004	14.28	11.50	5.19
	2006	13.25	7.14	3.61
Malaria Death	2004	12	7	11
	2006	13	13	3

It can be seen from the above table that Rayagada district is not performing well. During 2004 total cases reported was 28482 while the same increased to 28717 during 2006. In Bauda district, malaria cases reduced considerably from 4128 in 2004 to 2812 in 2006. In Mayurbhanj district however there was some improvement in 2006 where total cases reported was 16781 against 21044 during 2004. The Slide Positive Rate (SPR) reduced in all the three districts covered in the study, but the progress was slow in Rayagada district (13.25 against 14.28 in 2004). In Mayurbhanj and Bauda districts however the trend was better 3.61 and 7.14 against 5.19 and 11.50 in 2004. Number of deaths on account of Malaria increased considerably in Bauda district (13 deaths in 2006 against 7 deaths in 2004). In Rayagada district total death reported was marginally higher (13 in 2006 against 12 reported in 2004). In Mayurbhanj district however cases of death due to malaria reduced considerably from 11 in 2004 to only 3 in 2006.

During visit to the selected three districts it was observed that in most of the PHCs, the staff strength was not adequate and number of vacancies existed on account of various factors (including difficult posting in isolated and remote areas). The medical and paramedical staff normally keep their family in native place or district head quarters where better education and medical facilities are available. The following table will give some idea about vacant positive in the three districts, even though the total staff strength was not adequate to meet the challenges.

Table- 16 : Vacant Key Positions in the Identified Districts for Coverage

Name of the post	Rayagada	Bauda	Mayurbhanj
MPHS (M)	32	7	28
LT (Path + Mal)	2	1	1

Name of the post	Rayagada	Bauda	Mayurbhanj
MPHW (M)	17	43	115
MPHW (F)	2	60	38
Sector Farmer	Nil	Nil	-

From the above table, it is seen that large number of key positions are lying vacant. In Mayurbhanj. 115 position of MPHW (M) are lying vacant, followed by 43 posts in Bauda and 17 in Rayagada districts respectively. Similarly against the post of MPHW (F) number of vacant posts in Bauda district was 60, while in Mayurbhanj district it was 38 and in Rayagada district 2 posts were lying vacant. The post of MPHS(M) plays important role in supervision, monitoring of the implementation of curative and preventive measures, but there were significant number of vacant posts (32) in Rayagada district while in Mayurbhanj district number of vacant posts was 28 and in Bauda district the number was 7. Role of laboratory technicians is most vital in detection of the cases but in Rayagada district 2 posts were lying vacant, followed by 1 each in Mayurbhanj and Bauda districts.

Area wise Mayurbhanj district is the biggest district (10, 418 sq km) among the three sample districts (Rayagada, Bauda and Mayurbhanj). Bauda is the smallest district and (3444 sq.kms). In terms of absolute number, Mayurbhanj has 22.23 lakh population followed by Rayagada 9.10 lakhs population and Bauda 4.05 lakh population.

4.5.2 Key Observations of Raigarha District

Rayagada district lies on the southern part of the state boarding Andhra Pradesh. The inhabitants are predominantly tribals and several Primitive Tribal Groups are inhabiting the villages located in inaccessible mountain ranges. The district population is 9,10,665. Communication is not much developed and large number of villages have to be visited by foot. There are two sub-divisions having 8,07,600 tribal population. Total APL families are 87533 while BPL families are 1,11,120. There are 11 PHC/CHC, 34, sector PHCs and 211 sub-centres. Against the requirement of 2636 FTDs only 858 FTDs have been established. About 46 local NGOs have been identified out of which reputed and eligible NGOs will be selected for various activities (motivation, awareness, delivery of services, publicity etc.) and such jobs which can not be handled with the existing staff strength.

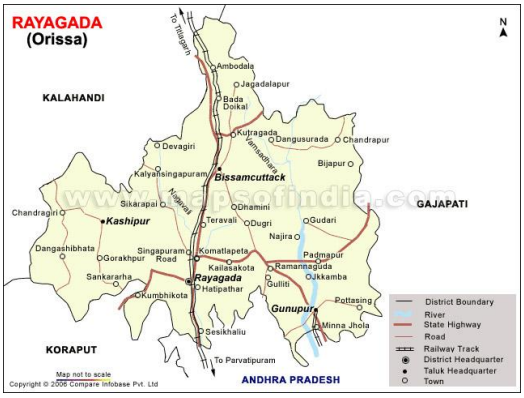
Present staff position is not adequate. For example against sanctioned posts of MPHS (M) more than half of the posts are vacant (sanctioned 48, in position-16). Against sanctioned post of MPHSW(M)-140, only 123 are in position. As per projected requirements, 1809 number of DDCs are to be trained as FTDs and 4 new Microscopy centres are to be set up. In the district plan for 2007-08, it has been proposed that 951 FTDs and some microscopy centres are to be run by NGOs.

The key observations of Rayagada district are as follows:

- Rayagada is the second largest district out of the three selected villages having 7584.7 Sq.Kms area having 9.10 lakh population out of which 8.07 lakh are tribals. There are 11 blocks and all the 11 blocks are tribal blocks. The roads are not properly maintained and except state highway No. 4

and major inter district roads. The village are scattered and the tribal villages are mostly on hills and forests.

- The existing infrastructure relating to health facilities are not adequate for effective implementation of health programmes (including VBD). Total number of MPHS (M) sanctioned is 48 against which only 16 are in position. Total number of MPHW (M) in position is 123 while total sanctioned strength is 140. Total Microscopy centres required is 45 while 41 are functioning.
- To associate NGOs in the implementation of health programmes (including VBDs), nearly 46 local NGOs have been identified. Final selection process is not complete. In the Annual Action Plan for the year 2007-08, it has been proposed to run 951 FTDs with the support of NGOs and the tasks to be undertaken by these agencies are being examined.
- There is no District Malaria Officer, the Assistant Medical Officer is looking after malaria related work.
- There are 5510 SHGs (women) in the district. During interaction with the SHGs in 6 villages it was observed that most of the the SHGs are not functioning properly. Most of the groups have opened bank accounts and with some guidance and skill formation training, can be run efficiently. Loans are being given to members, recovery position is satisfactory but unless those are run professionally the members will not find interest and may discontinue to support.



A total of 6 sample villages were covered in this district, details of which are captured below:

Kinarimoda: The village is surrounded by hills and forests. There are 46 families with little over 240 population. There is one upper primary school, one temporary post office, 3 hand pumps (one out of order) and one well. Doctors, rarely visit the village, although it was reported that recently doctors and a health worker visited the village. The Anganwadi Worker is not able to meet the demand of medicines properly due to shortage. One death was reported due to malaria. One more death was reported due to fever, but the villagers are not aware about the exact cause. There are 2 women SHGs with 23 members. It is noted that about 15% households allowed their rooms for DDT spray. About 6 months ago, spraying operation was undertaken in the village in the day time when most of the villagers were out to attend agricultural activities. Those who were present insisted that cattle sheds should be sprayed and outer walls should not be sprayed since the walls were painted during the festival (Diwali). Anganwadi is located in the village and is responsible for distribution of medicines. More than 70% tribal families are seen to be at BPL level. General literacy rate is 29% while female literacy is reported to be 16%.

Birnarayanpur: The village is on the plains, adjacent to hill slopes. There are 172 households in all with a population of 876. More than 70 persons were reported to have suffered from malaria but no death was recorded. Major economic activities of the villagers are agriculture, wage-labour, animal husbandry and petty business. The Anganwadi Centre is located in the village

and the Anganwadi Worker is able to meet the requirements of the villagers. The ANM and a doctor visit the village once in a month. There are 4 hand pumps and one community centre. More than 80% houses are kutchha, nearly 10% are semi pucca and remaining 10% pucca (brick wall with tin/cement roof). There is one upper primary school and more than 90% children in the school-going age are attending school. The village is connected with metalled road and have street lights. There are 3 women SHGs with 40 members. About 30 families are using bed nets for their children. Few families belonging to general castes are using bed nets purchased from the market. About 40% families are aware about the symptoms of malaria and know that it can be cured with medicine. In case of emergency they visit a local doctor who charges fees between Rs. 20/- to Rs. 40/- depending on income status of the affected person. Spraying of DDT has been done six months ago. Nearly 65% families are at BPL level.

Bhomoda: The village is located between two mountain slopes. There are 152 households with around 700 population. Majority of the families (more than 70%) belong to tribal communities, followed by SCs (12%), OBC (13%) and remaining 5% belong to general category. The literacy status is about 30% with female literacy less than 15%. Majority of the families (more than 80%) are at BPL level and their main occupation is agriculture, wage-labour, and collection of tendu leaves. There are 4 hand pumps and one well. The DDC is located at the Anganwadi Worker's residence. She attends to blood sample collection and distribution of medicines. There are 2 women SHGs. On an average 4-5 cases of malaria are stated to occur each month, but no deaths were reported during the last 5 years. The doctor and Anganwadi Worker visit the village once in a month. About 25% families use bed nets provided by the government at subsidized rates, but mostly use the same for their children and the adult members sleep in the open or inside the room. Nearly 80% households got their dwelling huts sprayed from outside and only 20% allowed spraying of DDT inside the house. It was noted that the tribal community members avoid spraying of DDT inside the houses for fear of contamination food stuffs and pollution of family deities. Some have undertaken spraying themselves while pumping of spray is carried out by the health staff from outside the house. Street lights have been provided in the village. Some households have individual connection. About 6 families have transistors/radios and 2 families own TV. Maximum viewership/listening is confined to music and news in the night.

Gurtuli: The village in located on the hill slopes. There are 140 households with 640 population. Main occupation of the households are agriculture, animal husbandry and wage labour. The literacy rate is 25% while female literary is less than 20%. More than 50% dwelling units are kutchha, 40% are mixed type (semi pucca) and remaining 10% are pucca (brick wall with tin/cement roof). A significant population suffered from malaria, but no case of death was reported during the last 5 years. There is one middle school, one Anganwadi Centre and one health centre. There are two women SHGs (one not functional). There is no proper drainage system and one open drain runs along the village. The tribal community is aware of malaria symptoms. The Anganwadi Worker distributes medicines from the Drug Distribution Centre. The villagers have participated in the awareness camps organised by the health department. Most of the families received bed nets from the government and nearly 60% use bed nets for their children while adult members sleep in the open. The APL families (nearly 20%) expressed their desire to purchase bed nets at subsidized rates. The BPL families observed

that bed nets should be distributed free of cost and according to the size of the family. Attitude towards spraying of DDT inside the house is changing gradually. More than 25% families allowed their rooms to be sprayed (majority having semi-pucca and pucca house). The tribals living in one room tenement with thatched roof at low heights normally are not seen to allow their rooms to be sprayed due to fear of contamination of food stuff, cereals and wrath of family deities who are believed to stay in the rooms.

Parsali: The village is located near the hills and forests. Majority of the villagers belong to tribal communities and are below poverty level. The villagers manage to survive by participating in agricultural activities on the hills, rearing of domestic animals, collection of forest produce and wage-labour. There is one Kanyashram (girls hostel), 2 hand pumps and 2 staff quarters for Government Officials. The Anganwadi Worker lives in the village and distributes medicine. It is a small village with 22 families and a population of 115. None of the villagers are using bed nets, though some of them received bed nets (one for each family). Spraying of DDT has been done in some dwelling units, but most of the dwelling units were locked when spraying was done. The villagers were go out for their economic activities and informed that it would be difficult for them to remain in their houses during spraying operation since they can not afford to lose daily wages. Spraying has not been undertaken for more than 8 months. The Anganwadi Worker is able to discharge her duties, but she has to collect medicines from long distance. Since most of the families belong to Primitive Tribal Community, due to uneconomical agricultural practices, their average yearly income is less than Rs. 4000/-. Literacy rate is less than 15% while female literary is less than 10%.

Kailaspur: The village is located near the hill slopes. There are 45 dwelling units in the main hamlet. Majority of dwelling units are kutchha (mud wall with thatched roof) and about 15 dwelling units are mixed type (semi pucca with mud walls and thatched roof), only 3 dwelling units are pucca (brick wall with tin/cement roof). There is no proper drainage system. There is one primary school. The Anganwadi Worker distributes medicine and takes the blood samples to the laboratory centre. Significant population (56) suffered from malaria. During the last 5 years two persons died due to fever, but the exact cause is not known. There are two hand pumps in working condition. One doctor and health worker visits the village once in a month. The villagers participated in a awareness meeting. Only few (15%) allowed their houses for spraying of DDT. The village has mixed population (tribals scheduled casts, OBC and general). Drainage system is seen to be poor. The villagers are aware about malaria and in case of fever they approach the Anganwadi Worker for blood test and medicines.

4.5.3 Key Observations of Bauda District

In Bauda district there are 3 PHCs and 62 Sub-centres for catering to the needs of 1,139 villages. In Bauda, one Additional Medical Officer is looking after the NVBDs programme. The present staff position at the district level is not adequate. According to information available in the 3 PHCs total deaths reported during 2006 were 22. Infrastructure relating to health facilities available in the district and present staff position indicate that urgent steps are required to be taken for proper implementation of NVBDS.

Table 17 : Present Staff Position

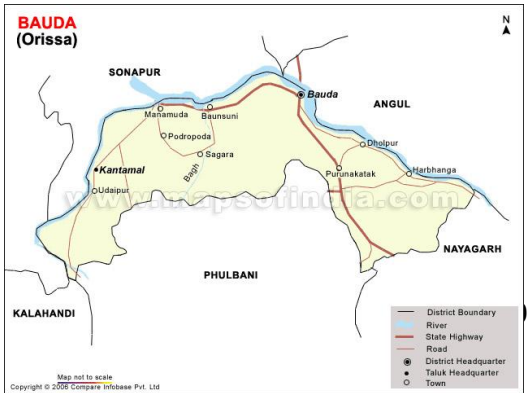
Category	Sanctioned Posts	In Position
MPHS (M)	15	8
L.T.	3	2
Sector Pharmacist	11	4
MPHW(M)	44	42
MPHW (F)	67	60

In the Action Plan for 2007-08 it has been proposed to train 52 DDCs to act as FTDs and set up 7 Microscopy Centres (4 existing). Keeping in view the task to be achieved for control of malaria and other disease under BVBDs programme, it appears that the existing manpower and facilities available in Bauda district is inadequate and weak. The villages are scattered and tribal population is more than 80% in most of the villages. The district remained comparatively less developed in terms of communication. For spraying of DDT in high risk villages (414) only 12 spray pumps were available against requirement of 22 and about 10 spray pumps required to be repaired.

The key observations of Bauda district are as follows:

- The district is the smallest in size out of the three districts selected for the study. It is located at the central part of Orissa, bordering Chhattisgarh State, on the West. Total area of the district in only 3,444 sq.kms with 405 lakh population. There are 3 blocks and all the blocks are tribal blocks having more than 60% tribal population. There are 62 sub centres and 3 PHCs.
- Total deaths reported due to malaria in the year 2004 was 14 while as per data made available 24 cases of death due to malaria was reported in 2006. The blocks affected by malaria was Adeigarh and Aunsuni.
- There are 1,156 revenue villages, while the number of malaria clinics is only 4. Anganwadi workers are attending the job of distribution of medicine and collection of blood samples with little remuneration. Total number of MPW(M) and MPW (F) is 43 and 60 respectively and for them to take care of 1156 villages will not be rational.
- It was reported that 1,24,383 bed nets have been provided, but during the visit to 6 identified villages it was observed that about 60% families have received the nets and in most cases the tribal families were not using the nets properly. Some families were using the nets for their children while the adult members were sleeping in the open.
- In all the 6 villages women SHGs were present (mostly 2 groups in a village) and these groups were not much active.
- The health department has listed 27 local NGOs for considering their involvement in the implementation of VBD Control Programme but tribal block selection is yet to take place and the specific tasks to be handled by individual groups are yet to be identified.

A total of 6 sample villages were covered in this district, details of which are captured below:



Chattrang: The village is located on the mountain slopes. There

are nearly 190 households with a population of around 1000. The village has mixed population (ST-50%, SC-20%, OBC-12%, General – 18%). The village has no proper drainage system and the villagers normally dump the garbage near the house. About 80% houses are kutchha, while 10% are pucca and remaining 10% are of mixed type (thatched roof with pucca walls). The village approach roads are pucca and drinking water facility is partly satisfactory (hand pump/tubewell-3). The village has a DDC and Anganwadi Centre. There are 2 SHGs (run by women) and one youth club. No one died in the village due to Malaria or Vector Borne Diseases. About 30% households use bed nets provided by the government. Doctors do not visit the village and the Anganwadi Worker attends to health needs of the community. Mostly non tribals and BPL families burn dry leaves (including neem) to drive away mosquitoes in the evening.

Madhopur: The village is surrounded by hills and forests. There are 82 households with a population of around 400. About 79% are BPL families, out of which more than 80% are tribals. There is no proper drainage system and villagers dump their garbage near their house. Nearly 75% houses are kutchha houses, followed by 15% mixed types and remaining 10% pucca houses. The approach road is pucca but drinking water facility is not satisfactory (2 hand pumps). There is no FTD/DDC centre but Anganwadi Centre is present. There are 2 SHGs (run by women) with a membership of 22. One youth club is located in the village which is active for the last one year. There was malaria outbreak during 2004-2006 and 5 persons are stated to have died due to the disease. Nearly 60% households were provided with bed nets by the government to the poor families. The community is not prepared to pay for treatment of bed nets. The doctors and ANMs are visiting the village since last two years. The community members have participated in the village meetings attended by government health functionaries. More than 30% people have allowed spraying of DDT inside their house. The attitude of the health staff is reported to have improved after the outbreak of malaria. The villagers are able to diagnose the symptoms of malaria (high fever and shivering) and are aware that it is curable with medicine. About 40% are literates (women literacy 15%) and majority of the households have annual income less than Rs. 6000/-.

Sornapaju: The village is surrounded by forests and hills and is one of the malaria affected villages of Bauda district. About 70% villagers suffered from malaria, but no death was reported. Health department staff provided timely help through distribution of drugs to all affected persons (who tested positive). 95% houses are kutchha, while remaining 5% are mixed type. Sanitation system is poor in the absence of drainage and presence of cattle sheds adjacent to the dwelling units. There is one primary school and 6 hand pumps. There are 2 SHGs (of women) with 20 members. The Anganwadi Worker supplies medicines to the villagers and collects blood samples. Nearly 25% households have received bed nets free of cost but rarely use bed nets. The children are normally allowed to sleep inside the net and elderly members sleep in the room or on veranda. Some tribal households burn cow dung cake, paddy husks and neem leaves to drive away mosquitoes during the night. The villagers presently are aware about the preventive measures – spray of DDT/chemicals, use of medicine and use of bed nets.

Thidikajor: The village is very close to the forest belt. There are 58 households with a total population of 314. Majority of the dwelling units are kutchha (82%) followed by semi-pucca (15%) and pucca (3%). There is no

proper drainage system and due to malaria three 3 persons died during 2004-2006. Nearly 75% families are at BPL level and are not in a position to purchase bed nets. Only 40% households have received bed nets. However, only 25% households use them and mainly for children. The elderly persons sleep in the open. Drinking water facilities are adequate (hand pumps – 6). Anganwadi Worker distributes medicines and collects blood samples. There are 2 women SHGs with 21 members. About 70% population suffered from malaria during the last 2 years. Government health personnel are visiting the village once in a month. There are private doctors/clinics and the villagers have to pay for their services. The villagers are aware of the symptoms of malaria and know that the disease could relapse in case of non-adherence to consumption of proper dosage. They villagers sought medicines (paracetamol) and injections (chloroquine) and expressd their willingness to purchase bed nets with 50-75% subsidy. Majority of villagers use dry leaves and cow-dung cakes to dispel mosquitoes. Some villagers are using mustard and neem oil on the body to avoid mosquito bite.

Rengali: The village is located on the mountain slopes. There are 40 households with 215 population. Little over 80% dwelling huts are kutchha, followed by mixed type (14%) and pucca (5%). BPL families constitute 82% of total families. The village was affected by malaria and two persons are reported to have died due to malaria. Majority of the families belong to BPL category and their main livelihood depends on collection of forest produce, paddy cultivation on hills and wage labour. Approach road is pucca but the village roads are not properly built which leads to stagnation of water. There is one primary school and three 3 hand pumps. Anganwadi Centre is located in the village and the Anganwadi Worker supplies medicines and collects blood samples. Less than 15% families use bed nets provided by the government. Majority of those who do not have bed nets are willing to purchase bed nets at subsidised rates, if not supplied free. They are able to identify the symptoms of malaria after attending medical camps. Earlier spraying of DDT was not frequent but the services improved after deaths were reported. During the last 6 months no spraying has been done in most of the households.

Koradakutha: The village is surrounded by high hills and forests. There are 25 households with a population of 110 (both tribals and non tribals). More than 72% families are poor and depend mainly on collection of forest produce and agricultural activities on hill slopes. The village has been identified as malaria-prone area. Average literacy status is less than 40% and female literacy is about 19%. It is reported that one doctor visits the village once a month. The Anganwadi Worker who distributes medicine visits 2 times in a month. There is no FTD or DDC centre in the village. About 75 percent dwelling huts are kucthha, 22 percent mixed type (brick wall and thatched roof) and remaining 3 percent pucca houses. Drainage System is absent. There are 4 hand pumps in the village. The villagers are now able to recognize the symptoms of malaria (high fever and shivering). They also know it is curable. Nearly 80% houses have been sprayed from outside and only 20% families have allowed their living rooms to be sprayed. When the villagers were explained usefulness of total spray (both outside and inside) to avoid mosquito bites, they agreed to allow indoor spraying next time spraying is taken up in their village. The village has only one SHG with 10 members. Nearly 20% families use bed nets for their children and the elderly persons sleep in the open and cover their body with chadar (bed sheets or used dhoti) and burn neem and dry leaves in the evening to drive away mosquitoes. IEC

material could not be located in the village . Only 2 families own transistor radio.

4.5.4 Key Observations of Mayurbhanja District

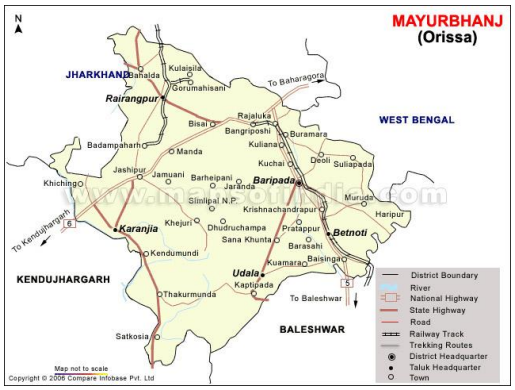
Mayurbhanj district is located in the northern side of the state bordering Jharkhand and West Bengal states. Out of total population of 22,23,456 (2001 census), total tribal population is 12,58,459. Total area of the state is 10,418 sq.kms, which is largest among the three selected districts covered in the study. There are 26 Blocks and majority of blocks are tribal dominated, particularly those blocks bordering Jharkhand and West Bengal states. Keeping in view the size of the district and number of villagers (3748 villages/hamlets) and the medical infrastructure facilities available it can be safely concluded that it would be difficult to do justice to the expectations in terms of outcomes from vector borne disease control programme. For example in the action plan 2007-08 of the district, it has been envisaged that requirement of Anganwadi workers will be 4,363 while only 2,871 centres have been established. There is a need for 74 microscopic centres while 63 centres were established and only 36 centres are functioning.

Data provided by the office of District Malaria Officer indicates that against the sanctioned post of 97 MPHS (M), only 28 are in position. Similarly against the post of 264 MPHW(M), only 149 are in position and against the post of MPHW(F), 600 are in position while 638 posts have been sanctioned. Unless the vacant posts are filled urgently and additional posts are sanctioned keeping in view the special needs of the tribal and backward areas, no programme can be successfully implemented. In Mayurbhanj districts 8 villages were identified for SABA study keeping in view the backwardness of the area, tribal concentration and prevalence of malaria cases.

The key observations of Mayurbhanj district are as follows:

- During the lat 5 years, cases of death due to malaria reduced from 20 (2001) to less than 10 in 2006.
- Indoor Residual Spray (IRS) done in 2005-2006 in 1,97,720 houses.
- Community bed nets distributed – 1,06,645 (free of cost), 71,368 (on payment).
- In most of the villages on an average 2 women SHGs are in existence but majority the SHGs are not functioning properly due to lack of proper guidance and skill. The SHGs can be utilized for motivation of the women members for creating awareness among the women for use of bed nets, spraying of rooms with DDT and reporting cases of fever to the Anganwadi.
- Majority of the villagers are aware about symptoms of malaria, but blood test reports are delayed and supply of medicines is not adequate.
- Listing of local NGOs have been done and selection of NGOs for various activities like distribution of bed nets, running of DDCs, mapping of breeding sites, motivation and awareness camps, training of health workers etc. are in progress.
- Out of three selected districts, Mayurbhanj is the only district which has an independent District Malaria Officer.

A total of 8 sample villages were covered in this district, details of which are captured below:



Chuapani: The village is located on the hill slopes adjacent to the forest belt. The nearest metal road is about a distance of 10-12 kms. There is one Anganwadi Centre, one primary school and 5 hand pumps in the village. The Anganwadi Worker is meeting the needs of the villagers but due to shortage of medicines is not able to meet the demands effectively. Health department has provided bed nets to nearly 60% families, but majority of them are not using them on a regular basis. Only the children are being allowed to sleep in the bed nets and the adult members sleep outside. Majority of the people belong to tribal community. The villagers though mostly non-literates (35% literacy), are aware about the symptoms of malaria but not in a position to protect themselves mainly due to poverty. They have to depend on the government for medicines and bed nets. Spraying of DDT in all the dwelling units has not been done since most of the dwelling units remained locked during day time, when the health staff visit their village.

Balidiha: The village is located near the hills. There are 135 households with a population of 720. Majority of the dwelling units (80%) are kutchha and remaining 20% semi pucca and pucca. Nearly 45% are literates and female literary rate is less than 30%. Majority of the tribal community (70%) depend on agriculture and animal husbandry. About 20% people depend on wage labour and collection of forest produce. Some families are engaged in petty business and 5 families are dependant on employment in private and government sector. The village population suffered from malaria, but no death was reported. The Anganwadi Worker is not able to meet the demands of the people. For the last one year, the health staff from the local PHC is visiting the village once a month. The villagers are allowing DDT spray on the outer walls mainly and few household have allowed DDT spray inside the living room. The people are aware about the effects of malaria since the victims lost many man days labour due to their inability to go out for agriculture and wage related activities.

Tadiki: The village is surrounded by mountains. There are 82 households with a population of 470. More than 70% families depend on forest produce, followed by 20% agriculture and animal husbandry and remaining 5% petty business and agriculture. More than 78% are poor and are at BPL level. Nearly 40% people are literates while female literacy is less than 20%. More than 70% houses are kutchha, followed by 25% semi kutchha (brick wall with thatched roof) and 5% pucca houses. There is one Anganwadi and the Anganwadi Worker collects blood sample and distributes medicines (not adequate). One doctor visits the village once or twice in a month. The FTD centre is located near the village. The villagers have not been provided with bed nets. There is one primary school and 4 hand pumps. The stock of medicines is reported to be not adequate. More than 30 people suffered from high fever during the last 2-3 years, but none of them died due to malaria. Health Department has provided bed nets to more than 80% families @ one net per family, which is not adequate for the families having 4-5 members.

Normally children are allowed to sleep inside the net and elderly persons sleep in the open. When explained the need for use of bed nets for all the members, they expressed their willingness to purchase bed nets at subsidised rates. However, nearly 10 families who are very poor and depend only on sale of wood collection from the adjacent hills expressed their inability to purchase the same. Majority of the households belong to tribal communities. The health worker and the doctor visit the village once a month. For the last 6 months no spraying has been done. Awareness programmes initiated by the Government has reached the village in a limited way. Nearly 50% people are at BPL level and literary percentage is over 45%, while female literary is less than 30%.

Bhandan: The village is located near the hills. There are 82 household with 750 population. Nearly 60% families belong to tribal communities and the rest belong to scheduled castes, OBCs and general category. Main livelihood of the people depends on agriculture (50%), followed by both agriculture and animal husbandry (30%), agriculture labour and animal husbandry (10%), and wage labour (10%). The BPL families (50%) have been provided bed nets (only one net per family) and about 10% families have purchased bed nets from open market. Several families suffered from malaria and two persons are reported to have died on account of the disease. There are 3 hand pumps, one well and one pond in the village. Villagers are getting medicine from the Anganwadi Centre located in the village. For more than one year DDT spray has not been done. Relapse of malaria on account of improper comsumption of prescribed dosage was reported. During the last 5 years two persons died in the village due to malaria (one was nine year old). Some APL families have purchased bed nets and are using the same. More than 50% families have allowed DDT spray to be done inside the house. The villagers are aware about the symptoms of malaria and are visiting PHC and DDC centres when required. Few (less than 5%) are visiting local doctors for treatment, but when not in a position to continue visits to local doctors due to shortage of money, they start visiting the PHC.

Purunapani: The village is located on the hill slopes bordering Chhattisgarh State. There is an old mining site, which has become breeding ground of mosquitoes due to storage of water and accumulation of garbage and dry leaves. There is one Anganwadi Centre and the Anganwadi Worker attends to the needs of villagers, collects blood samples and distributes medicines (the supply was reported to be inadequate). The health staff rarely visits the village and the doctor incharge of local PHC, who joined recently is yet to visit the village. For some years there was no regular posting and the junior staff used to attend the patients. The village has 72 households with 350 population, out of which 150 people suffered from malaria. However, no death was reported on account of malaria. More than 85% dwelling units are kutchha, and 12% are mixed type (brick wall with mud plaster and thatched roof). About 65% BPL families received bed nets from the health department. The BPL families had to pay Rs. 12.50 per net while the APL families had to pay @ Rs 25 per net. Earlier, the rate was Rs. 25/- for BPL families and Rs. 40/- for APL families. Nearly 85% huts were sprayed with DDT. About 25% families allowed their living rooms to be sprayed while remaining 75% allowed DDT spray on the outer walls and in cattle sheds. There are 6 hand pumps. The households are engaged in mining activities, followed by agriculture and animal husbandry. There are two SHGs with 25 members. More than 80% population belong to tribal community, and most of them are mobile and

participate in mining activities. They expressed that blood test reports are delayed and supply of chloroquine and paracetamol is not adequate.

Chouradi: The village is surrounded by forest and hills. There are 125 households with a population of 640. 90% dwelling units are kutchha. There is one primary school, 4 hand pumps and one Anganwadi Centre. There are 3 women SHGs with 40 members. Considerable number of people suffered from high fever and two deaths were reported due to malaria. Literacy rate of the village is around 30% and the female literary is around 20%. The Anganwadi Worker is attending to the needs of the villagers, taking blood samples, and distributing medicines. There is shortage of medicine, particularly paracetamol. Nearly 30% families are using bed nets supplied by Govt. at subsided rates. After prolonged interaction, the consultants could convince the villagers about the importance of bed nets, because even one member in a family gets affected, malaria risk will continue for all the family members. They were told that purchase of bed nets will be one time investment. They are using mosquito nets for more than one year, but never got their nets medically treated. Majority of them (70%) allowed spraying on the outer walls only and some asked for spraying in the cattle sheds. Since only three households are owning transistor radio majority of them have no idea about malaria campaign on Radio. They don't read newspaper, but have seen one poster related to malaria, pasted at the Anganwadi Centre.

Hatikhot: The village is surrounded by forest and in close proximity there is a local stream. Majority of the families belong to tribal communities (nearly 75%). There are total 139 families with a population of 645. The villagers primary occupation revolve around sale of bamboo and bamboo products (baskets, mats, etc). About 25% people are literates, while female literary is less than 12%. Though several people suffered from Malaria no one died during the last 5 years. There is no proper drainage system in the village. About 50% families received bed nets from Health Department at subsidised rates (@25/-per net for BPL families and Rs. 40/- per net for APL familes). During the last one year the rates have been reduced to Rs. 12.50% per net for BPL families and Rs. 25/- per net for APL families. There are 3 hand pumps, one well and one pond in the village. Anganwadi is located at the middle of the village and the Anganwadi Worker is collecting blood samples and distributing medicines. More than 75% families are at BPL level. It was observed that several poor families have not been recorded in the list of BPL, while some economically sound families were getting the advantage of BPL category. The tribals use bed nets rarely while the non-tribals use them for their children. Both tribals and non-tribals expressed their willingness to purchase additional bed nets for all family members, when they were convinced (after interaction with the consultants), that such investments will prove to be effective in the long run.

Kochhiaghati: The village is located on the plains adjacent to the hills. There is one canal near the village. An Anganwadi Centre, one DDC centre and one primary school are located in the village. Several persons got affected by malaria during the last four years, but no death was reported. There are 2 SHGs (women) with 23 members. Membership fees vary between Rs. 10-Rs. 30/- but interest rate is 2% per month. Most of the families received bed nets, but only few use the same. Less than 20% households allowed spray of DDT inside their house and remaining 80% allowed it on the outer walls and in the cattle sheds. ANM and health supervisor visit once in a month. Total member of household in the village is 92 and total population is 452. Major occupation

of the villagers includes collection of forest produces, agriculture wage labour and petty business. There are three hand pumps. According to the villagers, the government is trying to check malaria, creating awareness through an NGO. The villagers are using mustard oil and neem oil on their body to prevent mosquito bites. About 2% households have transistor radio. They mainly listen to music, news and songs during the evening. The literacy rate is less than 35% while female literary is less than 20%.

4.5.5 **Stakeholder Analysis**

Stakeholders are people or organizations who either (a) stand to be affected by the project or (b) could 'make or break' the project's success. They may be winners or losers, included or excluded from decision-making, users of results, participants in the process. Stakeholder analysis is the identification of a project's key stakeholders, an assessment of their interests in the project and the ways in which these interests may affect a project. The reason for doing a stakeholder analysis is to help identify:

- Which individuals or organizations to include in your coalition (although its composition may evolve during project design and implementation)
- What roles they should play and at which stage
- Who to build and nurture relationships with
- Who to inform and consult about the project

The following matrix prioritizing key stakeholders will be useful in the project design as well as a monitoring tool during implementation. These stakeholders are the most important to consider – and indeed involve – in project design and are identified based on the following questions:

- Who stands to lose or gain significantly from the project?
- Whose actions could potentially affect the project's success?

Each of the key stakeholders are then positioned at the appropriate point between the axes. 'Importance', along the x axis, means the degree to which a stakeholder stands to lose or gain from the project. 'Influence', along the y axis, refers to the relative ability of a stakeholder to affect project success.

DEGREE OF INFLUENCE

High **Low**

Box A Stakeholders who stand to lose or gain significantly from the project and whose actions can affect the project's ability to meet its objectives. The project needs to ensure that their interests are fully represented in the coalition. Overall impact of the project will require good relationships to be developed with these stakeholders. • Directorate of Vector Brone Disease Control Programme • National Rural Health Mission • World Bank • State Programme Offices • NVDCP Societies (State/District) • Line Departments (Water Resources, Tribal Welfare, Irrigation, Forests, Agriculture, Fisheries) and PRIs	Box B Stakeholders who stand to lose or gain significantly from the project but whose actions cannot affect the project's ability to meet its objectives. The project needs to ensure that their interests are fully represented in the coalition. • Individual Tribal Community Members • Individual Tribal Women and Children
Box C Stake holders whose actions can affect the project's ability to meet its objectives but who do not stand to lose or gain much from the project. They may be a source of risk: and will need to explore means of monitoring and managing that risk. (at Block and District levels). • Non Governmental Organisations (at Village, Block and District Levels) • Community Based Organisations(SHGs, Village Health & Sanitation Committees at Village level, Faith Based Organisations, Tribal Councils) • Private Medical Practitioners • ASHA Workers, ANM/AWW,MLV • PHCs/Sub-Centres • FTDs & DDCs • Malaria Clinics • Traditional Health Practitioners • Schools • Tribal Leaders & Social Activists	Box D Stakeholders who do not stand to lose or gain much from the project and whose actions cannot affect the project's ability to meet its objectives. They may require limited monitoring or informing of progress but are of low priority. They are unlikely to be the subject of project activities or involved in project management. • Local Elected Representatives

DEGREE OF IMPORTANCE

- Those positioned in Box D are not key stakeholders and can effectively be ignored as a group in project design and implementation.
- Those in Box A are the most important stakeholders and their interests should be represented on the coalition. Likewise, it should be ensured that the interests of the strongest stakeholders in Box B are represented on the coalition.
- It is important to build and nurture relationships with the most influential stakeholders in Box C, to 'keep them on board'.

4.6 Legal Framework Applicable to Indigenous Peoples

The Fifth and Sixth Schedules of the Indian Constitution provide protection to tribal populations on account of their disadvantages. The Fifth Schedule designates 'Scheduled Areas' in large parts of central India in which the interests of the 'Scheduled Tribes' are to be protected. The" scheduled" or "agency" areas have more than 50 percent tribal population. The Sixth Schedule applies to the administration of the states of Assam, Meghalaya, Tripura and Mizoram in the North-east. This schedule provides for the creation of autonomous districts, and autonomous regions within districts as there are different Scheduled Tribes within the districts. The broad strategy that evolved from the constitutional mandates was the adoption of the Tribal Sub plan since the Fifth Five Year Plan of the Government of India and the Integrated Tribal Development Approach, adopted and implemented with some modifications by subsequent government programmes. Articles 46 and 47 of the Constitution of India provide a framework for tribal policy. Article 46, for example, provides the following directive: "The State shall promote with special care the educational and economic interests of the weaker sections of the people, and in particular, of the Scheduled Castes and Scheduled Tribes, and shall protect them from social injustice and all forms of exploitation". Article 47 states that it is the duty of the State to raise the level of nutrition and the standard of living of the people, as well as to improve public health. An important objective of the National Health Policy, 2002 is the overriding importance to be given to ensuring a more equitable access to health services across the social and geographical expanse of the country and ensure that the access to, and benefits from, the public health system is ensured for tribals along with women, children and other socially disadvantaged sections of society. In response to these Constitutional provisions, the health sector has generally treated tribal areas as requiring higher health facility: population norms and are provided service accordingly.

A National Commission for Scheduled Caste and Scheduled Tribes has been set to investigate, monitor and evaluate all matters relating to the Constitutional safeguards provided for the Scheduled Castes and the Scheduled Tribes (Article 338).

4.7 Regulatory Aspects for Introduction of Insecticides into the National Programme (NVBDCP)

Under the National Vector Borne Disease Control Programme insecticides used are based on certain epidemiological and entomological criteria. The programme uses insecticides for indoor residual spray, space spray and treatment of mosquito nets. Larvicides are also used for urban malaria, filaria and other vector borne diseases control. As per the Insecticides Act, only those insecticides are to be used in the country, which have the approval of

the Central Insecticide Board (CIB). The trials are conducted by various research institutions to determine the safety, efficacy and cost-effectiveness of chemical larvicides and adulticides before introduction into the programme. Multicentric trials through common protocols are encouraged. Once the results of the trial become available and indicate the potential use of particular insecticide(s) under the programme, these results are also discussed in a sub-committee of technical experts. Thereafter the findings of the trials and recommendations of the committee are deliberated in the Technical Advisory Committee (TAC), headed by the Director General of Health Services, Ministry of Health and Family Welfare, Government of India. Based on the details of the trial, national and international data available in respect of the product, approval of CIB through a valid registration is sought by the manufacturers. Before procurement of the products the specifications are approved by a Technical Committee headed by the Additional Director General, Directorate General of Health Services, Government of India. The TAC makes appropriate decision. Such TAC decisions are then taken up by the programme after the approval of the Ministry of Health and Family Welfare, Government of India for application and appropriate policy decision. The Prevention of Food Adulteration Act (PFA Act) deals specifically with the adulteration in food articles, with the stipulation of norms of minimal residual presence of pesticides in food. The Manufacture, Storage and Import of Hazardous chemical Rules, 1989 (amended in 2000) applies to the manufacture and use of DDT. The Hazardous Waste (Management and Handling) Rules (1989) is applicable for the disposal of unused insecticides and empty containers.

4.8 Review of existing structures and processes of health care services in the district and the integration of vector borne diseases control programme in the context of tribal communities

The NVBDCP is integrated within the ambit of National Rural Health Mission. The National Rural Health Mission (2005-12) seeks to provide effective health care to rural population throughout the country with special focus on 18 States, which have weak public health indicators and/or weak infrastructure. The goal of the NRHM is to improve the availability of and access to health care to people, especially for those residing in rural areas, the poor, women and children. The NRHM Action Plan refers to strengthening of public health system for efficient service delivery particularly at village and primary levels, to the rural disadvantaged groups including women and children by ensuring equitable access to quality health care services, optimization of health manpower, decentralization of management of health programmes, taking full advantage of local health traditions as well as community participation and ownership, promotion of healthy behaviour and creation of demand for quality services. The NRHM also aims at fostering public-private partnership and inter-sectoral convergence, augmenting community empowerment. The Mission is basically a strategy for integrating ongoing vertical health programmes and sharing collateral benefits for collective improvement.

The objectives of NRHM are as follows:

- It aims to undertake architectural corrections of health systems to enable it to effectively handle increased allocations and promote policies that strengthen public health management and service delivery in the country.

- Provision of an accredited female health activist and preparation of village health plans through a local team headed by Health and sanitation Committee of the Panchayat.
- Strengthening the rural hospital for effective curative care and made measurable and accountable to the community through Indian Public Health Standards
- Convergence of all vertical programmes at the district level through a single District Health Society
- It aims at effective integration of health concerns with determinants of health like sanitation and hygiene, nutrition, safe drinking water through a district plan for health
- It seeks to improve access of rural people especially poor women and children to equitable, affordable accountable and effective primary health care

The policy provides for development of village level plans by involving the local population as well as integration and convergence of the different vertical programmes at the district level. The focus is on the 18 states that have weak outcomes and infrastructure and therefore it is expected that the concerns regarding requirements of programmes for prevention of VBDs among tribals would be addressed. The service provision and ASHA at each village provides an opportunity for increased access.

4.9 Baseline Information on the Demographic & Social Characteristics of the Indigenous Peoples' Communities

The Area profiles of the Districts covered in Madhya Pradesh, Chhattisgarh, Andhra Pradesh and Orissa are attached at Annexures 2, 3, 4 & 5 resepectively, which provide district-wise data (gender disaggregated as applicable) on the following:

- Number of households, household size, proportion of urban population
- Population (Total, Rural and Urban)
- Population (0-6)
- SC and ST population
- Proportion of SC and ST population
- Sex ratio (females per 1000 males), sex ration (0-6), sex ratio (SC and ST)
- Number of literates and illiterates, literacy rate and illiteracy rate
- Total workers, main workers, marginal workers, non-workers
- Cultivators, agricultural labourers, workers in household industries, other workers
- Work participation rate, proportion of main workers, marginal workers, proportion of non-workers
- Proportion of cultivators to total workers, agricultural labourers to total workers, workers in household industries to total workers, other workers to total workers

4.10 Social and Physical Mapping of sample villages including human settlements, health care and other development facilities, "host reservoirs" and animal habitation

4.10.1 **General Infrastructure in Sample Villages of Madhya Pradesh:** The following provides a summary of the general infrastructure in sample villages of Madhya Pradesh covered as part of the study:

Table 18: General Infrastructure in Sample Villages of Madhya Pradesh

District	Village		Pucca Road	Primary School	PCO/Tel	Pvt Clinic /Nursing Home	Any Vehicle	Ayurved/ Homeo	Hand Pump /Tube well	Taps or Other Sources
		yes	80%	80%	60%	10%	60%	0%	80%	20%
Dhar	10	no	20%	20%	40%	90%	40%	100%	20%	80%
Jhabua		yes	83%	100%	50%	17%	67%	0%	100%	50%
	6	no	17%	0%	50%	83%	33%	100%	0%	50%
		yes	67%	100%	67%	33%	67%	0%	67%	33%
Betul	4	no	33%	0%	33%	67%	33%	67%	33%	67%

4.10.2 **Animal Health Facilities and Other Social Welfare and Education Facilities in Sample Villages of Madhya Pradesh:** The following provides a summary of the animal health care facilities and other social welfare and education facilities in sample villages of Madhya Pradesh covered as part of the study:

Table 19: Animal Health Facilities and Other Social Welfare and Education Facilities in Sample Villages of Madhya Pradesh

District	Villages		Veterinary hospital	Veterinary Dispensary	Library	Mahila Mandal	Youth Mandal	SHGs	Temple	Secondary School	Mosque /church	Coop. Societies
		Yes	10%	10%	10%	20%	0%	40%	80%	20%	0%	0%
Dhar	10	No	90%	90%	90%	80%	100%	60%	20%	80%	100%	100%
Jhabua		Yes	0%	33%	17%	33%	17%	67%	83%	17%	0%	0%
	6	No	100%	67%	83%	67%	83%	33%	17%	83%	0%	100%
		Yes	0%	0%	0%	75%	25%	75%	100%	75%	0%	50%
Betul	4	No	100%	100%	100%	25%	25%	25%	0%	25%	100%	25%

4.10.3 **Health Care Facilities in Sample Villages of Madhya Pradesh:** The following provides a summary of the health care facilities in sample villages of Madhya Pradesh covered as part of the study:

Table 20: Health Care Facilities in Sample Villages of Madhya Pradesh

District.	Villages		Hospital	PHC	Health Sub-Centre	Dispensary	Ayurved dispensary	Pvt Health Institution	Pvt. Doctor	DDC	FTD	Angan-wadi
Dhar	10	Yes	0%	0%	60%	0%	0%	0%	20%	10%	80%	90%
		No	100%	100%	40%	100%	100%	100%	80%	90%	20%	10%
Betul	6		33%	0%	100%	33%	0%	0%	67%	100%		
			67%	100%	0%	67%	0%	100%	33%	0%		
Jhabua	4	Yes	0%	17%	83%	0%	0%	0%	17%	100%	100%	100%
		No	100%	83%	17%	100%	100%	100%	83%	0%	0%	0%

4.10.4 **General Infrastructure in Sample Villages of Chhattisgarh:** The following provides a summary of the general infrastructure in sample villages of Chhattisgarh covered as part of the study:

Table 21: General Infrastructure in Sample Villages of Chhattisgarh

District	Villages		Pucca Road	Primary School	PCO/Tel	Pvt Clinic /Nursing Home	Any Vehicle	Ayurved/ Homeo	Hand Pump /Tube well	Taps or Other Sources
Raipur	4	**Yes**	100%	100%	50%	50%	75%	25%	75%	50%
		No	0%	0%	50%	50%	25%	75%	25%	50%
Kanker	7	**Yes**	100%	100%	29%	43%	43%	29%	100%	57%
		No	0%	0%	71%	57%	57%	71%	0%	43%
Durg	5	**Yes**	80%	100%	80%	80%	60%	60%	100%	80%
		No	20%	0%	20%	20%	40%	40%	0%	20%
Ranjnandgaon	4	**Yes**	75%	100%	75%	50%	75%	50%	100%	100%
		No	25%	0%	25%	50%	25%	50%	0%	0%

4.10.5 **Health Care Facilities in Sample Villages of Chhattisgarh:** The following provides a summary of the health care facilities in sample villages of Chhattisgarh covered as part of the study:

Table 22: Health Care Facilities in Sample Villages of Chhattisgarh

District	Villages		Hospital	PHC	Health Sub-Centre	Dispensary	Ayurved dispensary	Pvt. Health Institution	Pvt. Doctor	DDC	FTD	Anganwadi
Raipur	4	**yes**	0%	0%	75%	0%	0%	0%	25%	100%	75%	100%
		no	100%	100%	25%	100%	100%	100%	75%	0%	25%	0%
Kanker	7	**yes**	0%	0%	86%	0%	29%	0%	57%	86%	86%	100%
		no	100%	100%	14%	100%	71%	100%	43%	14%	14%	0%
Durg	5	**yes**	0%	40%	100%	20%	60%	0%	80%	100%	100%	100%
		no	100%	60%	0%	80%	40%	100%	20%	0%	0%	0%
Ranjnandgaon	4	**yes**	0%	25%	75%	25%	25%	25%	50%	75%	75%	100%
		no	100%	75%	25%	75%	75%	75%	50%	25%	25%	0%

4.10.6 Animal Health Facilities and Other Social Welfare and Education Facilities in Sample Villages of Chhattisgarh:

The following provides a summary of the animal health facilities and other social welfare and education facilities in sample villages of Chhattisgarh covered as part of the study:

Table 23: Animal Health Facilities and Other Social Welfare and Education Facilities in Sample Villages of Chhattisgarh

District	Nos. Village	District	Veterniary hospital	Veterinary Dispensary	Library	Mahila Mandal	Youth Mandal	SHGs	Temple	Secondary School	Mosque/church	Cooperative Societies	Others
Raipur	4	**yes**	50%	0%	0%	100%	25%	0%	100%	75%	0%	50%	50%
		no	50%	100%	100%	0%	75%	100%	0%	25%	100%	50%	50%
Kanker	7	**yes**	14%	0%	0%	43%	43%	100%	71%	29%	0%	29%	0%
		no	86%	100%	100%	57%	57%	0%	29%	71%	100%	71%	100%
Durg	5	**yes**	40%	40%	40%	80%	80%	100%	100%	60%	60%	60%	0%
		no	60%	60%	60%	20%	20%	0%	0%	40%	40%	40%	100%
Ranjnandgaon	4	**yes**	50%	25%	25%	50%	25%	75%	100%	50%	0%	25%	75%
		no	50%	75%	75%	50%	75%	25%	0%	50%	100%	75%	25%

4.10.7 **General Infrastructure in Sample Villages of Andhra Pradesh:** The following provides a summary of the general infrastructure in sample villages of Andhra Pradesh covered as part of the study:

Table 24: General Infrastructure in Sample Villages of Andhra Pradesh

District	Villages		Pucca Road (in %)	Primary School (in %)	PCO/Tel (in %)	Pvt Clinic /Nursing Home (in %)	Any Vehicle (in %)	Ayurved/ Homeo (in %)	Hand Pump /Tube well (in %)	Taps or Other Sources (in %)
Adilabad	4	**Yes**	50	100	0	0	0	25	50	50
		No	50	0	100	100	100	75	50	50
East Godavari	6	**Yes**	83	100	33	0	50	17	100	50
		No	17	0	67	100	50	83	0	50
Mahaboobnagar	6	**Yes**	100	100	67	0	33	0	100	67
		No	0	0	33	100	67	100	0	33
Vishakapatanam	4	**Yes**	75	100	0	0	25	0	75	0
		No	25	0	100	100	75	100	25	100

4.10.8 **Health Care Facilities in Sample Villages of Andhra Pradesh:** The following provides a summary of the health care facilities in sample villages of Andhra Pradesh covered as part of the study:

Table 25: Health Care Facilities in Sample Villages of Andhra Pradesh

District	Villages		Hospital (in %)	PHC (in %)	Health Sub-Centre (in %)	Dispensary (in %)	Ayurved dispensary (in %)	Pvt. Health Institution (in %)	Pvt. Doctor (in %)	DDC (in %)	FTD (in %)	Anganwadi (in %)
Adilabad	4	**Yes**	0	0	0	25	0	0	25	25	25	100
		No	100	100	100	75	100	100	75	75	75	0
East Godavari	6	**Yes**	0	17	17	17	0	0	0	67	17	83
		No	100	83	83	83	0	0	0	33	83	17
Mahaboobnagar	6	**Yes**	17	17	50	0	0	17	0	67	50	0
		No	83	83	50	100	100	83	100	33	33	100
Vishakapatanam	4	**Yes**	0	0	0	0	0	0	0	50	50	100
		No	100	100	100	100	100	100	100	50	50	0

4.10.9 **Animal Health Facilities and Other Social Welfare and Education Facilities in Sample Villages of Andhra Pradesh:**

The following provides a summary of the animal health facilities and other social welfare and education facilities in sample villages of Andhra Pradesh covered as part of the study:

Table 26: Animal Health Facilities and Other Social Welfare and Education Facilities in Sample Villages of Andhra Pradesh

District	Nos. Village	District	Vetinary hospital (In %)	Vetinary Dispensary (In %)	Library (In %)	Mahila Mandal (In %)	Youth Mandal (In %)	SHGs (In %)	Temple (In %)	Secondary School (In %)	Mosque/church (In %)	Coope Soci (In
Adilabad	4	**Yes**	0	0	0	75	25	100	100	0	25	
		No	100	100	100	25	75	0	0	100	75	
East Godavari	6	**Yes**	0	0	0	17	0	100	67	17	67	
		No	100	100	100	83	100	0	33	67	33	
Mahaboobnagar	6	**Yes**	33	33	17	67	33	100	100	17	33	
		No	67	67	83	33	67	0	0	83	67	
Vishakapatanam	4	**Yes**	0	0	0	25	0	75	50	0	50	
		No	100	100	100	75	100	25	50	100	50	

4.10.10 **General Infrastructure in Sample Villages of Orissa:** The following provides a summary of the general infrastructure in sample villages of Andhra Pradesh covered as part of the study:

Table 27: General Infrastructure in Sample Villages of Orissa

District	Villages		Pucca Road (in %)	Primary School (in %)	PCO/Tel (in %)	Pvt Clinic /Nursing Home (in %)	Any Vehicle (in %)	Ayurved/ Homeo (in %)	Hand Pump /Tube well (in %)	Taps or Other Sources (in %)
Bauda	6	**Yes**	33	100	0	0	0	33	100	0
		No	33	0	100	100	100	67	0	100
Mayurbhanj	8	**Yes**	63	100	0	0	0	0	100	13
		No	50	0	100	100	100	100	0	117
Rayagada	6	**Yes**	67	67	17	17	17	0	83	0
		No	33	33	83	83	67	100	17	100

4.10.11 **Health Care Facilities in Sample Villages of Orissa:** The following provides a summary of the health care facilities in sample villages of Andhra Pradesh covered as part of the study:

Table 28: Health Care Facilities in Sample Villages of Orissa

District	Nos. Village		Hospital (In %)	PHC (In %)	Health Sub-Centre (In %)	Dispensary (In %)	Ayurved dispensary (In %)	Pvt. Health Institution (In %)	Pvt. Doctor (In %)	DDC (In %)	FTD (In %)	Anganwadi (In %)
Bauda	6	**Yes**	0	0	0	0	0	0	17	50	50	83
		No	100	100	100	100	100	100	83	50	50	17
Mayurbhanj	8	**Yes**	0	0	25	0	13	0	13	38	63	88
		No	100	100	75	100	88	100	88	63	38	13
Rayagada	6	**Yes**	0	0	17	0	0	0	17	67	33	100
		No	100	100	83	100	100	100	83	33	67	0

4.10.12 **Animal Health Facilities and Other Social Welfare and Education Facilities in Sample Villages of Orissa:**

The following provides a summary of the animal health facilities and other social welfare and education facilities in sample villages of Andhra Pradesh covered as part of the study:

Table 29: Animal Health Facilities and Other Social Welfare and Education Facilities in Sample Villages of Orissa

District	Nos. Village	District	Vetinary hospital (In %)	Vetinary Dispensary (In %)	Library (In %)	Mahila Mandal (In %)	Youth Mandal (In %)	SHGs (In %)	Temple (In %)	Secondary School (In %)	Mosque/church (In %)	Cooperative Societies (In %)	Others (In %)
Bauda	6	**Yes**	0	0	0	50	33	100	17	17	0	0	0
		No	100	100	100	50	67	0	83	83	100	100	100
Mayurbhanj	8	**Yes**	13	0	0	38	38	100	25	38	0	13	0
		No	88	100	100	63	63	0	75	63	100	88	100
Rayagada	6	**Yes**	0	0	0	83	17	100	67	0	0	17	0
		No	100	100	100	17	83	0	33	100	100	83	100

4.10.13 **Garbage Disposal:** The following situation of garbage disposal has been noted in the sample villages in Madhya Pradesh and Chhattisgarh:

- No garbage disposal facility and dumping of garbage around the houses
- Disposal of garbage on farmland or in a specific place away from the village
- Disposal in a common place/pit to make compost

4.10.14 **Drainage*:*** The following situation of drainage has been noted in the sample villages in Madhya Pradesh and Chhattisgarh:

- No facility of drainage
- Open and running drainage
- Open & stagnant drainage

4.10.15 **Host Reservoirs & Animal Habitation*:*** There is a need to sensitize the health administration in the States on the influence of host reservoirs over spread of VBDs. With all effective drugs and anti-insect measures available, the menace of malaria in particular and VBDs in general have not been able to be contained as the control framework in India for vector borne disease was developed solely with the purpose of addressing the population as a group at risk rather than an integrated control of host, environment, and transmission factors. Definitely, host factors are important determinants for these diseases. Often a host may not manifest an infection, despite being infected by two or more disease. Such individuals are potent carriers who serve as reservoirs of the disease and transmit it to susceptible individuals like children, pregnant women and the old. Often other animals, which may remain unaffected from the diseases causing pathogen, serve as a reservoir of the disease (eg. JE). Location of hamlets/village settlements, type of housing, sleeping habits, poor knowledge about the disease and treatment seeking behaviour are equally significant as determinants of transmission of VBDs including malaria. Host reservoirs play an important role in the spread of VBDs as for example change in land use especially irrigation, agricultural intensification and deforestation which have caused the release of new diseases or established many less prevalent diseases. Clearance of forests or any undisturbed natural habitat causes vectors and reservoirs to leave their natural and captive hosts and seek new hosts. This is commonly seen in vector borne diseases. Villages especially around forest areas, rice fields or irrigation canals commonly suffer from infectious diseases like malaria and Japanese encephalitis. Often drastic climatic change usher infectious diseases. Floods, earthquakes and cyclones can bring in infectious disease from unexpected quarters. Human settlement, commercial development, construction of roads, water control systems (dams, canals, irrigation systems, reservoirs), and climate singly and in combination contribute to the emergence of infectious diseases. The nature and extent of change in the incidence of infectious disease depends on the intensity of changes in land-use and settlement, the time interval from one land-use to another/others, changes in type of soil and its degree of water absorption, changes in vegetation characteristics, changes in the types and amounts of bodies of water, their size, shape, temperature, pH and proximity to vegetation and, changes in climate. All these affect the vector, and in turn, the incidence and prevalence of infectious disease. There is, therefore, a need for mapping for ecological changes and corresponding changes in potential vectors at micro level.

4.10.16**Outbreak of VBDs:** Outbreaks of VBDs during the past 5 years were reported in the sample villages of Madhya Pradesh, Chhattisgarh, Andhra Pradesh and Orissa are as follows:

- Madhya Pradesh: Malaria (3 villages); Chickengunya (5 villages) and Dengue (1 village).
- Chhattisgarh: Malaria (2 villages)
- Andhra Pradesh:Malaria (2 Village)
- Orissa: Malaria (3 Villages)

4.10.17**Drinking Water Facilities**: Drinking water sources were reported to be hand pumps and wells. Storage of drinking water is in metal utensils or drums or earthen pots (with or without cover).

4.10.18**Availability of Government Health Workers**: ANM and/or AWW and/or MLV/Mitanins/MPW are reported to be available in majority of the villages covered. MLVs/Mitanins/MPW are involved in blood sample collection and drug distribution. Under the National Vector Borne Diseases Control Programme, the active case detection is envisaged to be carried out by Multipurpose Health Workers (male) under primary health care system. The Primary Health Care system in our country provides one MPW (male) for 3000 population in hilly and tribal areas and 5000 population in other areas. However, over the years, the strength of the MPWs (M) has been depleting. There is shortage of MPWs vis-à-vis sanctioned strength in all the states including in Madhya Pradesh and Chhattisgarh.

4.10.19**% of Households Using Bed Nets Provided by Government:** 7 villages out of 20 sample villages (35%) in Madhya Pradesh reported usage of bed nets provided by Government. The percentage of households using bed nets provided by Government is reported to vary between 5-40%. The bed nets were provided at a cost to the community households @ Rs 10/- (BPL families) and Rs 20/- (APL families) and free for very poor families. In some villages, the tribal communities reported little usage of bed nets. The purchase of bed nets from private sources was also reported. Bed nets were provided by the Forest Department in Chhattisgarh in some villages, in addition to regular governmental supplies through NVBDCP. Bed nets are being distributed with the help of Panchayats in the sample villages covered by the consultants. 13 villages out of 20 sample villages (65%) in Chhattisgarh reported usage of bed nets provided by Government. The percentage of households using bet nets provided by Government is reported to vary between 60-85% in these villages. The consultants also observed usage of bed nets by villagers for fishing purposes in some instances.

4.10.20**Willingness to Pay for Medically Treated Bed Nets*:*** Limited supply of bednets for use by those in most need and with limited capacity to buy such nets from the commercial outlets is included in the strategies under NAMP. Areas for bednet distribution should be carefully selected and prioritized based on high risk factors such as high API, high proportion of *Pf* cases, inaccessibility of the villages or operationally difficult area for indoor residual spray. Deltamethrin is being supplied for treatment of nets by DVBDCP to the States. Treatment of nets was undertaken by Health Deptt personnel (trained earlier by officers of DVBDCP Head Quarters) at District level before distribution. As per District. Malaria Officers, information regarding use of nets, safety, precaution and requirements of retreatment were conveyed

during the Panchayat/gram sabha meetings/ sub centres by the health staff and at village level by Malaria Link Volunteers – MLV. Around 50% of the community members in the sample villages covered in Madhya Pradesh & Chhattisgarh expressed their willingness to pay for the medically treated bed nets, if supplied by the Government. There is no evidence of significant social marketing[12] activity in the sample villages of four states covered in respect of stimulating the demand for drugs, ITNs and VBD related services in any of the four states covered during the study. This technique has been used extensively in international health programs, especially for distribution of products (such as ITN in this case). It is also frequently used for bringing about changes in socially significant attitudes and behaviour. Generally speaking, ITN are commercially available at prices affordable only by the APL segment of society. The less well off segments currently rely on public health systems (typically free of charge) for access to ITN. Increasingly however, people with *some* ability to pay may seek ITN at affordable prices. However, this segment of the population, though economically active, usually cannot afford the prices charged by commercial marketing firms. Accordingly, social marketing should aim to distribute commonly needed products such as ITN at affordable prices to the less well-off (but not necessarily the poorest who may continue to rely solely on distribution by the public health delivery system), segments of the population, through commercial networks, and community / NGO based distribution systems. These channels should be motivated to stock and sell products on the basis of the financial margins received by them. In this manner, social marketing could provision for health care products through multiple channels. Ideally, the socially marketed products should be available in all pharmacies and other retail outlets in cities, small towns, and rural areas, so as to enhance availability and visibility in every possible manner. Additionally, the products be priced low to enhance affordability and increase outreach and coverage. As the consumer's ability to pay increases, the consumer will graduate from relying upon the public health network to the multiple social marketing outlets for the same products, and eventually to commercially marketed products for meeting their needs. Currently SMOs market brands, owned and promoted by them within India (in particular in the areas of maternal and child health, family planning, STD / AIDS, and safe abortion,), without geographic limitation. However, SMOs also market public-sector brands in assigned geographical territories, subject to terms and conditions agreed in each case. The health care products being socially marketed in India include condoms, oral contraceptive pills, oral rehydration salts, iron-folic acid tablets, sanitary towels, and mosquito nets.

[12] Social marketing refers to the application of commercial marketing concepts, tools, resources, skills and technologies to encourage socially beneficial behaviour among those segments of the population not served, or not adequately served by existing public and private systems. Social marketing applies commercial marketing skills and technologies to the analysis, planning, execution and evaluation of programs designed to influence behaviour change among target audiences in order to bring about socially beneficial health seeking behaviour. From conceptualising product development, testing and targeted communication to consumer research and market segmentation, social marketing looks at the provision of health care products and services not as a medical problem, but as a sociological issue, and a marketing challenge. Social marketing in the health sector seeks to bring about changes in health seeking behaviour by creating access to, and improving the demand for products and services, needed for sustaining the sought after change in behaviour. . While IEC promotes health-seeking behaviour, social marketing facilitates the practice of such behaviour by enhancing the affordability and availability of relevant products and services to low income groups

4.10.21 **Participation of Communities in Anti-Malaria Campaign:** The community members participate in anti-malaria campaigns organized by the Government at village level. However, as many as 8 villages out of 20 sample villages (40%) in Madhya Pradesh reported that there was no anti-malaria campaign undertaken in their villages for a considerable time. Around 50% of the sample villages covered in Chhattisgarh did not have anti-malaria campaigns.

4.10.22 **Indoor Residual Spraying:** The indoor residual spraying is undertaken by the health officials in some villages but the percentage of households which had the benefit was reported to vary between 30-80% . However, it was noted that the indoor residual spraying is not only not regular but was not undertaken at all in as many as 50% of the villages during the last 1-2 years or more. Further, lack of advance communication of residual spraying is reported by the tribal community members in several sample villages covered as one of the reasons for non-utilisation of spraying indoors.

4.10.23 **Control of Mosquito Breeding by Community**: Fumigation of neem leaves, bed nets and fogging, temofas/ganbusia spray and kerosene spray are amongst the measures reported by the tribal communities for control of mosquito breeding.

4.10.24 **Frequency of Visits by ANM/Government Doctor**: ANM visits with periodicity varying between weekly to monthly was reported. In some villages, ANM lives in the village itself.

4.10.25 **Perceptions of Attitude of Government Health Care Providers:** The FGDs revealed that the perceptions of tribal communities in terms of attitude of government health care providers relative to mitigation, treatment and containment of VBDs is not satisfactory in some villages, although cooperative attitude of ANMs & MLVs was reported in several villages. It was noted that there were no Sub-Centres in a few sample villages covered under the study.

4.10.26 **Major Tribes in Sample Villages:** The major tribes in sample villages in Madhya Pradesh are Bheel, Bhilala, Bhavere, Gond, Babhera,Kalar, Panchal, Shil, Padaliya, Ajeja, Corku, Goli and Patlia. The major tribes in sample villages in Chhattisgarh are Gond and Halwa.

4.10.27 **Hygiene*:*** The tribal villagers are not sensitized to the hazards of garbage and about the breeding grounds such as stagnated water in small ponds. Open defecation, storage of water for several days are common. The awareness of VBDs through health education is minimal.

4.11 Health Problems and Access to Health Services

4.11.1 **Early diagnosis and prompt treatment:** There are delays occurring at various stages in the process of diagnosis and treatment of VBDs. The first delay is the delay in accessing appropriate care for the treatment of malaria. In many places fever cases do not reach a proper health care facility because of access problems. The tribal community members would in such an event is likely treated by less than fully qualified practitioners who don't have access to chloroquine or other drugs for VBDs. The second delay is in respect of diagnosis of VBDs. This has to be done by a trained laboratory technician. When there is no facility for blood smear collection and transportation to the laboratory, delays occur. The third delay is for the radical treatment. This

delay is due to factors like non-availability of personnel. Even after the blood smear is found to be positive, radical treatment is delayed because of delay in communicating to the patient or non availability of medicine at the local level. In order to reduce the mortality due to malaria all these delays will have to be reduced to the minimum. The stipulation of radical treatment with in 72 hours is not seen to be easy. Efforts will have to be made to provide radical treatment to all passive cases and to reach undetected cases in the community.

4.11.2 **Inadequate number of laboratory technicians in PHCs:** Though the position of laboratory technician exists in all the PHCs of sample villages, many positions have not been filled. Therefore one technician has to take care of two or more PHCs, which contributes to significant delays. In the absence of laboratory technician, the government may consider supply of rapid diagnostic kits to PHC to maintain the tempo of surveillance.

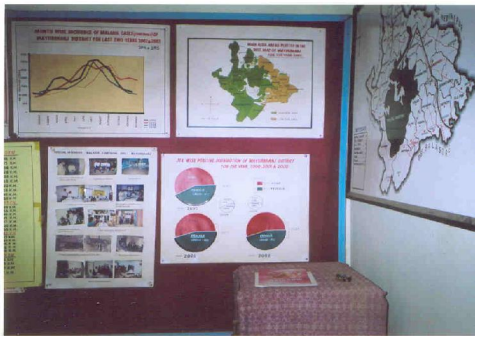
4.11.3 **Inadequate number of male health workers:** There are instances of existing positions of male health workers which have not been filled. Considering their workload in RCH, it is not possible for the female health workers to fully involve in the control of VBDs. Due to these reasons there is a backlog of slides at the village level, which are not transferred to PHCs in time. To augment the shortage of male health workers for VBD related work, state governments could consider increasing the number DDC and FTD. To avoid delay in detection of cases which occur in between visits of MPW, it was envisaged to be supplemented with establishment of Fever Treatment Depots in villages especially in areas which are remote/ inaccessible and have low population density, for example in hilly terrain of Chhattisgarh and MP. However, the effectiveness of FTDs in collection of blood smears, administration of presumptive treatment[13], impregnation of bed nets, promotion of larvivorous fish etc. remains further improvement The function of DDCs are the same as those of FTDs, except that the DDCs do not take blood slides but administer drugs to fever cases. The NGOs/FBOs/CBOs/Panchayats should ensure that no charges are levied on patients for any service rendered under Early Diagnosis and Prompt Treatment (EBDT). The policy of free treatment for EDPT must be publicized and strictly adhered to. Staff or volunteers should be identified where necessary for establishment of DDC (1 per 1000 population or one center within 3 km walking distance) for prompt presumptive treatment in case of fever or in high-risk areas, presumptive radical treatment. The Project areas/villages to be selected where the DDC is not in position or not functioning. Similarly, staff or volunteers should be identified for establishment of FTD (1 per 1000 population or 1 depot within 3 km walking distance. FTD will prepare blood smear as well as provide prompt presumptive treatment in case of fever or in high-risk areas, presumptive radical treatment.

4.11.4 **Distance between hamlets and laboratory:** Time taken between the hamlets and the testing centres has been noted to be an issue in certain sample villages causing delay in collecting, transporting and testing the slides.

[13] As per NVBDCP guidelines, every fever case should receive prompt presumptive treatment or in high-risk areas presumptive radical treatment (Treatment Guidelines in accordance with the drug policy of NVBDCP).

4.11.5 **Ineffective surveillance:** State data shows that active surveillance work is not effectively being undertaken as it was noted that most of the slides were collected from the patients who visited the sub-centre or PHC. There is a potential to strengthen the network from grassroots to institutions at state to gather information about outbreaks.

4.11.6 **Use of rapid diagnostic test and blister packs:** Rapid diagnostic kits are stated to be distributed extensively. Blister packs are however extensively being used. Administration of the drug and supervision is seen to be simplified as no detailed instructions are needed to be given to the communities.



Surveillance Data Display at PHC

4.12 **Integrated Vector Control**

4.12.1 **Insecticide:** Shortages in *t*he availability of insecticides have been noted in some of the districts covered in Madhya Pradesh and Chhattisgarh. While outdoor fogging is accepted by the community, acceptance of indoor spraying varies within different sample villages. It was observed that the state governments generally observe the periodic spraying of insecticides. PRI's participation helped increasing acceptance of spraying. Some of the PHC medical officers, district malaria officers and the entomologists were sceptical of the effectiveness of DDT to kill the vector in view of the mosquito resistance to DDT. The choice of insecticide for areas is done based mainly on the vectorial influence of *Anopheles culicifacies*, the main rural vector of malaria in India. In areas with sibling species A of *An culicifcaies*, Malathion is used. In areas with sibling B, DDT is used; if there is no epidemiological impact, Malathion is recommended. Spray operations are to be carried out in all areas with API 2 or above, though priority is given to high-risk areas. It was noted that fogging is being done during an epidemic using malatheon.

4.12.2 **Mosquito nets**: There is a limited supply of mosquito nets as expressed by the tribal communities. A knowledge, attitude and practice (KAP) study conducted on the use of bed nets revealed that a vast majority of the households did not use bed nets due to economic reasons (cost of treatment through dipping in insecticide solution). On the whole use of mosquito nets was reported to yielded good results but they were distributed to fewer households[14]. On the question of willingness to purchase, the need for supply of at least two nets per household was expressed and that to pay for insecticides for annual treatment, there was a mixed reaction. While some (APL) showed their willingness, others look it as a governmental responsibility, particularly the BPL segment. It may also be noted that Communities took ITN more as a one time subsidy by the Government and as a good will gesture rather than a community owned sustainable health programme to protect them against malaria and other VBDs. There is a need

[14] It is evidenced that ITNs reduces parasitemia by 38%, anemia by 21 % and severe cases by 45% among pregnant ladies while during delivery these reduces placental transmission of malaria by 23% and 25% reduction in low birth weight babies. (Ref: Ter Kuile et al. ASTMH 2003)

to involve local NGOs for treatment of the nets and explore the possibility of distribution free of cost in camps arranged during weekly markets facilitated by Health staff. Retreatment could also be carried out in primary schools/ subcentres. Considering the financial constraints faced by BPL families and their inability to pay for retreatment changes and also the lack of interest shown by APL families, it is necessary that DMOs seek free treatment of both the NVBDCP as well as community owned nets. Training needs to be provided by DMO office to MO, PHCs, MPWs and NGOs etc. The communities should be informed by public announcement ("Mandi") through Panchayat of date & time and venue of treatment (PHC/Health Sub Centre). The targeted coverage should be of the order of 90% at village level. There is need for preparation of "guidelines" on ITN programme, covering all elements involved in the implementation and for evaluation of outcome.

4.12.3 **Larvivorous fish**: Biological control is considered to be the best way to control mosquitoes. Use of larvivorous fish (two varieties of fish namely Guppy and Gambusia) which are released into the water sources has been noted in some villages. It was observed that in Chhattisgarh, some fish hatcheries are well maintained (maintained by the Fisheries department demonstrating a good inter-sectoral collaboration). In Chhattisgarh there are also distribution centres and mobile distribution units. Larvivorous fish programme is fairly wide spread throughout Chhattisgarh with hatcheries functioning in some of the villages.

4.12.4 **Drug supply**: The state governments receive their annual quota of drugs from the central government for VBDs. Delayed supply of drugs has been indicated in States, which affected the treatment of patients. A study was conducted on operational feasibility of blister packs by Malaria Research Centre (MRC) in few districts of Madhya Pradesh earlier. The study has shown that acceptance of blister packs were very good by the communities and that there is improved compliance by patients (90%)[15].

4.12.5 **Capacity building:** Training is being imparted to laboratory technicians, male health workers, MLVs etc but is not found to be adequate as the tribal communities reported cases of defective diagnosis. There is a case for remedial training of identified individuals. It was found out that the malaria related workers at the District and PHC level need to be motivated and adequately equipped to handle the problem of malaria and are locally well sensitized. They should be equipped to develop local strategies to tackle malaria control with the support of Medical Officers who are appointed on contract basis (if necessary) to work with the machinery of the Health Service at the grass root level. Capacity building is also required to prevent indiscriminate use of anti malaria drugs and incomplete treatment as this would make the parasite load in the community to remain persistent and the VBD, especially malaria transmission, maintained.

4.13 Seasonality of VBDs

The following provides the general pattern of seasonality and frequency of VBDs in the focus states of coverage:

[15] Concept Note for the Proposed Enhanced Vector Borne Disease Control Programme (2005-2010)

Table 30: Seasonality of VBDs

Disease	Season of Appearance and Major Occurrence in Focus State	Contribution of Environmental Factors for Emergence of Disease
Malaria	Late summer, monsoon or post-monsoon. Annual Madhya Pradesh, Chhattisgarh, Andhra Pradesh, Orissa	Land-use changes like irrigation, deforestation and agriculture, and urbanisation and migration. 60 per cent of cases emerge due to environmental change
Dengue	Late monsoon and early winter. Annual Madhya Pradesh, Chattisgarh, Andhra Pradesh, Orissa	Largely due urbanisation and improper water storage. Almost entirely attributable to environmental factors.
Japanese Encephalitis	Post monsoon event Andhra Pradesh	Rapid change in agriculture practices and livestock rearing especially pigs. Wild local reservoirs like wading birds also contribute to the dispersal of the disease. Significant contribution of environmental factors.
Kala azar	Annual Orissa Madhya Pradesh	Animal reservoirs, favourable breeding grounds of the sand fly (the vector) and susceptible populations. Significant environmental reasons for emergence and persistence.
Filariasis	Persistent in susceptible populations Andhra Pradesh, Orissa	Urbanisation, unhygienic conditions, improper water storage and susceptible populations. Almost entirely attributable to environmental factors.

The peak malaria season and epidemic risk of VBDs varies from season to season. The Seasonality Based Action Plan at District levels should address adequate coverage of drugs and ITNs to give areas with low coverage or risk of excessive high transmission and epidemics. Surveillance of increase in transmission and epidemics should be intensified and policy makers and public be informed of what is being done and what they need to do themselves using press releases, and radio and TV programmes. Drug supply should be monitored and case management teams should do field visits to assess use of standard treatment, problems with drug policy,etc Preparation should be underway to ensure malaria sentinel sites are ready for drug resistance studies, bioassay, vector species identification and insecticide resistance studies. Malaria emergency preparedness due to floods and seasonal influences should be assessed.

4.14 Trend analysis of VBDs

There are reasons to suspect the accuracy of the data relating to reported cases and incidence of death coming out of the tribal areas, as regular reporting is hampered by access, communication systems, and proper recordings on time and maintaining of registers. Further, major thrust is on malaria in terms of data capture and it is not evident regarding the extent of surveillance other vector borne diseases under NVBDCP as the focus group discussions mainly revealed issues related to malaria which is largely prevalent in Madhya Pradesh and Chhattisgarh.

Situation analysis of burden of vector borne diseases in 2005 as per Directorate of NVBDCP among tribal communities in terms of vector borne diseases in Madhya Pradesh and Chhattisgarh district-wise (districts covered as part of study highlighted) is given under:

Table-31: Epidemiological Situation Report of Madhya Pradesh 2005

Epidemiological Situation Report of Madhya Pradesh 2005																
S.No.	DISTRICT	POP. IN (000'S)	B.S.C.	B.S.E.	POSITIVE CASES				P.F. %	A.B.E.R.	A.P.I.	S.P.R.	A.F.I.	S.F.R.	R.T.	DEATHS
					P.V.	P.F.	MIXED	Total								
1	Indore	2587	317250	317250	394	37	0	431	8.58	12.26	0.17	0.14	0.01	0.01	426	0
2	Dhar	1937	282049	282049	2703	1106	0	3809	29.04	14.56	1.97	1.35	0.57	0.39	3383	1
3	Jhabua	1596	296486	296486	7251	4874	8	12133	40.24	18.58	7.60	4.09	3.06	1.65	12133	0
4	Barwani	1174	168987	168987	391	165	2	558	29.93	14.39	0.48	0.33	0.14	0.10	558	0
5	Khargone	1690	227995	227995	1130	242	0	1372	17.64	13.49	0.81	0.60	0.14	0.11	1372	0
6	Khandwa	2025	255032	255032	399	255	0	654	38.99	12.59	0.32	0.26	0.13	0.10	647	0
7	Ujjain	1959	247614	247614	276	56	0	332	16.87	12.64	0.17	0.13	0.03	0.02	328	0
8	Dewas	1458	182422	182422	599	83	0	682	12.17	12.51	0.47	0.37	0.06	0.05	682	0
9	Ratlam	1373	174875	174875	2119	658	2	2779	23.75	12.74	2.02	1.59	0.48	0.38	2709	0
10	Mandsaur	1353	141747	141747	259	58	0	317	18.30	10.48	0.23	0.22	0.04	0.04	316	0
11	Neemuch	846	94797	94797	268	56	0	324	17.28	11.21	0.38	0.34	0.07	0.06	324	0
12	Shajapur	1459	184644	184644	428	176	0	604	29.14	12.66	0.41	0.33	0.12	0.10	604	1
13	Bhopal	1991	222608	222608	3567	303	13	3883	8.14	11.18	1.95	1.74	0.16	0.14	3810	1
14	Sehore	1187	128279	128279	1394	240	0	1634	14.69	10.81	1.38	1.27	0.20	0.19	1629	1
15	Raisen	1240	204754	204754	1577	296	0	1873	15.80	16.51	1.51	0.91	0.24	0.14	1767	0
16	Hoshangabad	1253	178026	178026	917	1082	3	2002	54.20	14.21	1.60	1.12	0.87	0.61	2000	0
17	Harda	538	57665	57665	100	15	0	115	13.04	10.72	0.21	0.20	0.03	0.03	114	0
18	Rajgarh	1402	163040	163040	1831	651	0	2482	26.23	11.63	1.77	1.52	0.46	0.40	2450	1
19	Vidisha	1372	169698	169698	2048	388	0	2436	15.93	12.37	1.78	1.44	0.28	0.23	2436	1
20	Betul	1668	242928	242928	180	193	0	373	51.74	14.56	0.22	0.15	0.12	0.08	373	0
21	Gwalior	1823	186773	186773	1514	771	0	2285	33.74	10.25	1.25	1.22	0.42	0.41	2279	0
22	Datia	751	82129	82129	161	28	0	189	14.81	10.94	0.25	0.23	0.04	0.03	189	0
23	Bhind	1716	198790	198790	1140	46	0	1186	3.88	11.58	0.69	0.60	0.03	0.02	1177	0
24	Morena	1803	175126	175126	470	251	0	721	34.81	9.71	0.40	0.41	0.14	0.14	713	0
25	Shivpuri	1599	209117	209117	3158	806	0	3964	20.33	13.08	2.48	1.90	0.50	0.39	3964	2
26	Sheopur	610	81951	81951	785	703	0	1488	47.24	13.43	2.44	1.82	1.15	0.86	1488	0

Epidemiological Situation Report of Madhya Pradesh 2005																	
S.No.	DISTRICT	POP. IN (000'S)	B.S.C.	B.S.E.	POSITIVE CASES				P.F. %	A.B.E.R.	A.P.I.	S.P.R.	A.F.I.	S.F.R.	R.T.	DEATHS
					P.V.	P.F.	MIXED	Total								
27	Guna	1850	268984	268984	4484	2624	1	7109	36.93	14.54	3.84	2.64	1.42	0.98	7047	0
28	Rewa	2190	279059	279059	3424	683	0	4107	16.63	12.74	1.88	1.47	0.31	0.24	4054	2
29	Sidhi	1939	210842	210842	3012	2180	0	5192	41.99	10.87	2.68	2.46	1.12	1.03	5192	25
30	Shahdol	1869	286311	286311	2223	1428	14	3665	39.35	15.32	1.96	1.28	0.77	0.50	3665	0
31	Umaria	595	88542	88542	712	279	0	991	28.15	14.88	1.67	1.12	0.47	0.32	991	0
32	Satna	2066	264108	264108	5875	1497	2	7374	20.33	12.78	3.57	2.79	0.73	0.57	7374	0
33	Sagar	2326	325149	325149	3656	1549	0	5205	29.76	13.98	2.24	1.60	0.67	0.48	5205	7
34	Chhatarpur	1637	209882	209882	1661	228	0	1889	12.07	12.82	1.15	0.90	0.14	0.11	1888	0
35	Tikamgarh	1329	155388	155388	1007	41	0	1048	3.91	11.69	0.79	0.67	0.03	0.03	1048	0
36	Damoh	1268	149161	149161	886	240	0	1126	21.31	11.76	0.89	0.75	0.19	0.16	114	0
37	Panna	967	115061	115061	808	1001	0	1809	55.33	11.90	1.87	1.57	1.04	0.87	1729	0
38	Jabalpur	2492	281654	281654	812	902	4	1718	52.74	11.30	0.69	0.61	0.36	0.32	1716	1
39	Katani	1246	187268	187268	318	24	0	342	7.02	15.03	0.27	0.18	0.02	0.01	342	0
40	Chhindwara	2209	366558	366558	317	681	6	1004	68.43	16.59	0.45	0.27	0.31	0.19	1001	0
41	Seoni	1413	193900	193900	1411	565	4	1980	28.74	13.72	1.40	1.02	0.40	0.29	1980	0
42	Balaghat	1925	241085	241085	817	750	0	1567	47.86	12.52	0.81	0.65	0.39	0.31	1566	0
43	Mandla	1105	239508	239508	2001	1528	10	3539	43.46	21.67	3.20	1.48	1.39	0.64	3539	0
44	Dindori	722	159282	159282	2478	1967	8	4453	44.35	22.06	6.17	2.80	2.74	1.24	4438	0
45	Narsingpur	1109	121802	121802	1106	467	0	1573	29.69	10.98	1.42	1.29	0.42	0.38	1573	1
	State Total	**68667**	**9018326**	**9018326**	**72067**	**32173**	**77**	**104317**	**30.92**	**13.13**	**1.52**	**1.16**	**0.47**	**0.36**	**102333**	**44**

Table-32: Epidemiological Situation Report of Chhattisgarh 2005

DIRECTORATE OF NATIONAL VECTOR BORNE DISEASES CONTROL PROGRAMME, 22 SHAM NATH MARG, DELHI-110054																
Epidemiological Situation Report of Chhattisgarh 2005																
S.No.	DISTRICT	POP. IN (000'S)	B.S.C.	B.S.E.	POSITIVE CASES				P.F. %	A.B.E.R.	A.P.I.	S.P.R.	A.F.I.	S.F.R.	R.T.	Deaths
					P.V.	P.F.	MIXED	Total								
1	Bilaspur	2288	285539	285539	2324	1579	0	3903	40.46	12.48	1.71	1.37	0.69	0.55	3888	0
2	Janjgir(Champa)	1557	197118	197118	543	367	0	910	40.33	12.66	0.58	0.46	0.24	0.19	608	0
3	Korba	997	184349	184349	4335	3957	0	8292	47.72	18.49	8.32	4.50	3.97	2.15	8288	0
4	Ambikapur	2161	437225	437225	8718	15350	0	24068	63.78	20.23	11.14	5.50	7.10	3.51	24048	3
5	Korea	628	86727	86727	2044	4367	0	6411	68.12	13.81	10.21	7.39	6.95	5.04	6411	0
6	Raigarh	1413	185311	185311	5069	8270	0	13339	62.00	13.11	9.44	7.20	5.85	4.46	13339	0
7	Jashpur Nagar	896	149289	149289	2322	15868	0	18190	87.23	16.66	20.30	12.18	17.71	10.63	18190	0
8	Raipur	3314	423202	423202	1250	1799	0	3049	59.00	12.77	0.92	0.72	0.54	0.43	3049	0
9	Mahasamund	1078	154129	154129	530	362	0	892	40.58	14.30	0.83	0.58	0.34	0.23	892	0
10	Dhamtari	828	122628	122628	364	558	0	922	60.52	14.81	1.11	0.75	0.67	0.46	922	0
11	Durg	3137	423543	423543	1353	705	0	2058	34.26	13.50	0.66	0.49	0.22	0.17	2024	0
12	Rajnandgaon	1452	231583	231583	3362	368	0	3730	9.87	15.95	2.57	1.61	0.25	0.16	3730	0
13	Kawardha	732	94055	94055	1443	653	0	2096	31.15	12.85	2.86	2.23	0.89	0.69	2095	0
14	Bastar(Jagdalpur)	1423	366659	366659	5008	39290	0	44298	88.69	25.77	31.13	12.08	27.61	10.72	44100	0

DIRECTORATE OF NATIONAL VECTOR BORNE DISEASES CONTROL PROGRAMME, 22 SHAM NATH MARG, DELHI-110054																
Epidemiological Situation Report of Chhattisgarh 2005																
S.No.	DISTRICT	POP. IN (000'S)	B.S.C.	B.S.E.	POSITIVE CASES				P.F. %	A.B.E.R.	A.P.I.	S.P.R.	A.F.I.	S.F.R.	R.T.	Deaths
					P.V.	P.F.	MIXED	Total								
15	Danteveda	819	208193	208193	7840	22675	0	30515	74.31	25.42	37.26	14.66	27.69	10.89	30121	0
16	Kanker	746	325361	325361	1263	24014	0	25277	95.00	43.61	33.88	7.77	32.19	7.38	25240	0
	State Total	**23469**	**3874911**	**3874911**	**47768**	**140182**	**0**	**187950**	**74.58**	**16.51**	**8.01**	**4.85**	**5.97**	**3.62**	**186945**	**3**

Epidemiological Situation Report of Andhra Pradesh 2005															
SN	**DISTRICT**	**POP. IN (000'S)**	**B.S.C.**	**B.S.E.**	**POSITIVE CASES**				**P.F. %**	**A.B.E.R.**	**A.P.I.**	**S.P.R.**	**A.F.I.**	**S.F.R.**	**R.T.**	**DEATHS**
					P.V.	**P.F.**	**MIXED**	**Total**								
1	Srikakulam	2353	363066	363066	74	988	0	1062	93.03	15.43	0.45	0.29	0.42	0.27	1062	0
2	Vizianagaram	2005	404187	404187	492	1626	0	2118	76.77	20.16	1.06	0.52	0.81	0.40	2118	0
3	Visakhapatnam	3738	1014787	1014787	2481	8572	0	11053	77.55	27.15	2.96	1.09	2.29	0.84	11053	0
4	East Godavari	3906	704490	704490	1225	6913	0	8138	84.95	18.04	2.08	1.16	1.77	0.98	8138	0
5	West Godavari	3202	513772	513772	117	487	0	604	80.63	16.05	0.19	0.12	0.15	0.09	604	0
6	Krishna	3865	577011	577011	6140	223	0	6363	3.50	14.93	1.65	1.10	0.06	0.04	6098	0
7	Guntur	4487	686431	686431	473	45	0	518	8.69	15.30	0.12	0.08	0.01	0.01	518	0
8	Prakasham	3059	393682	393682	958	321	0	1279	25.10	12.87	0.42	0.32	0.10	0.08	1279	0

Epidemiological Situation Report of Andhra Pradesh 2005																
SN	DISTRICT	POP. IN (000'S)	B.S.C.	B.S.E.	POSITIVE CASES				P.F. %	A.B.E.R.	A.P.I.	S.P.R.	A.F.I.	S.F.R.	R.T.	DEATHS
					P.V.	P.F.	MIXED	Total								
9	Nellore	2663	296602	296602	40	13	0	53	24.53	11.14	0.02	0.02	0.00	0.00	53	0
10	Chittoor	3012	509216	509216	141	49	0	190	25.79	16.91	0.06	0.04	0.02	0.01	190	0
11	Kadapa (Cuddapah)	2706	356477	356477	1980	598	0	2578	23.20	13.17	0.95	0.72	0.22	0.17	2578	0
12	Ananathapur	3839	487674	487674	454	178	0	632	28.16	12.70	0.16	0.13	0.05	0.04	632	0
13	Kurnool	3595	515269	515269	642	151	0	793	19.04	14.33	0.22	0.15	0.04	0.03	793	0
14	Mahboobnagar	3682	385741	385741	119	163	0	282	57.80	10.48	0.08	0.07	0.04	0.04	282	0
15	Medak	2444	307332	307332	12	10	0	22	45.45	12.57	0.01	0.01	0.00	0.00	22	0
16	Nalgonda	3373	361131	361131	7	0	0	7	0.00	10.71	0.00	0.00	0.00	0.00	7	0
17	Hyderabad	2377	329450	329450	321	36	0	357	10.08	13.86	0.15	0.11	0.02	0.01	357	0
18	Rangareddy	3613	149691	149691	426	186	0	612	30.39	4.14	0.17	0.41	0.05	0.12	502	0
19	Nizamabad	1984	175604	175604	37	7	0	44	15.91	8.85	0.02	0.03	0.00	0.00	44	0
20	Adilabad	2732	287815	287815	259	586	0	845	69.35	10.53	0.31	0.29	0.21	0.20	845	0
21	Karimnagar	3597	316658	316658	48	34	0	82	41.46	8.80	0.02	0.03	0.01	0.01	82	0
22	Warangal	3017	399861	399861	57	212	0	269	78.81	13.25	0.09	0.07	0.07	0.05	269	0
23	Khammam	2240	504138	504138	48	1150	0	1198	95.99	22.51	0.53	0.24	0.51	0.23	1198	0
	State Total	**71489**	**10040085**	**10040085**	**16551**	**22548**	**0**	**39099**	**57.67**	**14.04**	**0.55**	**0.39**	**0.32**	**0.22**	**38724**	**0**

Epidemiological Situation Report of Orissa 2005																	
SN	DISTRICT	POP. IN (000'S)	B.S.C.	B.S.E.	POSITIVE CASES				P.F. %	A.B.E.R.	A.P.I.	S.P.R.	A.F.I.	S.F.R.	R.T.	Deaths
					P.V.	P.F.	MIXED	Total								
1	Angul	1223	159217	159217	3141	16055	0	19196	83.64	13.02	15.70	12.06	13.13	10.08	19196	5
2	Balasore	2176	142291	142291	789	1898	0	2687	70.64	6.54	1.23	1.89	0.87	1.33	2685	8
3	Bargarh	1425	132321	132321	1093	4659	0	5752	81.00	9.29	4.04	4.35	3.27	3.52	5700	0
4	Bhadrak	1436	131785	131785	340	374	0	714	52.38	9.18	0.50	0.54	0.26	0.28	708	4
5	Bolangir	1405	176783	176783	4612	8945	0	13557	65.98	12.58	9.65	7.67	6.37	5.06	13545	0
6	Bauda	400	40084	40084	1423	2149	0	3572	60.16	10.02	8.93	8.91	5.37	5.36	3572	26
7	Cuttack	2514	150266	150266	1021	2144	0	3165	67.74	5.98	1.26	2.11	0.85	1.43	3162	4
8	Deogarh	294	66873	66873	580	5351	0	5931	90.22	22.75	20.17	8.87	18.20	8.00	5924	8
9	Dhenkanal	1131	118641	118641	4730	9190	0	13920	66.02	10.49	12.31	11.73	8.13	7.75	13877	3
10	Gajapati	552	92633	92633	323	9900	0	10223	96.84	16.78	18.52	11.04	17.93	10.69	10223	2
11	Ganjam	3352	338195	338195	2563	16450	0	19013	86.52	10.09	5.67	5.62	4.91	4.86	18940	0
12	Jagatsinghpur	1101	40547	40547	201	117	0	318	36.79	3.68	0.29	0.78	0.11	0.29	318	0
13	Jajpur	1738	105632	105632	2936	2427	0	5363	45.25	6.08	3.09	5.08	1.40	2.30	5323	0
14	Jharsuguda	548	53886	53886	344	2724	0	3068	88.79	9.83	5.60	5.69	4.97	5.06	3067	4
15	Kalahandi	1432	271949	271949	4513	22597	0	27110	83.35	18.99	18.93	9.97	15.78	8.31	27063	3
16	Phulbani(Kandhamal)	705	244794	244794	612	29251	0	29863	97.95	34.72	42.36	12.20	41.49	11.95	29832	31
17	Kendrapada	1383	43348	43348	226	136	0	362	37.57	3.13	0.26	0.84	0.10	0.31	362	0
18	Keonjhar	1671	256257	256257	897	23285	0	24182	96.29	15.34	14.47	9.44	13.93	9.09	23807	37

Epidemiological Situation Report of Orissa 2005																	
SN	DISTRICT	POP. IN (000'S)	B.S.C.	B.S.E.	POSITIVE CASES				P.F. %	A.B.E.R.	A.P.I.	S.P.R.	A.F.I.	S.F.R.	R.T.	Deaths
					P.V.	P.F.	MIXED	Total								
19	Khurda	2037	103570	103570	1793	1713	0	3506	48.86	5.08	1.72	3.39	0.84	1.65	3504	2
20	Koraput	1255	174094	174094	880	18999	0	19879	95.57	13.87	15.84	11.42	15.14	10.91	19879	18
21	Malkangiri	511	198357	198357	619	16572	0	17191	96.40	38.82	33.64	8.67	32.43	8.35	17191	23
22	Mayurbhanj	2348	468629	468629	1837	18435	0	20272	90.94	19.96	8.63	4.33	7.85	3.93	20149	5
23	Nawarangpur	1097	198830	198830	194	22431	0	22625	99.14	18.12	20.62	11.38	20.45	11.28	22322	9
24	Nayagarh	913	77161	77161	1008	3094	0	4102	75.43	8.45	4.49	5.32	3.39	4.01	4079	8
25	Nuapada	563	80074	80074	9319	14370	0	23689	60.66	14.22	42.08	29.58	25.52	17.95	23689	22
26	Puri	1625	57235	57235	224	39	0	263	14.83	3.52	0.16	0.46	0.02	0.07	263	0
SN	DISTRICT	POP. IN (000'S)	B.S.C.	B.S.E.	POSITIVE CASES				P.F. %	A.B.E.R.	A.P.I.	S.P.R.	A.F.I.	S.F.R.	R.T.	DEATHS
					P.V.	P.F.	MIXED	Total								
27	Rayagada	878	230412	230412	1084	29015	0	30099	96.40	26.24	34.28	13.06	33.05	12.59	30099	14
28	Sambalpur	984	166550	166550	2256	19932	0	22188	89.83	16.93	22.55	13.32	20.26	11.97	22118	5
29	Sonepur	575	72367	72367	2846	2604	0	5450	47.78	12.59	9.48	7.53	4.53	3.60	5444	0
30	Sundergarh	1956	455843	455843	1477	37836	0	39313	96.24	23.30	20.10	8.62	19.34	8.30	39313	14
	State Total	**39228**	**4848624**	**4848624**	**53881**	**342692**	**0**	**396573**	**86.41**	**12.36**	**10.11**	**8.18**	**8.74**	**7.07**	**395354**	**255**

4.15 **SWOT Analysis (strength, weaknesses, opportunities, threats) of existing prevention and control measures of vector borne diseases control program with particular focus on women and children of tribal community**

Strengths:

- Support workers at village level i.e. ANM, AWW/MPW and MLVs/Mitanins are one of the main strengths of the programme reaching directly to the beneficiaries. If this group is equipped with more technical knowledge and given incentives as under MCH programme, it would enhance their outreach and effectiveness. There could in fact be a system of awards for the best Malaria Link Worker and Malaria Inspector to enhance the disease surveillance.
- Working with and involvement of Panchayats at Village level activities, i.e. distribution of bed nets etc for really needy communities

Weaknesses:

- Inadequate inter-departmental coordination which includes agriculture, fisheries, water supply, sanitation, and public health engineering. This may be achieved by giving representation to these departments in the state and district VBD control societies.

- Inadequate Public Private Partnerships (for example, in view of the shortage of MPWs for conducting active surveillance, it is of utmost importance that passive collection of blood smears from fever case be increased. The District Programme officers with the help of PHC staff should carry out the mapping for private clinics and other functionaries who can act as Passive Case Detection (PCD) center. They should be imparted induction/ orientation training, in malaria before they start operating as PCD center).

- Short training programmes are organised every year for workers in FTDs and DDCs and for MLVs, MPWs, Block medical officers, malaria inspectors and district malaria officers. However, so far the impact of the training programmes does not seem to have been evaluated. In the context of NVBDCP, training materials need to be prepared according to the guidelines from the Directorate of NVBDCP and distributed well in advance to all District level and field workers.

- Weak monitoring system and shortage of supervisory and implementation staff

- Inadequate civil society (including NGOs and CBOs such as SHGs) engagement and participation in project planning, management, implementation and monitoring

Opportunities:

- The significant potential for actively instituting State Vector Borne Disease Control Societies for their close association in NVBDCP in the States, apart from involvement in IEC and training.
- Involvement of Panchayat committees for health and education, civil society and community based organisation such as religious organisations, SHGs, mahila mandals, youth groups, tribal institutions and schools
- Sensitisation of the Government health functionaries working in the tribal dominated villages on their traditional customs, beliefs, attitudes and health seeking behaviour and tribal nstitutions so as to provide the necessary background for ensuring enhanced participation of the tribal community members. There is considerable scope for formulation of strategies for creation of awareness and motivation more effectively with the involvement of tribal elders, religious leaders and medicine men.
- Potential opportunities for social marketing

Threats:

- Private unqualified doctors, quacks and local desi vaidyas (baida-guniya) are a threat as they are readily available at local level but do not provide appropriate medical care and treatment for VBDs
- Weak information, education, communication to tribal communities
- Unplanned development projects without health impact assessement
- Entrusted responsibilities of untrained health functionaries not specific to VBDs such as Anganwadi Workers
- Inadequate rural health infrastructure and delays in medical reports
- Lack of enlistment of support at ground level for access to project benefits
- Inadequate involvement and active contribution of tribal welfare departments and institutions in the states including manpower and funds

4.16 **Delivery Mechanisms - Ability of NVBDCP State Programme Offices to Support the Project Commensurate with the Needs of Tribal Communities**

In order to achieve sustainability of successful vector control programme, it is essential to focus on involvement of hospitals, non-health sector departments including schools/colleges, civil society organizations (NGOs, Faith Based Organizations and Community Based Organizations like Residents. Welfare Organizations, Self-Help Groups, Panchayati Raj Institutions/Municipal Bodies or such like local self-governments, local Religious Bodies and professional associations. This will require detailed mapping (as part of village level mapping) of the resources and stakeholders (both the tribal communities as beneficiaries and secondary stakeholders) for micro planning at village level[16]. This is important given the mandate of State Programme Offices,

[16] NVBDCP guidelines for district level mapping as part of microplan provide envisaged details to be collected which include 1. General: Population, Administrative details (Area, No of Blocks, villages, etc) [Map], Border areas (No. and name of Blocks, villages sharing border

available resources, management systems, procedures, past experience of and the level and attitudes towards participatory approaches in place in the States. In fact, currently, there is no significant evidence of the involvement of above potential stakeholders in the planning and implementation of vector control programmes in the sample villages visited. The association of NGOs is largely limited, though there are a few NGOs such as Centre for Advanced Research & Development, CARE etc, Jeevan Jyoti Mission, etc active in certain districts of Madhya Pradesh and Chhattisgarh. It is extremely important for successful implementation of IPDP to select an effective NGO committed to the tasks assigned. The payment to the NGO should be linked to performance of the tasks assigned and the time period. The monitoring and evaluation of the performance of the contracted NGO should have the following key quality criteria:

(i) Experience in direct implementation of programs in local, similar and/or neighbouring districts;

(ii) Availability of trained staff capable of including tribal community into their programs;

(iii) Competence, transparency, and accountability based on neutral evaluations, internal reports, and audited accounts;

(iv) Integrity to represent vulnerable groups against abuses, experience in representing vulnerable groups, demonstrable mandate to represent local groups; and

(v) Should have a clearer understanding to gender and poverty relations within the tribal community and have the ability to pay particular attention to the social and economic needs of women and tribes.

4.17 **Assessment of Community's Understanding of the Significance of VBDs**

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with other states) [Map], Physical environment details (rainfall, etc); 2. Health care delivery infrastructure: Provide numbers with respect to District Hospitals, CHCs, Block PHCs, Sector PHCs, Addl PHCs/Mini PHCs, Malaria Clinics, Sub-centres, Community volunteers, FTDs, DDCs, Others (specify), ASHA; 3a. Medical & paramedical personnel (public sector) - Sanctioned & In position, Regular, Contractual covering District Programme Officer (DMO, any other), Asst Malaria Officer, MO PHC, Health Supervisor, Malaria Inspector, Lab Technician, MPW (M, F), RRTs; 3b. Medical & paramedical personnel (private sector) covering Institutions, Clinics, RMPs, Any other (including Informal Service Providers); 4. Sub-centre wise epidemiological stratification (malaria incidence, Pf%) for last three years covering Sub-centre wise deaths for last three years, Month wise malaria cases, Pf cases (District level), Drug resistance (Blocks/PHCs reporting resistance, Drug policy in resistant areas); 5. Vectors and their bionomics, Vector susceptibility; 6. logistics details such as position and requirement for Anti-malarials, Diagnostics (RDTs), Microscopes, Insecticides, Larvicides, Spray equipment and accessories, ITNs, Sub-centre wise estimated no. of community owned bed nets (purchased by community) , Bed nets distributed under Govt programme, Total no of bed nets available (Distributed under Govt Programme + Community owned bed nets), Insecticide - Liquid Synthetic Pyr., Larvivorous Fish (No. of functional hatcheries at District, Block levels, No. of breeding places, No. of identified breeding places seeded with larvivrous fish); 7. Capacity of medical and paramedical workers, volunteers in public and private sector, 8. Communication activities such as Organizations (NGOs/FBOs/SHGs), Tribal Councils mapped & involved in social mobilization, Advocacy workshops/Inter sectoral meetingas planned & conducted at each level, Communication materials/messages planned & available at each level, requirement.

The focus group discussions with tribal community members conducted in the sample villages in Madhya Pradesh and Chhattisgarh reveal that a sizeable fraction of the respondents were not aware of the causes, signs and symptoms of VBDs including malaria, breeding and resting habits of mosquitoes and usefulness of insecticidal spray.

The response pattern about symptoms associated with VBDs including malaria indicated that majority of the respondents knew fever as a symptom of malaria. Chills and rigor were also indicated by a significant proportion of respondents. Headache, weakness, vomiting, body ache and loss of appetite were also cited as symptoms of malaria. Enlargement of spleen during malaria was not known to the respondents. Around 15% had no knowledge about even any one symptom of malaria. In particular, knowledge of the symptoms for other VBDs under the programme is not generally known to the tribal communities. The level of awareness was less among females compared to the males. Similarly, educational status of the respondents also significantly influenced the knowledge about symptoms of malaria. Awareness in the community regarding causes, symptoms, cure and control of malaria is increasing although a lot is still to be achieved particularly regarding the importance of blood smear examination, prompt and complete treatment, source reduction, use of cost-effective environment-friendly vector control initiatives as, larvivorous fish and insecticide treated bed nets (ITNs). Adoption of appropriate measures for controlling breeding of mosquitoes, personal protection as well as prompt treatment can come about by making the facilities accessible, awareness initiatives and pro-active behavioural changes in the community.

The response pattern about the method of spread of VBDs including malaria indicated that majority of the respondents are aware of the spread of the disease through mosquitoes. The various means indicated include stagnant and dirty water, cess pools, agricultural fields, open drains, poor sanitation, unused wells etc. Some respondents attributed spread of VBDs and particularly malaria to drinking contaminated water and contaminated food. Around 15% of the tribal respondents had no knowledge about the method of spread of malaria. The spread of malaria through blood transfusion is not known to the respondents.

The response pattern regarding the breeding of mosquitoes indicated that about 50% were aware that mosquitoes lay eggs in dirty water while around 25% thought the mosquitoes lay eggs in any water collection while some thought they lay eggs in vegetation. There were some respondents who did not know where the mosquitoes lay their eggs.

The response pattern about methods of preventing mosquito breeding indicated that majority were in favour of drainage of water collection and removal of water collection. The tribal population had preference for use of smoke for prevention of breeding of mosquitoes. Use of oils in drains was considered as an option by around 25% of the respondents. Majority of the respondents knew about insecticidal spray and coils for killing mosquitoes. It was observed that the awareness of impregnated nets and their availability through governmental sources does not exist with a significant proportion of the tribal community members.

The response pattern regarding diagnosis indicates that around 25% of tribal respondents were ignorant of the methods of diagnosing malaria and more than 75% about any diagnostic method for other VBDs. Use of blood slides for malaria diagnosis was known to around half of the respondents. This is largely influenced by the educational status of respondents. The proportion of tribal women who knew about slide examination was less. A few respondents believed that urine test may be used for diagnosis while a few indicated that x-ray could be used for diagnosis of malaria. Around 20% of the respondents were aware of chloroquin while the rest were not aware of choloroquin for treatment of malaria. The awareness was low among illiterates and women. The awareness of the names of insecticides was observed to be low. DDT was the commonest insecticide names by the respondents. The awareness of DDT, BHC, Malathion and commercial sprays was dependent on the educational status of respondents.

ANM/AWW and doctors were cited to be the commonest source of knowledge about malaria. This was followed by family members and to some extent by radio/TV. Significantly, a sizeable portion of respondents did not cite newspapers or posters etc as sources of knowledge.

Majority of the respondents felt that malaria and other VBDs were not an everyday illness and that it was not self limiting that requires no treatment. While the respondents are of the opinion that VBDs in general are curable, some have pointed out that filaria is not a curable disease. Sizeable proportion of respondents agreed that insecticides used against malaria are effective. While some respondents were willing to get their houses sprayed, significant proportion of tribal respondents did not give an affirmative response. The general response to chloroquin as an effective medicine for malaria treatment was positive. Many respondents were not aware of other alternative drugs such as quinine and primaquine. There is also unfamiliarity with respect to the dosage and the treatment regimen. A significant proportion of respondents felt that VBDs including malaria should be treated even if the person has to buy prescribed medicine.

Most of the respondents reported taking treatment in the event of malaria. The prevalence of other VBDs is not stated to be very significant. The practice was seen to be more common among literates than illiterates. The commonest source for taking treatment of malaria was Health Centres and hospitals followed by qualified medical practitioners. Drug Distribution Centres (DDCs) and Fever Treatment Depots (FTDs) were the sources of treatment in a very small fraction of the respondents. Use of larvivorous fish is not known to a majority of tribal community members.

4.18 **Identification of Social, Economic, Cultural and Geographical Factors that Influence Health/Treatment Seeking Behavior of Tribal Communities with regard to Vector Borne Diseases**

An indication of the extent of social, economic, cultural and geographical factors influencing health/treatment seeking behaviour of tribal communities is borne out from an illustration of sample survey[17] of K.A.P. about malaria carried out among a sample of inhabitants selected by random sampling in a tribal area of Baster district, which is a hyper-endemic area of the disease, predominantly by P.falciparum infection, which showed that understanding about the problem of malaria was poor- only about 50% (ranging from 30% to 60%) of the respondents were aware about cause and signs and symptoms of malaria, breeding & resting habit of mosquitoes, usefulness of insecticidal spray and ill effect of mud plastering following residual spraying. Proper health education and community involvement were, therefore, considered necessary to achieve control of malaria in the locality. 46% of the respondents were aware that malaria is caused by mosquito bite, the rest believed that it is caused by the wrath of God (20%) witchcraft (15%), strolling in a forested area (4%), eating stale food (2%), drinking bad water (1%), while about 10% of tribal people were ignorant about the mode of disease transmission. 50% of respondents were cognizant about the symptoms of malaria and the need to get their blood examined in case of fever. However, 50.0% revealed that in case of fever they would prefer to obtain treatment from tribal healers (20%), practice witchcraft (15%), use wild herbs (8%), use chili (4%), or turmeric powder (3%). 58% of the respondents were aware that mosquitoes rested in human dwellings, 30% believed that they lived in cattle sheds and jungles, and the rest did not know. The majority of respondents did not know about the breeding place of mosquitoes. 60% were aware that spraying insecticides in the village was intended to kill mosquitoes, 20.0% believed that it killed house flies, and the rest did not know. 30% knew that mud plastering should not be done after insecticidal spray, however, about 80% of the population would mud plaster their houses within a week of spray. 7% used smoke to drive away the mosquitoes or used Kuranji oil as repellent to prevent mosquito bites. Mosquito bednets or any other type of repellent were not used. There is a dire need to educate the families and community in malaria control.

It is noted that the efforts of local malaria control operations are thwarted by the attitude of local population by not adhering to complete treatment, smearing of houses after indoor residual spray and not realizing the importance of IRS (as they do not allow spray in all rooms). Socio-cultural aspects of tribal inhabitants responsible for maintaining high degree of malaria have been well documented in intense malarious regions of Orissa and Madhya Pradesh. Inaccessibility due to difficult terrain and non-compliance to treatment by inhabitants are among the prime reasons resulting in outbreaks of malaria in tribal areas. There is thus a need to impart health education to tribal communities by audiovisuals (i) showing the benefits of adhering to radical treatment to avoid deaths, (ii) to educate them not to smear the sprayed surfaces and ensure complete coverage of houses and rooms, (iii) promotion of insecticide treated bed nets, and (iv) introduction of blister packs for specific age groups of fever/malaria cases for more effective

[17] Knowledge, Attitude and Beliefs about Malaria in a Tribal Area of Bastar District (Madhya Pradesh), Division of Medical Entomology, National Institute of Communicable Diseases, Delhi – Indian Journal of Public Health, 1993 Oct-Dec;37(4):129-32.

radical treatment. The finding of *P. malariae* necessitates the importance of careful blood slide examination to know the actual prevalence of parasite species requiring specific treatment strategy. There is also need to monitor drug resistance in *P. falciparum* to chloroquine in different areas and to ensure whether two rounds of IRS are sufficient to exert vector control in an area with transmission window open for around eight months.

An assessment was made by the consultants of the various health facilities or providers available and accessed by the people, their physical distance from the patients and the preferences of the patients while choosing between various services.

Government hospitals and health centres located nearby were ranked first due to easy accessibility, availability of free services, as well as the belief that allopathic medicines work 'quickly' and are thus effective. Malaria workers, pharmacists and village doctors were ranked second to fourth due to their availability. Female health workers and AWWs came next, followed by mission hospitals, vaidyas, and faith healers. Due to the high cost of treatment, private doctors were ranked the lowest.

The focus group discussions with tribal communities during the survey undertaken by consultants in the identified states revealed that, on an average, over one third of the respondents sought treatment of malaria during the first day of the illness while another one third within two days. It was also noted that spending time for treatment of ailments of self or family members means loss of income for the day for tribal communities and unless they are bed-ridden, the diseases are not taken seriously. It was observed that over 20% of respondents did not know the interval between the onset of malaria and taking treatment. Only around 10% of the respondents took traditional medicines for treatment of malaria. It was observed that the tribal communities are not always in favour of spraying inside the houses. Only around 10-15% of the respondents reported usage of nets and meshes in their homes. Use of mosquito coil was noted to be less prevalent compared to smoke as a means of prevention of mosquitoes. No method was being used by over 30% of the respondents. Over 20% of the respondents slept outside their homes. There was a direct association between the sleeping habits and the literacy status of the respondents.

It was noted that majority of the community members stated that the health workers do not generally visit their homes. The second commonest response was that the health worker visited every month. A sizeable proportion of the respondents (around 75%) indicated that insecticidal spray was not used in their area during the last one year. Around 10-15% of the respondents indicated that they had their houses sprayed. Foul smell, respiratory problems and discomfort, lack of confidence in the usefulness of DDT as well as absence of advance information were cited as the reasons for not getting their homes sprayed. Around one third of the respondents indicated that they had their blood slides made with the onset of fever. Significantly, many indicated that they did not know the results of blood slide examination. No respondent could specify the type of parasite – P. Vivax or P.Falciparum. A small percentage of the respondents stated that they use impregnated nets. Majority of them got their nets from the government. A sizeable proportion of respondents claimed that they did not get free or subsidized impregnated nets from the government. Some respondents mentioned that nets were

purchased from private sources. Ready availability of medicated nets as well as availability of drugs through governmental sources are important given that the average monthly income of majority of respondents in the tribal communities visited was less than Rs 2000/-. It was also observed through anecdotal reference, the usage of impregnated nets for fishing by some of the tribal community members.

The tribal population still lacks development; cultural and social taboos are commonly seen. Female members seldom talk to strangers, hence a larger proportion of respondents were tribal men. These aspects, could be addressed, inter alia, through targeted IEC and BCC campaigns for remote tribal village communities and frequent visits of local health functionaries to the community households. The usefulness of medicated nets in sufficient number to the households, larvivorous fish, smear tests, blister packs as part of presumptive treatment etc and effectiveness of drugs for control of VBDs needs to be demonstrated to the community members. Mass mobilization campaigns would therefore be essential. There is a case for specialized cadre of health workers/volunteers for prevention and control of VBDs, given that the current and the envisaged heavy work load of ASHA/Community Health Workers and other local functionaries like ANMs etc is focused on general health care programmes and not specific to VBDs. The cultural and social taboos can be overcome gradually though sensitization and involvement of tribal leaders and institutions, involvement of tribal medical men as well as strengthening of local SHGs and Mahila Mandals for local outreach. Promotion of gender sensitisation interventions as an integral part of NVBDCP as well as through special interventions and as part of health systems research could be useful tools in enhancing effectiveness of gender sensitization strategies. One measure of effectivness of such strategies could be the sex ratio of new smear-positive patients over time in NVBDCP States.

IEC Material at Tribal Village in Orissa

The inadequate knowledge regarding symptoms of malaria and other VBDs is on account of inadequacy of IEC activities among tribal communities. Awareness regarding importance of blood test, distribution of free medicines and spraying activities, use of Gambusia fish etc as larvicides are not wide spread. The recall rate of IEC activities is not very high. Poverty has deprived the tribal population from access to mass communication methods like television and low levels of literacy has resulted in inadequate use of print media for information dissemination. The health care providers fail to communicate diagnosis of the test results or about the disease process or methods of prevention and control to the patients and their family members, thereby resulting in the respondents failing to associate a set of symptoms with a particular disease and seeking prompt treatment. Wrong messages from quacks and faith healers are also evident from the focus group discussions. Smoke from log wood or neem is considered as an easily available option to eliminate mosquitoes from within the house. Use of insecticides is considered a costly option. Poor motivation of field health workers and poor infrastructure facilities for slides and microscopes also contribute to the current status of health seeking behaviour of the tribal

communities. There are a few PHCs which display the updated position with respect to the VBDs at the Centre with month wise trends. However, this is not uniformly evident at all the PHCs covered during the study.

4.19 **Assessment of the Potential Adverse Effects of the Project.**

a) National Environmental Engineering Research Institute, Nagpur was commissioned to carry out studies for evaluating impact of indoor residual sprays, used for control of vectors of public health importance, on surrounding environment, including health of people residing in the areas in five states, viz. Mizoram, West Bengal, Karnataka, Haryana and Maharashtra in 2002. The salient findings indicated below point to some of the potential adverse effects of the spraying operations:

Monitoring of VBDS at PHC

- Directorate of NVBDCP uses chlorinated hydrocarbons, organophosphorus compounds and synthetic pyrethroids for control of vectors of public health importance.
- In general, each of the pesticides, before and after spray, has shown impact on both liver and kidney of humans. The cholesterol level has shown abnormal values in both males and females. This might be due to pesticide exposure and its impact on lipid metabolism function of the liver. However, effect of alcoholism and drug intake, which shows variation in biochemical parameters with respect to liver and cholesterol metabolism, can not be ruled out.
- Similarly, serum enzymes, viz. acid phosphatase, alkaline phosphatase, AST, and ALT were noted to deviate from normal ranges after exposure to pesticides. Also, serum urea, creatinine and bilirubin levels showed abnormal concentrations on exposure to pesticides indicates indicating abnormality in either kidney or liver, or both.
- Statistically significant rise in the concentrations of the pesticides has been noticed in the blood, milk, animal tissue and environmental samples, collected after the pesticides spray in majority of the cases. About 47% rise in the concentration of DDT was found in breast milk after spray, as compared to the same in blood of the female volunteers
- A few surface water samples did not satisfy the drinking water standards with reference to certain abiotic characteristics like nitrate, total iron, oil & grease and TDS.

b) **Insecticide Resistance by Vector Species**

Integrated vector control is universally accepted as an effective tool for vector borne disease control programme. Among the available vector control methods, chemical control is decisively superior over environmental and biological control strategies that have limited applicability in mitigating sporadic unpredictable outbreaks of vector borne

diseases. Deployment of chemical control embraces the whole gamut of strategies, which include indoor residual sprays (IRS), different types of larvicides, insecticide treated nets (ITN) and an ever-lengthening list of household insecticide formulations for personal protection measures. Vector control measures recommended and practiced by the NVBDCP relies largely upon situation-specific chemical control strategies to ensure effective control[18]. Insecticides belonging to different groups are in use for interventions namely IRS, larvicides and ITN. A major impediment to this programme has been the development of insecticide resistance by vector species, which necessitates frequent replacement of the existing insecticides in the control programme with new insecticides having adequate human and environmental safety.

4.20 **Identification and Assessment of Options for Avoiding, Mitigating Community Groups Which May be Adversely Affected**

Some of the options, apart from village level surveillance, mobilization of communities at the grass root level, promotion of IEC and BCC activities, involvement of NGOs and CBOs and vigorous supervision and programme management by the State and District Programme Offices, incentivising the performance of field health workers etc, resulting from discussions with the stakeholders including the Programme Office Staff are as follows:

Model Civic Byelaws: Under this act fine/punishment is imparted, if breeding is detected. These measures are already being enforced by some municipal corporations in India.

Discussion with District Programme Staff

Health Impact Assessments: Appropriate legislation should be formulated for mandatory HIA prior to any development projects/major constructions.

It is noted that in light of intersectoral linkages, the mitigation of adverse effects to tribal communities relates not only to provision of drugs and medicines, research on alternatives to insecticides and other preventive

[18] 'Environmental risk from insecticides use in agriculture far outweigh those of spraying for malaria control.. There is no doubt that the risk of increased death and morbidity from not using insecticides exceeds their potential negative public health and environmental impacts. Nevertheless, it is as important that these impacts are reduced as much as possible, especially in the rural areas' – World Bank. Ref: Environmental Management Plan, December 2006. National Institute of Malaria Research

measures such as bed nets and gambusia fish, but significantly to issues of governance and coordination both within the NVBDC programme of the health department and in external departments such as irrigation and water resources. Unless there is a grass-root movement with demand for effective delivery of services stimulated, it is unlikely that the programme would yield desirable results in the long run.

4.21 **Behavioral changes which may be required for tribal communities to use and sustain the benefits which may be provided through the project**:

Behavior Change Communication (BCC) campaign is crucial. The communities must be assured that VBDs are preventable diseases and empowered with the knowledge about mode of transmission, vector control options, availability of services in addition to correct treatment, so that timely and appropriate action is taken. Special campaigns will need to be carried out through mass media including local vernacular print media, radio and TV as well as outdoor publicity like hoardings, miking, drum beating, rallies, etc. Health education materials would be required to be developed and widely disseminated in the form of posters, pamphlets, handbills, hoardings. Inter-personal communication through group meetings, traditional / folk media particularly must be optimally utilized as part of influencing behavioural change. The current campaigns are seen to have greater emphasis on print media rather than culturally compatible communication addressing the tribal communities' ability to absorb the messages. This needs to be addressed. The nature of campaigns need to be flexible depending upon the communities and habitations as the demographic profiles, customs, knowledge, beliefs, practices etc of tribal communities vary to a degree relative to geographic locations. In effect, it is necessary to ensure cultural compatibility of the target groups in BCC.

A study[19] conducted earlier in Chhattisgarh indicated that about 28% of the community members who are supplied with a bed net are using them. This points towards the need for greater thrust in the BCC programmes for behavioural modification.

With respect to Kala-azar treatment, even with an easy to administer oral drug, miltefosine, it is a protracted affair stretching over twenty eight days, and involving twice daily administration of the (in case of adults more than 12 years ago) drug. The family has a direct stake in the successful completion of the treatment, as it is the family that bears the economic burden and possible economic deprivation resulting from the patient's illness. Thus the family must know the course of kala-azar treatment, its durations, precautions, and actions in the case of adverse reactions, if any. It must also know the implications of the complete course of treatment and also the difference between symptomatic cure and complete parasitological cure. This is all the more important, as there is a general tendency on part of the patient to discontinue treatment the moment there is symptomatic relief. IEC messages, which can be communicated to the patient and his attendant in the form of a short brochure, should reinforce the need for a complete course of treatment with the messages that Kala-azar is a life-threatening disease, which is caused by parasite introduced into the body of the patient from another

[19] Evaluation Report of EMCP of Achutha Menon Centre for Health Science Studies

person, through the bite of an insect and that this is possible only after the patient consumes the effective drug, miltefosine, over a minimum period of 28 days. The IEC messages should also emphasize that discontinuation of treatment midway is dangerous for the patient, as well as the community, as the parasites of kala-azar if not removed from the body of the patient will again cause the disease in him/her, and what is even worse, some of them be transferred, through the bite of the insect to other healthy individuals.

Indigenous cases of filaria have been reported from about 250 districts in 20 states/Union Territories in India including Chhattisgarh, Madhya Pradesh, Andhra Pradesh and Orissa. The data available is largely based on information received from the Filaria Control Units (FCU) and Filaria Clinics as well as limited sample surveys carried out over a number of years. The data, while confirming the widespread distribution of lymphatic filariasis in India, has many limitations and cannot be used for estimating the disease burden, *mf* carrier rates or *mf* densities which are required for planning and monitoring of impact. *Culex* species of mosquitoes transmit filaria in India The consultants have noted some cases of filaria in Madhya Pradesh and Chhattisgarh. With respect to philaria, laboratory confirmation of diagnosis is necessary to identify asymptomatic patients and those with non-specific symptoms. Laboratory diagnosis is required to identify endemicity of the area and to document impact of MDA. The decision on whether to continue annual rounds of MDA will depend on the laboratory results. The main diagnostic test is the examination of night blood smear collected from 8.30 p.m. to 12 midnight. The IEC activities should focus on awareness that Lymphatic Filariasis leads to life-long chronic complications such as lymphoedema and hydromel and that due to a damaged lymphatic system, patients with lymphoedema have frequent attacks of infections causing high fever and severe pain. The messages should also bring out that the persons having circulating microfilariae are outwardly healthy but transmit the infection to others through mosquitoes and that the persons with chronic filarial swellings suffer severely from the disease but no longer transmit the infection. The benefits of MDA should be explained and communicated. The IEC messages should be, if the whole community takes DEC and Albendazole, the microfilariae in the blood will be killed and the mosquitoes will no longer spread the infection. Thus, the disease progression will be halted. By consuming DEC and Albendazole, the next generation would be free from the disease and unless everybody takes the drug, the disease will continue to spread. DEC and Albendazole tablets are distributed free of cost by health workers or volunteers through house to house visits and booths/camps at schools, work places, health facilities, etc. during MDA campaign on National Filaria Day. The transmission of the disease can be interrupted if high levels of coverage in the affected communities are achieved on the same day annually for 5 to 7 years (life span of an adult worm). IEC should inform the communities that *Culex* breeds in polluted water and common breeding sites are wet pit latrines, septic tanks, barrow pits, cess pools, drains, disused wells, paddy fields, etc and that in addition to other measures, Guppy and gambusia fish could be put in unused wells and other water bodies. IEC should also bring out that for hydromel, only a simple surgery is required. Hydrocoelectomy `camps' can be considered in selected CHCs in areas where the prevalence is high. Publicity should be given to these camps so as to encourage patients to avail the services. Since the transmission of infection can be stopped in endemic areas by treating the entire eligible population living in filarial endemic areas with Mass Drug Administration (MDA) with Diethylcarbamazine (DEC) given once a year for 5-7 years i.e.

during the life span of adult filarial worm which gives birth to millions of microfilariae, this may be undertaken based on the available data on high risk areas. This will markedly reduce or stop the transmission of the infection by the mosquitoes to other healthy persons.

With respect to Dengue Fever (DF), an outbreak prone viral disease is transmitted by *Aedes* mosquitoes, there is a need to focus IEC on recognition of symptoms characterized by fever, headache, muscle and joint pains, rash, nausea and vomiting. Some infection results in Dengue Haemorrhagic Fever (DHF) - a syndrome that in its severe form can threaten the patient's life primarily through increased vascular permeability and shock. DF and DHF are caused by the four dengue viruses DEN 1, 2, 3 and 4, and Infection with one serotype provides life long immunity to that virus but not to the others. *DF is more* common in most of the urban areas on account of deficient water management, presence of nondegradable tyres and long-lasting plastic containers as well as increasing urban agglomerations and inability of the public health community to mobilize the population to respond to the need to eliminate mosquito breeding sites. Overhead tanks, ground water storage tanks and septic tanks are usually the primary habitats. However, the rural spread of *Aedes* is a relatively recent occurrence associated with expanding network of rural water supply schemes and other development projects without health impact assessments, scarcity of water with consequent water storage, changing lifestyle with improper use of air coolers and indiscriminate use of disposable containers, bottles, etc. Therefore, the key to control DF/DHF is adoption of a comprehensive approach by way of regular vector surveillance and integrated management of the *Aedes* mosquitoes through biological and chemical control that are safe, cost effective; and environmental management, legislations as well as action at household and community levels. Since *Ae aegypti* breeds in clean water, which is stored and used for household purposes, as such all the larvicides, which are safe, without any odour or colour, have residual effect with low mammalian toxicity and do not pose any health hazard should be used. Temephos, an organophosphate compound meets all the above mentioned requirements and this insecticide is being used under the public health programme (1 mg/litre).

Japanese Encephalitis (JE) is caused by a virus which is transmitted through the bite of infected mosquitoes. The main reservoirs of the JE virus are pigs and water birds (Ardeidae) and, in its natural cycle, virus is maintained through certain mosquito species in these animals. Man is an accidental host and does not play a role in JE transmission. JE surveillance in India is poor and actual disease burden is not fully known, therefore, intensified surveillance for JE is required. Surveillance is important to detect actual disease burden and early warning signals for predicting JE outbreak and to initiate timely effective control measures. This would be possible only if appropriate surveillance system is in place. The national level .JE surveillance guidelines developed by this Directorate for reporting Acute Encephalitis Syndrome cases (AES) /suspected JE cases and confirmed JE cases as per standard case definition are a right step in this direction. The surveillance is proposed to be carried out through sentinel sites. Three categories of sentinel sites/ health service providers (Sentinel Surveillance Sites with laboratory facilities, Sentinel Surveillance Sites without laboratory facilities; other Reporting Units) for the successful implementation of JE/AES surveillance activities have been identified. However, for prevention of the disease, various public health measures such as control of mosquitoes, protection

from mosquito bites by using mosquito nets, protective clothing and keeping the pigs (the animal reservoir of JE) away from human dwellings are advocated, besides JE immunization. Since there is no specific treatment for this disease, early symptomatic management is important.

4.22 Needs of tribal community groups

While the needs of general population coincide in a broad sense with those of tribal communities, some of the culture specific needs - though not always exclusive to tribal groups, have been noted. The salient needs emerging from tribal community groups are as follows:

- It was reported that whenever blood smear is found to be positive in a village, there is no effort to spray immediately. As per the guidelines, 400 square meter surrounding the house where the positive case is identified is to be sprayed. This is not always followed. Further, diagnosis takes more than 3 days and hence the disease can spread to other households. The tribal community members expressed speedier systems and better levels of service.
- Though the Anganwadi Workers are given malaria drugs, they are not much interested in distributing these drugs because their main function is to take care of maternal and child health care.
- There is a need for greater dissemination of information about the DDC/FTDs for treatment of fever and measures to instill confidence in them.
- IEC implementation strategies should be designed to align with the social and cultural setting of tribal communities for greater effectiveness.
- The PHCs work as dispensaries, where the doctors are appointed on contract basis. They are not actively involved in work related to malaria and other VBDs in the community. The priority programmes of the PHC are immunization, family planning and tuberculosis. They mainly treat the reported cases of malaria in the PHC.
- In many PHCs, the services of the laboratory technician are available only for a few days of the week, as the technician has to take care of two or more PHCs. This also led to delay in blood smear examination, diagnosis and treatment of malaria.
- Most of the PHCs do not have adequate infrastructure. Many of them operated from rental premises. There is not much space available in these PHCs to provide effective treatment and public health services.
- Fever clinics and fever detection camps should be conducted on a regular basis during the monsoon months with special emphasis to tribal areas.
- In respect of design of programme components for VBDs, there is a potential to maximize the project's benefits through the integration of Chikungunya also as a VBD for focus in view of the outbreaks reported in various parts of Madhya Pradesh and Chhattisgarh and across the country This may help ensure benefits flow to affected people.
- Community participation in the programme is still very weak. The grassroots level functionaries need to be better equipped to approach the community for a greater and a more effective participation in the programme. There should be people's involvement in the planning of VBD control programme at the village level. Village health committees are already envisaged under NRHM and with the help of local NGOs

/CBOs including faith based organizations, communities should be mobilized and involved in the planning and implementation of VBD control programmes. As envisaged under NRHM, activation of the Village Health Committees and involvement of a greater number of stakeholders particularly women and those from marginalized communities; appointing and training a woman from the community – ASHA, to play a key role in mobilizing people and supporting village health planning and action; enabling support to ASHA from the ANM, AWW, and village based functionaries of other departments; involvement of the ANM in village planning process made possible by provision of an additional worker at the sub center (depending on the states' need) would go a long way in enhancing the level of community participation. The details of the role envisaged for ASHA workers by NVBDCP is given at Annexure VI. The burden of tasks for ASHA workers needs rationalization for effective implementation of the envisaged tasks through redistribution of work to health functionaries at village level.

- The radical treatment is noted to be started as soon as the fever cases are identified. However this is done only in passive cases reported to PHCs. The doctors also reported non-compliance of treatment regimen. It was indicated that tribal community members tend to take low dosage and may resort to local herbal medicines. All these factors adversely affect the control of VBDs. The programme should evolve strategies to counter the current surveillance and treatment process in tribal areas.
- Focal spraying is done based on incidence. But often spraying is delayed due to lack of money available to pay the spray workers at the PHC level.

4.23 Demands of tribal community groups

The salient demands observed from Tribal Community Groups are given under:

- The interaction with tribal communities reveal instances of inadequate and no timely supply of insecticides to the sample villages and also that there are inadequacies in terms of space for storing insecticides and spraying equipments. At the PHC level the state governments are sought to ensure adequate infrastructure such as space and equipments. In areas where there is no government building, government may take on rent adequate space for the PHC. There are demands expressed to seek regular spraying, seasonal spraying and focal spraying.
- Demand for supply of impregnated mosquito nets to BPL households free of cost or at subsidized price in high endemic areas has been expressed. Others should be encouraged to acquire mosquito nets.
- It has been observed that supplies are generally adequate in the PHCs (covered during the field survey in Chhattisgarh and Madhya Pradesh) for detection and treatment of malaria cases. However, the distribution to the patients is not always assured. There were reported instances of inadequacy of medicines which have also been reported.
- The tribal communities also expect that the State Programme office should seek the help of the fisheries department to promote the larvivorous fish hatcheries in the districts.

- Spraying activities are undertaken with DDT, Malathion or synthetic pyrathroid as per availability. Insecticides are in some cases inadequate and not available timely.In low risk areas DDT is used and in moderately risk areas Malathion is used whereas in serious risk areas synthetic pyrethroids are sprayed. Synthetic pyrethroids are fast-acting insecticides and produce a quick knockdown effect against vectors and have been used for IRS in some high-risk areas and areas with triple resistant (DDT, HCH and malathion) vectors and also in some areas to tackle malaria outbreaks and epidemic situations. Malathion is resisted by the people because of the stain it leaves behind on walls and furniture.
- It is found out that only people of the upper class and middle class use bed nets. Malaria workers believe that even if bed nets are freely distributed, unless serious promotional activities are taken up through NGOs, lower class people may not use bed nets properly. This is reflective of the current demand situation.
- PHCs should identify water sources and biological control measures be used on the basis of the mapping of the water sources in the area. This is a seasonal planned activity and may be highly successful.
- The PHCs should have adequate stocks of chloroquine, primaquine and sulfadoxineas well as vials of quinine injection.
- Overburden of work due to allotment of excess population was cited by most of them as the reason for MPWs to be irregular in their domiciliary visits. During focus group discussions, it was revealed that MPWs collect blood slides and give treatment in case of fever. Only a small proportion refers the cases to doctors without giving treatment. Nearly half of the community respondents revealed that MPWs did nothing to educate the people regarding illness (similar situation reported to exist with DDC/FTD holders) and express their need for assistance on this issue.
- There should be systems to ensure that the existing gap of 5-7 days (in some cases) between slide collection and administration of radical treatment should be cut down.

4.24 Identification and Evaluation of Measures to Avoid Adverse Effects to Ensure Indigenous Peoples Receive Culturally Appropriate Benefits Under the Project

4.24.1 **Role of IEC materials**: IEC materials in Madhya Pradesh, Chhattisgarh, Andhra Pradesh and Orissa are generally professionally produced involving private agencies including NGOs. The consultants have however noticed the prevailing limitation in the outreach of the IEC material Particularly in the isolated and remote tribal villages. Materials used include poster, hoardings, stickers, notices, and pamphlets, audio and video programmes. The IEC material meant for tribal villages should not only be in the local language but should be prominently written in tribal dialect with emphasis on pictorial depiction to increase the visual impact of the campaigns to the target groups. However, the materials are primarily meant for prevention and control of malaria and not aimed at integrated control of vector borne diseases under the NVBDCP. In addition to these professional materials, local media such as wall writings, wall paintings and folk media are also used, though not as extensively as required on the lines of polio campaigns. These campaigns should keep in view the culturally and socially appropriate methods and traditional practices and beliefs of tribals which vary from place to place and community to community even within a given geographic region. It is noted

that Mahila Mandals and religious ceremonies can be a media for carrying the IEC messages related to VBDs. Some of these are used at different levels from state to village, but greater emphasis and focus would be needed. It is noted that in addition to central government IEC materials, the state government has its own IEC materials which are used together with folk media to educate the people about malaria. There is no holistic approach to IEC in terms of prevention and control of VBDs demonstrated in the sample villages covered. There is are major lacunae with respect to the influencing behavioural change communication and in the area of spread of knowledge and awareness through IEC at various levels in the hierarchy of state health administration in addition to civil society, panchayat functionaries, and the tribal communities themselves as established through the field level interaction and focus group discussions. There is a need to improve the outreach to the tribal communities through IEC with benchmarked activities and achievements with periodical assessment of their effectiveness. It is seen that public announcements, drama/street plays/puppet shows, hospital and village meetings, health melas, songs etc could be a better means of communication for IEC than print media in view of the low literacy levels. The prime sources of information continue to be friends/relatives and hospitals.

Focus Group Discussion

No instances of Kala-azar cases have been reported during the consultations at field interaction in the sample villages visited by the consultants. The tribal community members interacted with in Madhya Pradesh and Chhattisgarh were not aware that the disease is spread by the female sandfly, *Phlebotomus argentipes* that carries the parasite. None of the respondents could mention any symptoms of the disease such as fever, enlarged abdomen, general weakness, headache, dizziness, weight loss, sweating and diarrhoea with some characteristic symptoms being blackening of skin and enlargement of spleen and lymph nodes.

With respect to Kala-azar treatment, even with an easy to administer oral drug, miltefosine, it is a protracted affair stretching over twenty eight days, and involving twice daily administration of the (in case of adults more than 12 years ago) drug. The family has a direct stake in the successful completion of the treatment, as it is the family that bears the economic burden and possible economic deprivation resulting from the patient's illness. Thus the family must know the course of kala-azar treatment, its durations, precautions, and actions in the case of adverse reactions, if any. It must also know the implications of the complete course of treatment and also the difference between symptomatic cure and complete parasitological cure. This is all the more important, as there is a general tendency on part of the patient to discontinue treatment the moment there is symptomatic relief. IEC messages, which can be communicated to the patient and his attendant in the form of a short brochure, should reinforce the need for a complete course of treatment with the messages that Kala-azar is a life-threatening disease, which is caused by parasite introduced into the body of the patient from another person, through the bite of an insect and that this is possible only after the patient consumes the effective drug, miltefosine, over a minimum period of 28

days. The IEC messages should also emphasize that discontinuation of treatment midway is dangerous for the patient, as well as the community, as the parasites of kala-azar if not removed from the body of the patient will again cause the disease in him/her, and what is even worse, some of them be transferred, through the bite of the insect to other healthy individuals.

A few cases of filaria have been reported during the course of field level interaction of consultants in the sample villages of Madhya Pradesh and Chhattisgarh. Indigenous cases of filaria have been reported from about 250 districts in 20 states/Union Territories in India including Chhattisgarh, Madhya Pradesh, Andhra Pradesh and Orissa. The data available is largely based on information received from the Filaria Control Units (FCU) and Filaria Clinics as well as limited sample surveys carried out over a number of years. The data, while confirming the widespread distribution of lymphatic filariasis in India, has many limitations and cannot be used for estimating the disease burden, *mf* carrier rates or *mf* densities which are required for planning and monitoring of impact. *Culex* species of mosquitoes transmit filaria in India. With respect to philaria, laboratory confirmation of diagnosis is necessary to identify asymptomatic patients and those with non-specific symptoms. Laboratory diagnosis is required to identify endemicity of the area and to document impact of MDA. The decision on whether to continue annual rounds of MDA will depend on the laboratory results. The main diagnostic test is the examination of night blood smear collected from 8.30 p.m. to 12 midnight. The IEC activities should focus on awareness that Lymphatic Filariasis leads to life-long chronic complications such as lymphoedema and hydromel and that due to a damaged lymphatic system, patients with lymphoedema have frequent attacks of infections causing high fever and severe pain. The messages should also bring out that the persons having circulating microfilariae are outwardly healthy but transmit the infection to others through mosquitoes and that the persons with chronic filarial swellings suffer severely from the disease but no longer transmit the infection. The transmission of the disease can be interrupted if high levels of coverage in the affected communities are achieved on the same day annually for 5 to 7 years (life span of an adult worm). IEC should inform the communities that Culex breeds in polluted water and common breeding sites are wet pit latrines, septic tanks, barrow pits, cess pools, drains, disused wells, paddy fields, etc and that in addition to other measures, Guppy and gambusia fish could be put in unused wells and other water bodies. IEC should also bring out that for hydromel, only a simple surgery is required. Hydrocoelectomy `camps' can be considered in selected CHCs in areas where the prevalence is high. Publicity should be given to these camps so as to encourage patients to avail the services. Since the transmission of infection can be stopped in endemic areas by treating the entire eligible population living in filarial endemic areas with Mass Drug Administration (MDA) with Diethylcarbamazine (DEC) given once a year for 5-7 years i.e. during the life span of adult filarial worm which gives birth to millions of microfilariae, this may be undertaken based on the available data on high risk areas. This will markedly reduce or stop the transmission of the infection by the mosquitoes to other healthy persons. Recognizing the physical suffering, gross disfigurement and consequent socioeconomic impact due to lymphoedema (particularly limbs), and the fact that simple foot hygiene can result in prevention of repeated attacks of acute adenolymphangitis (ADL) and progression of lymphoedema, efforts should be made to teach patients and their families about skin care and simple measures of hygiene. It is also realized that a disability alleviation strategy is needed for lymphatic filariasis patients who suffer from several urogenital

manifestations, the burden of which is larger than that due to lymphoedema of limbs. Hydrocelectomy at identified hospitals/ CHCs to alleviate the sufferings of the patients should therefore be augmented, together with capacity building of CHCs/PHCs is needed for carrying out hydrofoil operations.

Although not many cases of Dengue Fever (DF) have been cited in the field level interaction by the consultants in the sample villages of Madhya Pradesh and Chhattisgarh under coverage, it is not certain that the prevalence of such cases is accurately captured by the records maintained by health administration, given the paucity of necessary laboratory facilities at PHC level. With respect to Dengue Fever (DF), IEC materials need to create awareness that an outbreak prone viral disease is transmitted by *Aedes* mosquitoes. There is a need to focus IEC on recognition of symptoms characterized by fever, headache, muscle and joint pains, rash, nausea and vomiting. Some infection results in Dengue Haemorrhagic Fever (DHF) - a syndrome that in its severe form can threaten the patient's life primarily through increased vascular permeability and shock. DF and DHF are caused by the four dengue viruses DEN 1, 2, 3 and 4, and Infection with one serotype provides life long immunity to that virus but not to the others. DF is more common in most of the urban areas on account of deficient water management, presence of nondegradable tyres and long-lasting plastic containers as well as increasing urban agglomerations and inability of the public health community to mobilize the population to respond to the need to eliminate mosquito breeding sites. Overhead tanks, ground water storage tanks and septic tanks are usually the primary habitats. However, the rural spread of Aedes is a relatively recent occurrence associated with expanding network of rural water supply schemes and other development projects without health impact assessments, scarcity of water with consequent water storage, changing lifestyle with improper use of air coolers and indiscriminate use of disposable containers, bottles, etc. Therefore, the key to control DF/DHF is adoption of a comprehensive approach by way of regular vector surveillance and integrated management of the Aedes mosquitoes through biological and chemical control that are safe, cost effective; and environmental management, legislations as well as action at household and community levels. Since Ae aegypti breeds in clean water, which is stored and used for household purposes, as such all the larvicides, which are safe, without any odour or colour, have residual effect with low mammalian toxicity and do not pose any health hazard should be used. Temephos, an organophosphate compound meets all the above mentioned requirements and this insecticide is being used under the public health programme (1 mg/litre).

4.24.2 **Role of community volunteers:** In Chhattisgarh, community volunteers from hamlets are selected and trained for malaria work. They play a crucial role at the field level in terms of identifying fever cases, collecting blood samples and providing presumptive treatment. There are variations in the number of malaria link volunteers per PHC and it was observed that there does not seem to be any norm for the appointment of number of malaria link worker per PHC. There is a need to review and revamp the current arrangements in this regard. Since the role of male health workers has been integrated with the general health systems it is necessary to expand and strengthen the cadre of MLVs for active surveillance. They should be given targets for collection of slides as they can provide the greatest support for VBD related surveillance at the grass root level.

4.24.3 **Role of NGOs:** The role of the NGOs is found to be minimal and insignificant in the sample villages covered in Madhya Pradesh and Chhattisgarh as well as in Andhra Pradesh and Orissa. Efforts are being made in Orissa to involve NGOs on a large scale including their association at PHC/DDC/FTD level. Integrated Tribal Development Agency, Andhra Pradesh has deployed four mobile medical clinics to extend, inter alia, VBD related services for isolated areas together with payment of honorarium to community health workers in inexcessible areas. The role of NGOs in anti malaria work is limited to participation in malaria month. There is no significant role observed of NGOs in preventive measures of VBDs like establishing, maintaining and distribution of larvivorous fish. The State Programme officials will need to motivate NGOs to get involved in areas like IEC, and working with volunteers and community and provision of financial resources for civil society engagement should be integrated into the project design. Field based data from the private / NGO sector should be incorporated into the District / State MIS. By and large, provision of VBD related services through hospital/mobile services by NGOs have not taken root in the states under coverage, except to some degree in Andhra Pradesh. There is a significant potential for involvement of mission/faith based hospitals in the prevention and control of VBDs which at present is not extensive. However, care must be taken to ensure that such institutions do not misutilize the forum to propagate other agenda. What about hospitals/mobile services provided by NGOs in broad sense mission/faith-based hospitals

4.24.4 **Inter-Sectoral collaboration:** The extent and level of inter-sectoral collaboration is not seen to be coordinated and consistent both at the State and District levels in Madhya Pradesh and Chhattisgarh. It was observed that fish hatcheries are developed in some instances through the good offices of the Fisheries Department. Anganwadis under ICDS invariably work as drug distribution centres (DDC). Anganwadi Workers may be trained to identify fever cases and to give presumptive treatment in coordination with social welfare department. In some areas, tribal department is involved in providing facilities like providing space for clinics. Significant improvement in linkages with water and sanitation authorities will be needed to ensure that there is no water logging through public health engineering interventions. Panchayat Raj institutions (PRI) are seen to play an important role in IEC, organizing health camps, supporting malaria workers with transport and increasing acceptance for spraying operations. In Chhattisgarh, at the grass-root level, health workers liaison with Panchayat Department to solicit their support in influencing the community in m

Fish Hatchery

PRIs participate in planning community based activities like fever surveys. There is very good cooperation from Water Department/Public Health Engineering. The Fisheries Department of the Govt. helps the Health Department in developing and enlarging the large network of larvivorous fish hatcheries and in the distribution of the larvivorous fish. They supply fish for the various hatcheries. The State had visiting study teams from Orissa and UP for assessment and learning from the experience of Chattisgarh. The Forest Department and the Tribal Welfare Department of the Govt. are also involved at the District and PHC level in various malaria control activities. They support the malaria programme in planning, evaluating and in providing additional resources like money, bed nets and transportation. These experiences and activities need to be documented for potential replication. Larval density & Mapping of breeding sites could be another approach to help identify the high risk areas for appropriate interventions. This will also require inter sectoral coordination.

4.24.5 **Public-Private Partnership (PPP):** Private sector is not involved significantly in the control of malaria and other vector borne diseases. There is no evidence of the attempts of Government in trying to rope in the private sector in VBD prevention and control. Networking with RMPs, Private Clinics for sharing reports of malaria incidence and deaths would be important. Organization of camps through public/private/NGO partnerships for the treatment of community owned bednets, should be extended to all districts wherever operationally feasible. There is a need to integrate PPP in the programmatic interventions to enhance the effectiveness of outreach to the tribal communities. The schemes devised for collaboration with District Fish Hatcheries.

NGOs, FBOs, CBOs and Panchayat envisaged under guidelines for NVBDCP should be implemented as part of PPP. These are:

1. Provision of early diagnosis and prompt treatment (EDPT) -
    a. Scheme 1: Provision of outreach services – Drug Distribution Centre (DDC), Fever Treatment Depot (FTD)
    b. Scheme 2: Provision of microscopy and treatment services
    c. Scheme 3: Hospital based treatment and care of severe and complicated malaria cases

2. Integrated vector control –

    a. Scheme 4: Promotion of insecticide treated bed nets, insecticide treatment of community owned bed nets and distribution of insecticide treated bed nets in selected areas
    b. Scheme 5: Promotion of larvivorous fish
    c. Scheme 6: Indoor Residual Spraying (IRS)

Awareness generation/Behaviour Change Communication will be integral part of all the above-mentioned schemes. All these schemes will be implemented as per the policies and guidelines of NVBDCP. All these schemes will be applicable in States where the World Bank supported Enhanced Vector Borne Disease Control Programme (EVBDCP) and the Global Fund for AIDS/Tuberculosis/Malaria (GFATM) supported Intensified Malaria Control Project (IMCP) are in operation.

While presumptive treatment is advocated in areas, where definite diagnosis of malaria can not be made, ideally, correct diagnosis of the type of malaria through microscopy is highly recommended for complete radical treatment with correct doses of anti-malarial drugs in accordance with the drug policy of NVBDCP. If this is done on a large scale, it can actually cut down transmission and hence act as a public health measure. As part of PPP, small dispensary/mobile clinic already being run by organizations can serve as a malaria microscopy and treatment centre. It can provide malaria microscopy and radical treatment facilities free of charge in remote areas at least 5 km away from any Government Health Centre with similar facilities. The

organization should however ensure that no charges are levied on patients for any service rendered.

The organizations running hospital should be encouraged to provide hospital-based treatment and care to severe and complicated malaria cases as per NVBDCP guidelines and follow-up of patients on treatment.

There is also a significant scope for appropriate organizations to be promoted to undertake the use of larvivorous fish as biological vector control measure. They will enlist the water bodies that are potential breeding grounds of mosquitoes in their catchment area and undertake seeding of large perennial water bodies, unused wells in collaboration with the DMO/DVBDCS (as per the guidelines of NVBDCP on use of larvivorous fish for vector control). These organizations will construct and maintain hatcheries, which will be positioned according to the need, epidemiological necessity and lack of existence of State/district/block/PHC level hatcheries.

NGOs/CBOs/FBOs/Panchayats should be outsourced as part of PPP to develop village level micro plans and undertake Indoor Residual Spraying operations.

Social marketing can play a crucial role in enhancing public-private partnership related to provision of products and services for health care in general and particularly in respect of prevention and control of VBDs. Social marketing has the potential to evolve as a tool in response to health improvement planning. Planners at the grass-roots should start with the epidemiological and demographic data for the district (beginning with the block, or village) and determine the unmet need, as manifested by local morbidity information, coupled with the express priorities of the community itself. Any health improvement plan is an attempt to match service priorities with the resources available. For this reason, any programme for social marketing will first respond to locally specific strategies that may have been identified, and then develop partnerships and options for resource mobilization. The actual health problems of the population being served will be reflected in the basket of products and services being provided through social marketing, implemented on the basis of professional market research findings, in a coordinated and cost-effective manner.

The key objectives of social marketing programme[20] should be as follows:

- To promote the acceptability and adoption of socially beneficial, voluntary health behaviour.
- To improve access to, and availability of a wide range of quality health information, products and services with a public health benefit, for the rural, under-served, low-income and vulnerable populations.
- To provide more affordable health care products and services, with more equitable distribution so as to reach the low income groups.
- To sustain increases in preventive and curative use of products and services inter alia, in respect of VBDs

[20] Ref: National Strategy for Social Marketing, Department of Family Welfare, Government of India, Draft, November 2001

- To adequately research the segmented market for products and services for basic and essential health care, as well as consumer preferences in respect of product attributes.
- To decentralise the social marketing programme in the field, and to mainstream the coalition for private – NGO - public partnership maybe through a Consortium, that has the potential to catapult the social marketing programme into a national movement to improve availability, access and affordability of basic health care products including for VBDs.
- To ensure that the essential health services reach low income groups and the "economically active" poor people, through an appropriate public - private mix of financing and provisioning so that they do not pay exorbitant sums for quality health care.
- To expand demand among priority target groups through local, innovative, research-based and professional communication strategies

The operational strategies should, interalia, address certain critical issues: In order to expand the market in rural areas and urban slums, Social Marketing Organisations (SMOs) should be allowed to use Government rural health infrastructure and other channels like ICDS, in addition to their own private distribution networks. Participation of the private sector should be promoted and public-private partnership should be encouraged at all levels, for a wider distribution of social marketing products. Participation of private health providers in the delivery of standard preventive services should be solicited, using commercial franchising techniques. Government subsidies should gradually decrease for urban markets and non-essential products, so that public subsidy is targeted on the development of new markets (rural areas) and support of priority products. Specific interventions and free distribution should be designed for low-income (e.g. urban slums) and high-risks groups. Benchmarking funding and performance monitoring and evaluation mechanisms should be introduced. An ethics code for social marketing will also need to be developed and repression measures proposed to ban unfair marketing practices. The SMP needs to ensure that people get the products and services that they need for basic and essential health care including prevention and control of VBDs, at reasonable cost to themselves, and to the Government. The SMP needs to provide multiple choices, through multiple products and services, at multiple delivery points, so as to optimise outreach. The programme should not remain needlessly over-centralised and government directed so as not to lose on opportunities for expansion and diversification, with neither appropriately trained human resources nor administrative capacity to provide appropriate direction and management.. The SMP should not remain confined to the urban and peri - urban areas, but must reach out quickly and massively to rural households. Subsidies should be re-directed accordingly.

Partnership between the for - profit commercial sector, the non - profit NGO sector, the panchayati raj institutions and government is essential for the country-wide distribution of social marketing products. Each of these sectors has for the large part, evolved on its own, with scant reference to each other's networks, exposure and experience. The first step towards building this coalition is to establish and institutionalise channels for effective dialogue between these entities, and at all levels. Each should define the type of networking / partnership they envisage, articulate those objectives which are

common, define a commitment of resources, and then proceed with details of project design and mechanisms for delivery. Effective partnership can promote joint planning, a more rational deployment of resources, the use of multiple distribution networks, a diverse array of competencies, and finally, but most significantly, may lead to multiple sources of funding. NGOs will contribute their wide-ranging experience at the grassroots, and will be particularly sought after for their flexibility and acceptability at local levels. Government has in position a widely dispersed network of rural health infrastructure. NGOs and social marketing organisations should seek to develop public – NGO – private partnerships for the delivery of health care products and clinical and non – clinical services through the existing and widespread public health infra-structure. This will be vastly supportive of the effort to reach out to communities. It will help address the unmet need for health care products and services including those relating to VBDs, and expand the market.

It is noted that as governments review their role in ensuring the provision of health care, there is a shift from provision to purchasing services from private providers, who may include doctors, other health professionals, health centres, hospitals or any combination of these. Where there are target groups who do not have access to basic and essential health care services, the accreditation of specific services by health care providers from the public, private and the NGO sectors is an effective way of increasing coverage and addressing unmet needs. Health care providers may be affiliated into a network, and provided training in the delivery of a product / service in accordance with a stipulated minimum standard. The skills of providers may be evaluated and similarly, the premises where these services are provided may be externally assessed and accredited inasmuch as they comply up front with norms and standards. A key challenge is to motivate the private sector to contribute to national health goals by providing good quality basic and preventive health care targeted at the low - income and vulnerable segments of the population. *Social franchising* can help bridge this gap. Social franchising consists of developing networks of private sector and NGO run clinics, contracted to offer health information and counselling, health products, and health care services. The network would use commercial franchising techniques, and focus on the twin objectives of enhancing equity of access to health care and a high level of financial sustainability. The franchised clinics would promote efficiency, coverage, and utilisation of the country's overall primary health care delivery system. The social franchisee would be a private-NGO-public partnership, which will operate as a network of franchised clinics involving formal and informal health care providers. The SMP will, apart from distribution of medically treated nets through the franchises, consider providing RCH services.

4.24.6 **Drug resistance[21]:** A few cases of drug resistance have been reported during the interaction with tribal communities but in view of the lack of verifiable data, it is not clear as to the degree and frequency of drug resistance in the districts covered in Madhya Pradesh and Chhattisgarh. In Chhattisgarh, the documented chloroquine resistant areas are Wadraftnagar Block of Surguja District, Pondiuproro Block in Korba District, Gariband Block of Raipur District, Pakhanjoor Block of Kanker District. Research on the

[21] High treatment failure to chloroquine has been detected in 241 PHCs of 57 districts in 19 states in the country and revised drug policy is being followed in all these areas using second line of treatment as per the NVBDCP malaria drug policy.

particular vector and its bionomics and physiological aspects of resistance to insecticides may need to be undertaken. In this context, research capacity of entomologists/biologists in the states may also be enhanced. Operational Research studies on drug resistance trends are among the measures advocated. To combat the drug resistant in malaria, the NVBDCP drug policy recommends the use of combination therapy i.e Artesunate plus Sulfadoxine Pyrimethamine as a second line of treatment for *P.falcipuram* cases in chloroquine resistant areas.

4.24.7 ***Consultation with tribal communities groups through community dialogue:*** There is no evidence of processes to ensure significant level of consultation with tribal communities through community dialogue and their active involvement. Special efforts are required to be made to tackle the pre-monsoon peak of malaria and other VBDs in the tribal areas with closer supervision and surveillance measures and with the active participation of tribal community groups. Special efforts are also required to be taken to tackle preventive and diagnostic issues related to VBDs with the help of the community volunteers from the tribal area itself. It is also necessary to strengthen micro planning / area planning activities which are at its infancy. This will include preparation of PHC wise micro plan including identification of villages to be targeted for IRS with appropriate insecticide and preparation of PHC-wise requirement of insecticide and spray equipment, training of spray workers, supervisors on dosage of insecticide, use of spray equipment, preparation of suspension, etc.

4.24.8 ***Health risks from development projects:*** Health risks from development projects resulting from vector-borne diseases are triggered by development of water resources projects in the vicinity of project villages (such as irrigation and reservoirs). Such developments change the distribution and flow of surface waters, creating a favorable habitat for vector breeding. Human exposure to biting insects or contaminated waters provides the conditions necessary for an increased health risk. Expensive mitigation measures then take the form of vector control through chemical application. Decisions about such development projects should require a health impact assessment procedure which could help reduce vector populations or prevent exposure. There is a need for interdepartmental coordination on this issue. This procedure, if advocated at the State level and adopted by the relevant interdepartmental agencies, would assist in the forecasting of the vector-borne disease implications of water resources development projects, covering the sub-sectors of irrigated agriculture and multipurpose reservoirs, assists the State Programme office to identify:

- the specific vector-borne disease hazards which occur regionally and in different habitats;
- the vulnerable communities; and
- the capabilities of the health service to monitor, safeguard, and mitigate the vector-borne diseases.

Annexure-I

Check-list for interviews/focus group discussions at the village level - *Social and Beneficiary Assessment (SABA) for Indigenous People Development Plan Under the World Bank Assisted Vector Borne Disease Control Programme*

State:		**Village:**	
Panchayat:		**Block:**	
District:			

Village level General Observations:

1.1 Type of Dwellings:

1. Kutcha (thatched roof with mud plastered walls)	2. Semi Pucca (tinned roof with mud plastered walls)
3. Pucca (Tinned roof with Cemented walls)	4. Others (Specify)

1.2 Pattern of Garbage Disposal:

Give a brief description where majority of the villagers dispose their garage

Tick mark where majority disposes the garbage:

1. Near the house	2. Far from the house	3. Private arrangement for garbage disposal
4. No public arrangement/ dumping the wastage outside the house	5. Other (specify)	

1.3 **Drainage:**

Give a brief description of the drainage and sewage pattern in the village

Put tick mark in drainage/sewage pattern of the village

1. Open & stagnant	2. Open & running	3. Covered drain

4. No drainage facility	5. Partially covered	6. Other (specify)

1.4 Whether the following facilities are available in the village

General infrastructure (Tick Mark)		**Describe briefly** (if not available distance to nearest facility)
1	Pucca road(if not available distance to nearest facility)	
2	Primary school	
3	PCO/ telephone connection	
4	Private clinic/nursing home	
5	Any vehicle available for emergency transport	
6	Ayurveda/ Homeo clinic	
7	Hand pump/ tube well	
8.	Taps or other source of drinking water	

1.5 Health care and developmental facilities in the village:

Health Facilities (Tick Mark)		
1	Hospital	
2	PHC	
3	Health Sub-Center	
4	Dispensary	
5	Ayurvedic Dispensary	
6	Private Health Institutions	
7	Private Doctor	
8.	DDC(Drug Distribution Centers)	
9	FTD(Fever Treatment Depots)	
10	Anganwadi Center	
11	Others(specify)	

Animal Health Facilities (Tick Mark)		
1	Veterinary Hospital	
2	Veterinary Dispensary	
3	Other (Specify)	
Other Social Welfare and Education Facilities		
1	Library	
2	Mahila Mandal	
3	Youth Mandal	
4	SHGs	
5	Temple	
6	Secondary School	
7	Mosque/ church(Specify)	
8	Cooperative Societies	
9	Other (Specify)	

1.6 Was there any outbreak of VBDs in the village in the past 5 years. If yes mention the year, name of the disease, and number of deaths

1.7 How do majority of the people store drinking water in this village?

1.8 Is there any village level health worker in your village, mention separately Government and non Government and what do they do in the village?

1.9 What is the major cause of death in the village?

1.10 What percentage of households use bed nets provided by Government

1.11 Whether the villagers are ready to pay for the treatment of bed nets?

1.12 How do the villagers take part in the anti malaria campaign?

1.13 What percentage of households have Indoor Residual Spray?

1.14 What are the procedures adopted by the villagers to control mosquito breeding?

1.15 How often the ANMs or government doctor visit the village in a month?

1.16 What is the attitude of Government health care providers in the village?

1.17 Names of the major castes/tribes in the village.

Castes:

Tribes:

1.18 Mention the hygienic and un-hygienic practices of the villagers?

Section I: Vector Borne Disease Related Awareness & Practices

1.1 What among the following are the most frequently suffered diseases in your family or neighbourhood?
(1) Malaria (2) Dengue (3) Japanese Encephalitis (4) Kala-Azar
(5) Philaria

1.2 If yes, do you know what the symptoms of the disease/s are?

S.No.	Symptom	Tick the Response				
		Malaria	Dengue	Japanese Encephalitis	Kala-Azar	Philaria
1.	High fever					
2.	Shivering					
3.	Vomiting					
4.	Profuse sweating of the body with decrease in temperature					
5.	Other 1 (specify)					
6.	Other 2 (specify)					
7.	Other 3 (specify)					
8.	Other 4 (specify)					

1.3 Do you know how the disease/s spreads?
(1) Yes (2) No

1.3 If yes, ask how the disease/s spreads.

S.No.	Symptom	Tick the Response				
		Malaria	Dengue	Japanese Encephalitis	Kala-Azar	Philaria
3.	1 (specify)					
4.	2 (specify)					
5.	3 (specify)					
6.	4 (specify)					

1.4 Are the disease/s curable?

Disease	Curable	Not Curable
Malaria		
Dengue		
Japanese Encephalitis		
Kala-Azar		
Philaria		

1.5 What are the main places in which malaria spreading mosquitoes breed? (Do not read out the options, give clue in case of ignorance)

S.No.	
1.	In agricultural fields
2.	In unused wells
3.	Stagnant water
4.	Open tanks of water
5.	Discarded tyres
6.	On the roof-tops of buildings
7.	Unclean toilets and stagnant drains/naala/coolers

1.6 Do you know how mosquitoes can be prevented from breeding? (Tick their responses in the following table. Do not read out the options, give clue in case of ignorance)

S.No.	Awareness of Preventive Measures	Tick	Measures Followed (Tick)	Specific Reasons for not taking the measures if any
1.	Put a proper lid on the water tanks			
2.	Fill up the pits near the house			
3.	Keep the drains/naala clean			
4.	Clean the coolers once in a week(urban areas only)			
5.	Keep the water pots covered			
6.	Do not let stagnant water gather in and around the house			
7.	Dry up the water in cooler when not being used (urban areas)			
8.	Make a pavement in the vicinity of the hand pump			
9.	Spray insecticides			
10.	Use of medicated mosquito nets			
11.	Spray kerosene oil over stagnant water			
12.	Use of larvivorous fish			
13.	Use of biolarvicides for control of mosquito breeding			
12.	Others (specify)			

1.7 Are you aware of any measures of the Government for creating awareness among people against any of the above diseases?
(1) Yes (2) No (3) Don't Know/Can't Say (4) No response

1.8 If yes, tell us any measures being taken to prevent the above diseases.

Disease	Measures
Malaria	
Dengue	
Japanese Encephalitis	
Kala-Azar	
Philaria	

1.9 Has anyone suffered from any of the diseases, when and what kind of treatment was taken from whom?

S.No.	Who (Name and Age)	Disease suffered	When (how long ago in months or years)	What was the treatment given				Where/by Whom (from government or private hospital or medical shop or any other)	Reason for preference
				Blood smear examination	Medicine was given or not	Cost spent on the treatment	Full course treatment was taken or not		
1.									
2.									
3.									
4.									
5.									

1.10 Did you take any measures on your own to prevent the diseases?
(1) Yes (2) No

1.11 If yes, what measures did you take to avoid mosquito bits?

Disease	**Measures**
Malaria	
Dengue	
Japanese Encephalitis	
Kala-Azar	
Philaria	

1.13 Was there any spraying done by the local health functionaries in your locality in the last six months?
(1) Yes (2) No

1.14 General details of insecticide spraying activities in the households (Tick the responses in the table below).

S.No.	Options	Tick the Answer
1.	Informed about the spraying in advance	
2.	Got all the rooms and walls (both inside and outside) sprayed	
3.	Did not get the spray as the house was locked	
4.	Got spray only on the walls outside the house, did not allow spraying inside the house	
5.	Spraying was not done by the health provider	

1.15 What do you do to avoid mosquitoes when you sleep? (Tick the Answer)

S.No.	Sleeping Habits	Indoors	Outdoors
1.	Fully cover with bed sheet		
2.	Sleeping in mosquito net		
3.	Regular usage of mosquito repellants on body before sleeping		
4.	Don't take any precaution		
5.	Others (Specify)		

Section II: Exposure to Current IEC material/activities

2.1 What are the current information sources from where you have known about vector borne disease related issues?

Medium	Disease/s	How Recent (in Months)	Do you find the content easily understandable? (Yes/No)	Preferred source of information (Check)
TV				
Radio				
Cinema Hall				
Newspaper/Magazine				
Hoarding/Placard/Poster/Billboard/Wall Writing				
Hand bills/Pamphlets/Booklets				
Documentary films				
Public meetings				
Public Announcements				
Drama/Skits/Street Play/Puppet Show/Health Exhibitions				
Hospital/Help lines				
Friends/Relatives				
Others (Specify)				
Don't Remember				

2.2 Did anyone in the past one year visit your home to make your family aware on any vector borne disease related issues or preventive measures?
(1) Yes (2) No (3) Can not recall

2.3 If yes, who visited? (Multiple responses possible, circle the responses)

Government Doctor	01
Private Doctor	02
Doctor/Nurse in Mobile Clinic	03
Village Health Worker/Nurse from Government Hospital/Clinic	04
Visiting Health Worker from NGOs	05
Anganwadi Workers	06
Friends/Peers/Family Members	07
Others (Specify)	08
Cant remember	09
No response	10

2.4 Did you ever attend/participate in any meeting or melas like malaria campaigns on vector borne diseases in your community?
(1) Yes (2) No

2.5 What information would you like to know or gather on measures/precautions to be taken to prevent the vector borne diseases?

S.No.	Information sought
1.	
2.	
3.	
4.	

2.6 Name any NGO/s which have approached your household to provide information on vector borne disease related issues in the last two years.

S.No.	Name	Location/Address	Service provided	Detail of IEC material provided

Section III: Media Habits/Information Sources

3.1 What is the estimated ownership of radio and television of the tribal community in the village?

Radio ownership: _____ % TV ownership: _____ %

3.2 How often does the tribal community listen to radio and view the television on an average in a day/Sunday (holiday)? (in Hours/Day)

Radio: (a) Average/Day _____ (b) Holiday _____
TV: (a) Average/Day _____ (b) Holiday _____

Code: (1) < 1 hour (2) 1-2 hours (3) 2-4 hours (4) > 4 hours
(5) Nil

3.3 Which is the most widely read newspaper in your area?
Newspaper: _____ Language: _____

3.4 During which time slots are generally the most widely listened to/watched by the tribal community in so far as Radio and TV are concerned?

Radio: Time Slots _____ _____
TV: Time Slots _____

3.5 Which TV channels are the most widely watched and popular in your households?

(a) _____ (b) _____
(c) _____ (d) _____

3.6 What are the programmes the tribal community generally listens to/watch on Radio/TV (circle top two slots)

Programmes	Radio	Television
News	1	9
Drama/Serials	2	10
Film Songs	3	11
Advertisements	4	12
Discussion on Health Issues	5	13
Music	6	14
Folk Music	7	15
Films	-	16
Any Other (Specify)	97	98

Respondent Profile

Religion: (1) Hindu (2) Muslim (3) Christian (4) Sikh (5) Buddhist
(6) Jain (7) Others (Specify)

Language mainly spoken: _____

General educational level: Tick appropriately based on responses from the community respondents in the focus group discussion.

(1) Illiterate	(2) Literate but no schooling	(3) Less than primary
(4) Primary but less than middle	(4) Above middle but less than X	(5) X
(7) XII	(8) Graduate and above	

Occupation: Tick appropriately based on responses from the community respondents in the focus group discussion.

(1) Agriculture labourer or allied activity	(2) Unskilled worker/non-agriculture labourer	(3) Business/shop owner
(4) Housewife	(4) Government Servant	(5) Any Other (Specify)

Monthly Household Income: Tick appropriately based on responses from the community respondents in the focus group discussion.

(1) Below 2000	(2) 2001-4000	(3) 4001-8000	(4) 8001-10,000
(5) 10,000 & above			

Section IV: IEC Questions to Officials

Name:
Designation:
Address:
Tel No:

4.1 What are the various vector borne disease related education/awareness generation activities undertaken in your block in the last two years?

Category of Education Material	**Source: Centre/State/ Locally Produced**	**Language Used: Hindi/English/ Local**	**Key Theme of the Material/ Activity**	**Others (Remarks)**
Printed				
Pamphlets				
Posters				
Booklets				
Visual				
Television (DD)				
Cable TV				
Radio				
Local Radio				
National Radio				
Hoardings etc				
Hoardings				
Wall Posters				
Writings on Bus				
Road Shows etc				
Health Mela				
Exhibition				
Street Plays				
Intensive Personal Visits				
Health visits to vector disease prone localities				

4.2 How much was allocated and utilized to the vector borne disease related education in the block/district?
Allocation: _____ block/district Utilisation: _____ block/district

4.3 Details of key voluntary agencies (NGOs) in the district who are engaged in vector borne disease related education.

S.No.	Name	Area of Specialisation	Location/Address	Activities undertaken by the NGO during the last one year related to vector borne disease prevention and control

4.4 Are there any other social institutions at the village level? Yes / No
(Tribal institutions, Mahila Mandal, SHGs, Mandir Seva Samiti, etc.)

4.5 If yes, indicate what are they?

S.No.	Name	Activities undertaken by the institution during the last one year related to vector borne disease prevention and control

4.6 How do you distribute IEC material? Elaborate.

4.7 What are your suggestions for improving IEC (suchna, siksha & sanchar madhyam ki jankari and gatividhiya) activities?

Section V: Responsibilities and Inputs of the Officials

5.1 Staffing pattern and vacancies in the district:

S.No.	Staff Positions	Vacant Positions

5.2 Number of FTDs and DDCs functioning in the district:

(FTD: Fever Treatment Depot; DDC: Drug Distribution Depot)

Criterion	No.of FTDs in the District	No. of DDCs in the District
Functioning		
Non-Functioning		
Reasons for Non-Functioning		
Requirement		

5.3 Detailed activities and effectiveness of FTDs and DDCs:

S.No.	Activities of FTDs	Activities of DDCs	Constraints/Concerns in terms of effectiveness

5.4 Number of vector borne diseases in the village treated in the PHC/Sub-Centre in the last three years

Vector Borne Disease	Number of Cases			Seasonality (Max cases in which season)	Number of Deaths
	2004	2005	2006		
Malaria					
Dengue					
Japanese Encephalitis					
Kala-Azar					
Philaria					

5.5 Comment on beliefs and practices of tribal communities and the influence of religion and traditional healers with a view to use them in control of vector borne diseases.

5.6 Comment on how the tribal communities and vulnerable groups like women can be involved actively in the vector borne disease control programme in terms of design and implementation?

5.7 Your SWOT analysis of the current programme for control of vector borne diseases and your suggestions on how it can be more effective.

Any other comments/observations:

Name of Investigator: **Place:**
Signature: **Date:**

Annexure-2

Area Profile Madhya Pradesh

Area Profile		Madhya Pradesh
District:	**Dhar**	
State:	**Madhya Pradesh**	

Number of Households	302,701

	P	M	F
Population - Total	1,740,329	890,416	849,913
Population - Rural	1,452,145	736,710	715,435
Population - Urban	288,184	153,706	134,478
Population (0-6)	338,623	174,241	164,382
SC Population	112,976	57,839	55,137
ST Population	948,434	478,757	469,677

Number of literates	735,243	470,857	264,386
Number of illiterates	1,005,086	419,559	585,527

Total workers	811,415	467,321	344,094
Main workers	595,586	406,372	189,214

Household size	6.0
Proportion Urban population (%)	16.6

Sex Ratio (females per 1000 males)	955
Sex Ratio (0-6 Years)	943
Sex Ratio (SC)	953
Sex Ratio (ST)	981

	P	M	F
Proportion of SC population (%)	6.5	6.5	6.5
Proportion of ST population (%)	54.5	53.8	55.3
Literacy Rate (%)	52.5	65.7	38.6
Illiteracy Rate (%)	71.7	58.6	85.4

Work Participation Rate (%)	46.6	52.5	40.5
Proportion of Main Workers (%)	34.2	45.6	22.3

Area Profile			
Marginal workers	215,829	60,949	154,880
Non workers	928,914	423,095	505,819

Madhya Pradesh			
Proportion of Marginal Workers (%)	12.4	6.8	18.2
Proportion of Non Workers (%)	53.4	47.5	59.5

Cultivators	423,072	236,888	186,184
Agricultural labourers	239,670	106,155	133,515
Workers in household industries	10,616	6,984	3,632
Other workers	138,057	117,294	20,763

Proportion of cultivators to total workers (%)	52.1	50.7	54.1
Proportion of Agricultural labourers to total workers (%)	29.5	22.7	38.8
Proportion of workers in household industries to total workers (%)	1.3	1.5	1.1
Percentage of other workers to total workers (%)	17.0	25.1	6.0

Reference: Data Dissemination Wing, Office of the Registrar General, India

Area Profile	Madhya Pradesh
District: **Jhabua**	
State: **Madhya Pradesh**	

Number of Households	224,588

	P	M	F
Population – Total	1,394,561	702,053	692,508
Population – Rural	1,273,530	639,252	634,278
Population – Urban	121,031	62,801	58,230
Population (0-6)	319,601	161,909	157,692
SC Population	39,290	19,965	19,325
ST Population	1,211,116	607,652	603,464

Number of literates	396,590	259,123	137,467
Number of illiterates	997,971	442,930	555,041

Total workers	732,246	381,246	351,000
Main workers	487,387	309,318	178,069
Marginal workers	244,859	71,928	172,931
Non workers	662,315	320,807	341,508

Cultivators	536,449	278,136	258,313

Household size	6.0
Proportion of Urban population (%)	8.7

Sex Ratio (females per 1000 males)	986
Sex Ratio (0-6 Years)	974
Sex Ratio (SC)	968
Sex Ratio (ST)	993

	P	M	F
Proportion of SC population (%)	2.8	2.8	2.8
Proportion of ST population (%)	86.8	86.6	87.1
Literacy Rate (%)	36.9	48.0	25.7
Illiteracy Rate (%)	92.8	82.0	103.8

Work Participation Rate (%)	52.5	54.3	50.7
Proportion of Main Workers (%)	34.9	44.1	25.7
Proportion of Marginal Workers (%)	17.6	10.2	25.0
Proportion of Non Workers (%)	47.5	45.7	49.3

Proportion of cultivators to total workers (%)	73.3	73.0	73.6

Area Profile			
Agricultural labourers	101,960	38,129	63,831
Workers in household industries	7,383	4,274	3,109
Other workers	86,454	60,707	25,747

Madhya Pradesh			
Proportion of Agricultural labourers to total workers (%)	13.9	10.0	18.2
Proportion of workers in household industries to total workers (%)	1.0	1.1	0.9
Percentage of other workers to total workers (%)	11.8	15.9	7.3

Reference: Data Dissemination Wing, Office of the Registrar General, India

Area Profile	Madhya Pradesh
District: **Betul**	
State: **Madhya Pradesh**	

Number of Households	249,103

Household size	6.0
Proportion Urban population (%)	18.6

	P	M	F
Population – Total	1,395,175	709,956	685,219
Population – Rural	1,136,056	574,704	561,352
Population – Urban	259,119	135,252	123,867
Population (0-6)	234,885	119,278	115,607
SC Population	147,604	75,789	71,815
ST Population	549,907	275,793	274,114

Sex Ratio (females per 1000 males)	965
Sex Ratio (0-6 Years)	969
Sex Ratio (SC)	948
Sex Ratio (ST)	994

	P	M	F
Proportion of SC population (%)	10.6	10.7	10.5
Proportion of ST population (%)	39.4	38.8	40.0

Number of literates	770,252	453,686	316,566
Number of illiterates	624,923	256,270	368,653

Literacy Rate (%)	66.4	76.8	55.6
Illiteracy Rate (%)	53.9	43.4	64.7

Total workers	615,976	362,132	253,844
Main workers	418,604	297,311	121,293
Marginal workers	197,372	64,821	132,551
Non workers	779,199	347,824	431,375

Work Participation Rate (%)	44.2	51.0	37.0
Proportion of Main Workers (%)	30.0	41.9	17.7
Proportion of Marginal Workers (%)	14.1	9.1	19.3
Proportion of Non Workers (%)	55.8	49.0	63.0

Cultivators	257,671	160,357	97,314

Proportion of cultivators to total workers (%)	41.8	44.3	38.3

Area Profile			
Agricultural labourers	231,970	97,031	134,939
Workers in household industries	11,248	7,466	3,782
Other workers	115,087	97,278	17,809

Madhya Pradesh			
Proportion of Agricultural labourers to total workers (%)	37.7	26.8	53.2
Proportion of workers in household industries to total workers (%)	1.8	2.1	1.5
Percentage of other workers to total workers (%)	18.7	26.9	7.0

Reference: Data Dissemination Wing, Office of the Registrar General, India

Annexure-3

Area Profile Chhattisgarh

Area Profile		Chhattisgarh
District:	**Durg**	
State:	**Chhattisgarh**	

Number of Households	

Household size	5.0
Proportion Urban population (%)	38.2

	P	M	F
Population – Total	2,810,436	1,417,893	1,392,543
Population – Rural	1,738,127	861,958	876,169
Population – Urban	1,072,309	555,935	516,374
Population (0-6)	438,094	222,866	215,228
SC Population	359,511	180,331	179,180
ST Population	348,801	172,038	176,763

Sex Ratio (females per 1000 males)	982
Sex Ratio (0-6 Years)	966
Sex Ratio (SC)	994
Sex Ratio (ST)	1027

	P	M	F
Proportion of SC population (%)	12.8	12.7	12.9
Proportion of ST population (%)	12.4	12.1	12.7
Literacy Rate (%)	75.6	86.4	64.6
Illiteracy Rate (%)	42.8	32.2	53.6

Number of literates	1,793,890	1,032,829	761,061
Number of illiterates	1,016,546	385,064	631,482

Total workers	1,162,833	697,937	464,896
Main workers	965,624	624,764	340,860
Marginal workers	197,209	73,173	124,036
Non workers	1,647,603	719,956	927,647

Work Participation Rate (%)	41.4	49.2	33.4
Proportion of Main Workers (%)	34.4	44.1	24.5
Proportion of Marginal Workers (%)	7.0	5.2	8.9
Proportion of Non Workers (%)	58.6	50.8	66.6

Area Profile	Chhattisgarh		
Cultivators	400,159	209,367	190,792
Agricultural labourers	351,217	146,274	204,943
Workers in household industries	20,722	13,387	7,335
Other workers	390,735	328,909	61,826

Proportion of cultivators to total workers (%)	34.4	30.0	41.0
Proportion of Agricultural labourers to total workers (%)	30.2	21.0	44.1
Proportion of workers in household industries to total workers (%)	1.8	1.9	1.6
Percentage of other workers to total workers (%)	33.6	47.1	13.3

Reference: Data Dissemination Wing, Office of the Registrar General, India

Area Profile	Chhattisgarh
District: **Kanker**	
State: **Chhattisgarh**	

Number of Households	127,294

Household size	5.0
Proportion Urban population (%)	4.8

	P	M	F
Population - Total	650,934	324,636	326,298
Population - Rural	619,549	308,749	310,800
Population - Urban	31,385	15,887	15,498
Population (0-6)	106,879	54,124	52,755
SC Population	27,663	13,540	14,123
ST Population	365,031	180,825	184,206

Sex Ratio (females per 1000 males)	1005
Sex Ratio (0-6 Years)	975
Sex Ratio (SC)	1043
Sex Ratio (ST)	1019

	P	M	F
Proportion of SC population (%)	4.2	4.2	4.3
Proportion of ST population (%)	56.1	55.7	56.5

Number of literates	396,797	223,779	173,018
Number of illiterates	254,137	100,857	153,280

Literacy Rate (%)	72.9	82.7	63.3
Illiteracy Rate (%)	46.7	37.3	56.0

Total workers	351,859	184,899	166,960
Main workers	252,484	156,689	95,795
Marginal workers	99,375	28,210	71,165
Non workers	299,075	139,737	159,338

Work Participation Rate (%)	54.1	57.0	51.2
Proportion of Main Workers (%)	38.8	48.3	29.4
Proportion of Marginal Workers (%)	15.3	8.7	21.8
Proportion of Non Workers (%)	45.9	43.0	48.8

Cultivators	212,874	117,144	95,730

Proportion of cultivators to total workers (%)	60.5	63.4	57.3

Area Profile			
Agricultural labourers	84,936	32,700	52,236
Workers in household industries	5,853	3,146	2,707
Other workers	48,196	31,909	16,287

Chhattisgarh			
Proportion of Agricultural labourers to total workers (%)	24.1	17.7	31.3
Proportion of workers in household industries to total workers (%)	1.7	1.7	1.6
Percentage of other workers to total workers (%)	13.7	17.3	**9.8**

Reference: Data Dissemination Wing, Office of the Registrar General, India

Area Profile		Chhattisgarh
District:	**Raipur**	
State:	**Chhattisgarh**	

Number of Households	581,582

Household size	5.0
Proportion Urban population (%)	30.4

	P	M	F
Population - Total	3,016,930	1,523,925	1,493,005
Population - Rural	2,099,312	1,047,633	1,051,679
Population - Urban	917,618	476,292	441,326
Population (0-6)	515,582	262,406	253,176
SC Population	487,723	244,295	243,428
ST Population	365,273	181,409	193,864

Sex Ratio (females per 1000 males)	980
Sex Ratio (0-6 Years)	965
Sex Ratio (SC)	996
Sex Ratio (ST)	1014

	P	M	F
Proportion of SC population (%)	16.2	16.0	16.3
Proportion of ST population (%)	12.1	11.9	12.3

Number of literates	1,713,653	1,034,063	679,590
Number of illiterates	1,303,277	489,862	813,415

Literacy Rate (%)	68.5	82.0	54.8
Illiteracy Rate (%)	52.1	38.8	65.6

Total workers	1,264,663	764,659	500,004
Main workers	961,507	657,300	304,207
Marginal workers	303,156	107,359	195,797
Non workers	1,752,267	759,266	993,001

Work Participation Rate (%)	41.9	50.2	33.5
Proportion of Main Workers (%)	31.9	43.1	20.4
Proportion of Marginal Workers (%)	10.0	7.0	13.1
Proportion of Non Workers (%)	58.1	49.8	66.5

Cultivators	398,692	223,394	175,298

Proportion of cultivators to total workers (%)	31.5	29.2	35.1

Area Profile			
Agricultural labourers	397,388	162,837	234,551
Workers in household industries	31,775	18,838	12,937
Other workers	436,808	359,590	77,218

Chhattisgarh			
Proportion of Agricultural labourers to total workers (%)	31.4	21.3	46.9
Proportion of workers in household industries to total workers (%)	2.5	2.5	2.6
Percentage of other workers to total workers (%)	34.5	47.0	15.4

Reference: Data Dissemination Wing, Office of the Registrar General, India

Area Profile	
District:	**Rajnandgaon**
State:	**Chhattisgarh**

Chhattisgarh

Number of Households	246,524

Household size	5.0
Proportion Urban population (%)	18.1

	P	M	F
Population - Total	1,283,224	634,342	648,882
Population - Rural	1,051,577	517,085	534,492
Population - Urban	231,647	117,257	114,390
Population (0-6)	217,244	109,521	107,723
SC Population	127,424	62,844	64,580
ST Population	341,688	166,587	175,101

Sex Ratio (females per 1000 males)	1023
Sex Ratio (0-6 Years)	984
Sex Ratio (SC)	1028
Sex Ratio (ST)	1051

	P	M	F
Proportion of SC population (%)	9.9	9.9	10.0
Proportion of ST population (%)	26.6	26.3	27.0
Literacy Rate (%)	77.2	87.2	67.6
Illiteracy Rate (%)	43.2	33.7	52.4

Number of literates	823,076	457,505	365,571
Number of illiterates	460,148	176,837	283,311

Total workers	649,401	342,093	307,308
Main workers	558,996	311,112	247,884
Marginal workers	90,405	30,981	59,424
Non workers	633,823	292,249	341,574

Work Participation Rate (%)	50.6	53.9	47.4
Proportion of Main Workers (%)	43.6	49.0	38.2
Proportion of Marginal Workers (%)	7.0	4.9	9.2
Proportion of Non Workers (%)	49.4	46.1	52.1

Area Profile			
Cultivators	352,908	172,681	180,227
Agricultural labourers	165,486	65,990	99,496
Workers in household industries	12,376	7,003	5,373
Other workers	118,631	96,419	22,212

Chhattisgarh			
Proportion of cultivators to total workers (%)	54.3	50.5	58.6
Proportion of Agricultural labourers to total workers (%)	25.5	19.3	32.4
Proportion of workers in household industries to total workers (%)	1.9	2.0	1.7
Percentage of other workers to total workers (%)	18.3	28.2	7.2

Reference: Data Dissemination Wing, Office of the Registrar General, India

Annexure-4

Area Profile Andhra Pradesh

Area Profile	
District:	**East Godavari**
State:	**Andhara Pradesh**

Andhra Pradesh

Number of Households	1,202,661

	P	M	F
Population - Total	4901420	2459640	2441780
Population - Rural	3749535	1885119	1864416
Population - Urban	151885	574521	577364
Population (0-6)	613490	310110	303380
SC Population	881650	442325	439325
ST Population	191561	95234	96327

Number of literates	2807728	1504676	1303052
Number of illiterates	2093692	954964	1138728

Total workers	1940214	1436729	503485

Household size	4
Proportaion Urban population(%)	23.5

Sex Ratio (females per 1000 males)	993
Sex Ratio (0-6 Years)	978
Sex Ratio (SC)	993
Sex Ratio (ST)	1011

	P	M	F
Proportion of SC population (%)	18	18	18
Proportion of ST population (%)	3.9	3.9	3.9
Literacy Rate (%)	65.5	70	60.9
Illiteracy Rate (%)	48.8	44.4	53.3

Work Participation Rate (%)	39.6	58.4	20.6

Main workers	1614799	1291132	232667
Marginal workers	325415	145597	179818
Non workers	2961206	1022911	1938295

Proportion of Main Workers (%)	32.9	52.5	13.3
Proportion of Marginal Workers (%)	6.6	5.9	7.4
Proportion of Non Workers (%)	60.4	41.6	79.4

Cultivators	218,947	190,815	28,132
Agricultural labourers	985,980	651,929	334,051
Workers in household industries	78,112	42,645	35,467
Other workers	657,175	551,340	105,835

Proportion of cultivators to total workers (%)	11.3	13.3	5.6
Proportion of Agricultural labourers to total workers(%)	50.8	45.4	66.3
Proportion of workers in household industries to total workers (%)	4	3	7
Percentage of other workers to total workers (%)	33.9	38.4	21

Reference: Data Dissemination Wing, Office of the Registrar General, India

Area Profile	
District:	**Visakhapatnam**
State:	**Andhra Pradesh**

Andhra Pradesh

Number of Households	887,003

Household size	4
Proportaion Urban population(%)	39.9

	P	M	F
Population - Total	3832336	1930197	1902139
Population - Rural	2301437	1149912	1151525
Population - Urban	1530899	780285	750614
Population (0-6)	493124	249517	243607
SC Population	291219	146813	144406
ST Population	557572	278399	279173

Sex Ratio (females per 1000 males)	985
Sex Ratio (0-6 Years)	976
Sex Ratio (SC)	984
Sex Ratio (ST)	1003

	P	M	F
Proportion of SC population (%)	7.6	7.6	7.6
Proportion of ST population (%)	14.5	14.4	14.7
Literacy Rate (%)	60	69.7	50.1
Illiteracy Rate (%)	54.8	45.2	64.6

Number of literates	2002316	1171082	831234
Number of illiterates	1830020	759115	1070905

Total workers	1602761	1069542	533219
Main workers	1305584	931810	373774
Marginal workers	297177	137732	159445
Non workers	2229575	860655	1368920

Work Participation Rate (%)	41.8	55.4	28
Proportion of Main Workers (%)	34.1	48.3	19.7
Proportion of Marginal Workers (%)	7.8	7.1	8.4
Proportion of Non Workers (%)	58.2	44.6	72

Cultivators	433,777	259,330	174,447

Proportion of cultivators to total	27.1	24.2	32.7

				workers (%)			
Agricultural labourers	421,612	209,332	212,280	Proportion of Agricultural labourers to total workers(%)	26.3	19.6	39.8
Workers in household industries	56,394	30,622	25,772	Proportion of workers in household industries to total workers (%)	3.5	2.9	4.8
Other workers	690,978	570,258	120,720	Percentage of other workers to total workers (%)	43.1	53.3	22.6

Reference: Data Dissemination Wing, Office of the Registrar General, India

Area Profile	
District:	**Mahbubnagar**
State:	**Andhra Pradesh**

Andhra Pradesh

Number of Households	688,212

Household size	5
Proportaion Urban population(%)	10.6

	P	M	F
Population - Total	3513934	1782340	1731594
Population - Rural	3142579	1592325	1550254
Population - Urban	371355	190015	181340
Population (0-6)	547506	280552	266954
SC Population	600927	304628	296299
ST Population	278702	143115	135587

Sex Ratio (females per 1000 males)	972
Sex Ratio (0-6 Years)	952
Sex Ratio (SC)	973
Sex Ratio (ST)	947

	P	M	F
Proportion of SC population (%)	17.1	17.1	17.1
Proportion of ST population (%)	7.9	8	7.8

Number of literates	1317521	850414	467107
Number of illiterates	2196413	931926	1264487

Literacy Rate (%)	44.4	56.6	31.9
Illiteracy Rate (%)	74	62.1	86.3

Total workers	1823329	1002353	820976
Main workers	1482426	884806	597620
Marginal workers	340903	117547	223356
Non workers	1690605	779987	910618

Work Participation Rate (%)	51.9	56.2	47.4
Proportion of Main Workers (%)	42.2	49.6	34.5
Proportion of Marginal Workers (%)	9.7	6.6	12.9
Proportion of Non Workers (%)	48.1	43.8	52.6

Cultivators	554,784	357,644	197,140
Agricultural labourers	779,467	290,664	488,803
Workers in household industries	70,926	32,535	38,391
Other workers	418,152	321,510	96,642

Proportion of cultivators to total workers (%)	30.4	35.7	24
Proportion of Agricultural labourers to total workers(%)	42.7	29	59.5
Proportion of workers in household industries to total workers (%)	3.9	3.2	4.7
Percentage of other workers to total workers (%)	22.9	32.1	11.8

Reference: Data Dissemination Wing, Office of the Registrar General, India

Area Profile	
District:	**Adilabad**
State:	**Andhra Pradesh**

Andhra Pradesh

Number of Households	524,649

Household size	5
Proportaion Urban population(%)	26.5

	P	M	F
Population - Total	2488003	1250958	1237045
Population - Rural	1827986	915067	912919
Population - Urban	660017	335891	324126
Population (0-6)	376768	191994	184774
SC Population	461214	231793	229421
ST Population	416511	209586	206925

Sex Ratio (females per 1000 males)	989
Sex Ratio (0-6 Years)	962
Sex Ratio (SC)	990
Sex Ratio (ST)	987

	P	M	F
Proportion of SC population (%)	18.5	18.5	18.5
Proportion of ST population (%)	16.7	16.8	16.7

Number of literates	1112189	688072	424117
Number of illiterates	1375814	562886	812928

Literacy Rate (%)	52.7	65	40
Illiteracy Rate (%)	65.2	53.2	77.3

Total workers	1123248	660482	462766
Main workers	912287	579522	332765
Marginal workers	210961	80960	130001

Work Participation Rate (%)	45.1	52.8	37.4
Proportion of Main Workers (%)	36.7	46.3	26.9
Proportion of Marginal Workers (%)	8.5	6.5	10.5

Non workers	1364755	590476	774279	Proportion of Non Workers (%)	54.9	47.2	62.6

Cultivators	341,296	216,037	125,259	Proportion of cultivators to total workers (%)	30.4	32.7	27.1
Agricultural labourers	343,456	147,986	195,470	Proportion of Agricultural labourers to total workers(%)	30.6	22.4	42.2
Workers in household industries	99,613	21,910	77,703	Proportion of workers in household industries to total workers (%)	8.9	3.3	16.8
Other workers	338,883	274,549	64,334	Percentage of other workers to total workers (%)	30.2	41.6	13.9

Reference: Data Dissemination Wing, Office of the Registrar General, India

Annexure-5

Area Profile Orissa

Area Profile		Orrisa
District:	**Mayurbhanj**	
State:	**Orissa**	

Number of Households	472,123

	P	M	F
Population - Total	2223456	1123200	1100256
Population - Rural	2067756	1041057	1026699
Population - Urban	155700	82143	73557
Population (0-6)	364717	186464	178253
SC Population	170835	85844	84991
ST Population	1258459	631149	627310

Number of literates	964860	616003	348857
Number of illiterates	1258596	507197	751399

Household size	5
Proportaion Urban population(%)	7

Sex Ratio (females per 1000 males)	980
Sex Ratio (0-6 Years)	956
Sex Ratio (SC)	990
Sex Ratio (ST)	994

	P	M	F
Proportion of SC population (%)	7.7	7.6	7.7
Proportion of ST population (%)	56.6	56.2	57
Literacy Rate (%)	51.9	65.8	37.8
Illiteracy Rate (%)	67.7	54.1	81.5

Total workers	1027797	588954	438843
Main workers	618457	456747	161710
Marginal workers	409340	132207	277133
Non workers	1195659	534246	661413

Work Participation Rate (%)	46.2	54.4	39.9
Proportion of Main Workers (%)	27.8	40.7	14.7
Proportion of Marginal Workers (%)	18.4	11.8	25.2
Proportion of Non Workers (%)	53.8	47.6	60.1

Cultivators	287,338	215,722	71,616
Agricultural labourers	394,328	180,881	213,447
Workers in household industries	149,124	40,972	108,152
Other workers	197,007	151,379	45,628

Proportion of cultivators to total workers (%)	28	36.6	16.3
Proportion of Agricultural labourers to total workers(%)	38.4	30.7	48.6
Proportion of workers in household industries to total workers (%)	14.5	7	24.6
Percentage of other workers to total workers (%)	19.2	25.7	10.4

Reference: Data Dissemination Wing, Office of the Registrar General, India

Area Profile	
District:	**Baudh**
State:	**Orrisa**

Orrisa

Number of Households	83,245

Household size	4
Proportaion Urban population(%)	4.8

	P	M	F
Population - Total	373372	188155	185217
Population - Rural	355347	178849	176498
Population - Urban	18025	9306	8719
Population (0-6)	61042	31049	29993
SC Population	41710	41004	40706
ST Population	46557	23276	23281

Sex Ratio (females per 1000 males)	984
Sex Ratio (0-6 Years)	966
Sex Ratio (SC)	993
Sex Ratio (ST)	1000

	P	**M**	**F**
Proportion of SC population (%)	21.9	21.8	22
Proportion of ST population (%)	12.5	12.4	12.6
Literacy Rate (%)	57.7	76.2	39
Illiteracy Rate (%)	61.8	43.5	80.3

Number of literates	180321	119757	60564
Number of illiterates	193051	68398	124653

Total workers	170761	104933	65828
Main workers	105794	85298	20496
Marginal workers	64967	19635	45332
Non workers	202611	83222	119389

Work Participation Rate (%)	45.7	55.8	35.5
Proportion of Main Workers (%)	28.3	45.3	11.1
Proportion of Marginal Workers (%)	17.4	10.4	24.5
Proportion of Non Workers (%)	54.3	44.2	64.5

Cultivators	65,750	50,219	15,531
Agricultural labourers	67,530	28,960	38,570
Workers in household industries	11,381	5,931	5,450
Other workers	26,100	19,823	6,277

Proportion of cultivators to total workers (%)	38.5	47.9	23.6
Proportion of Agricultural labourers to total workers(%)	39.5	27.6	58.6
Proportion of workers in household industries to total workers (%)	6.7	5.7	8.3
Percentage of other workers to total workers (%)	15.3	18.9	9.5

Reference: Data Dissemination Wing, Office of the Registrar General, India

Area Profile	
District:	**Raygada**
State:	**Orissa**

Orrisa

Number of Households	190,381

Household size	4
Proportaion Urban population(%)	13.9

	P	M	F
Population - Total	831109	409792	421317
Population - Rural	715702	351158	364544
Population - Urban	115407	58634	56773
Population (0-6)	145493	73451	72042
SC Population	115665	57265	58400
ST Population	463418	224908	238510

Sex Ratio (females per 1000 males)	1028
Sex Ratio (0-6 Years)	981
Sex Ratio (SC)	1020
Sex Ratio (ST)	1060

	P	M	F
Proportion of SC population (%)	13.9	14	13.9
Proportion of ST population (%)	55.8	54.9	56.6

Number of literates	247829	162061	85768
Number of illiterates	583280	247731	335549

Literacy Rate (%)	36.1	48.2	24.6
Illiteracy Rate (%)	85.1	73.7	96.1

Total workers	399184	225367	173817
Main workers	249909	179932	69977
Marginal workers	149275	45435	103840
Non workers	431925	184425	247500

Work Participation Rate (%)	48	55	41.3
Proportion of Main Workers (%)	30.1	43.9	16.6
Proportion of Marginal Workers (%)	18	11.1	24.6
Proportion of Non Workers (%)	52	45	58.7

Cultivators	116,166	78,995	37,171

Proportion of cultivators to total workers (%)	29.1	35.1	21.4

Agricultural labourers	183,864	75,840	108,024	Proportion of Agricultural labourers to total workers(%)	46.1	33.7	62.1
Workers in household industries	7,591	4,065	3,526	Proportion of workers in household industries to total workers (%)	1.9	1.8	2
Other workers	91,563	66,467	25,096	Percentage of other workers to total workers (%)	22.9	29.5	14.4

Reference: Data Dissemination Wing, Office of the Registrar General, India

Annexure 6

Role of ASHA*

ASHA would implement the programme at the village level.

Malaria

1. Conducting fever surveillance: Malaria is a disease associated with high fever, chills with rigors, headache, vomiting and other flu like symptoms. ASHA would conduct door-to-door fever surveillance activity on a weekly basis and report any occurrence of fever to the ANM/ health workers as well as the Medical Officer, Sector PHC.
2. Conducting Rapid Diagnostic Test for diagnosis of malaria: ASHA would be trained in the use of Rapid Diagnostic Test kits for malaria, a blood test on the person suffering from malaria symptoms to determine the presence of malaria.
3. Acting as Fever Treatment Depot: If the Rapid Diagnostic Test for malaria is positive, ASHA would make treatment available at the village level as a Fever Treatment Depot so that people get treatment at the earliest to prevent any complication and death. The worker will be imparted adequate training before assigning her the responsibility of a Fever Treatment Depot.
4. Referral of severe malaria cases to hospitals: If the disease becomes serious, and the patient suffers from symptoms of severe malaria as high fever with convulsions (fits), anaemia, severe dehydration, inability to stand or sit, ASHA would refer the patient to a hospital. Treatment is effective if it is started early.
5. Indoor Residual Spraying: To stop the transmission of malaria, it is very essential to control the mosquito populations. Two rounds of Indoor Residual Spray with DDT or other insecticides (timing of the spray will depend on the area) on the walls and roofs of houses are conducted. ASHA would be engaged in increasing community acceptance of indoor residual spraying.
6. Promotion of use of Insecticide Treated Nets (ITNs): ASHA would be involved in identification of people living below the poverty line for distribution of free ITNs. ASHA would also be trained for retreatment of community owned ITNs and would educate the community to do the same. In particular, ASHA would also encourage pregnant mothers and children under five to use ITNs.

Filariasis

7. Mass Drug Administration: ASHA would conduct awareness generation for MDA campaign to increase coverage and compliance. The people, who are living in filaria affected areas, may be having microfilariae in their blood. These people look healthy and may not show signs and symptoms at early stage. ASHA would be visiting the village to motivate people to take DEC, because DEC kills microfilariae and the disease progression will be halted. ASHA would be making house-to-house visits on National Filaria Day along with the team for distribution of DEC. The benefits of MDA should be explained as well as the side effects that may occur in persons who are microfilaria carriers.
8. Mop up round: ASHA would be making repeated visits along with the team to cover those family members who have been absent or have been seriously ill and not been able to take the drug on National Filaria Day as well as cover inmates of locked households or refusal cases through intensified Behaviour Change Communication.
9. Counselling for home based case management : ASHA would be counseling and

encouraging patients and family members to take up home based morbidity management and limb hygiene practices for lymphodema cases and motivate patients for operating Hydrocele cases at PHCs/CHCs.

Kala-azar

10. Conducting fever surveillance: ASHA would conduct door-to-door fever surveillance activity on a weekly basis to find out and enlist all cases of prolonged fever of more than a fortnight not responding to anti-malarials and antibiotics and refer them to the PHCs for confirmation of diagnosis.

11. Referral of Kala-azar and Post Kala-azar Dermal Leishmaniasis (PKDL) cases: ASHA would be referring Kala-azar and PKDL cases to the PHC for confirmation and initiation of treatment. PKDL, which manifests in the community as a painless skin condition is often overlooked by the patient himself. PKDL is a potent reservoir for further transmission of disease, and all such cases must be detected and completely treated.

12. Counselling and Treatment Completion: After being diagnosed with Kala-azar / PKDL, the patient must be counselled to initiate treatment immediately. ASHA would be counseling the patient for completing the full course of treatment. As the treatment is of a long duration, there is often a tendency on the part of the patient to discontinue treatment as the patient starts feeling better in a few days. The patient and his family must be made aware about the necessity of the complete treatment for individual relief as well as bringing down parasite load. Discontinuation of treatment midway is dangerous for the patient, as well as the community, as the parasites of Kala-azar if not removed from the body of the patient will again cause the disease in him/her, and what is even worse, some of them be transmitted, though the bite of the insect to other healthy individuals. ASHA would be motivating the patient.s family to provide emotional support to the patient during the period of illness.

13. Indoor Residual Spraying with DDT: To stop the transmission of Kala-azar, it is very essential to control the sand-fly populations. ASHA would be responsible for coordination with the spray team, informing the community in advance about the spray through IEC, motivating the community for acceptance of IRS, ensuring over 85% coverage of rooms and cattle sheds with DDT in the allotted villages and ensuring that mud plastering is not done after the DDT spray.

Japanese Encephalitis (JE)

14. Report suspected cases of JE: ASHA would be reporting the suspected cases of JE immediately to the nearest PHC/CHC/any hospital and advise parents to do the same. Symptoms of JE include headache, fever, disorientation, coma, tremors, paralysis and loss of coordination. ASHA must also inform the health worker about any abnormal death of piglets in the village. Pigs play an important role in JE transmission, as the JE virus multiplies (amplifies) in the pigs without suffering from the disease causing and maintaining the virus for a long time. Mosquitoes while biting pigs, pick up the infection easily and pass it on to the man when it bites again.

15. JE Vaccination: ASHA would also be advising the community for JE vaccination of
children. Government provides this vaccine for children in JE affected areas.

16. Fogging: ASHA would be informing the village community about the purpose of fogging during an outbreak and would be engaged in increasing community acceptance of fogging through information dissemination.

Dengue / Chikungunya

17. Conducting fever alert surveillance and timely reporting: ASHA would conduct door-to-door fever alert surveillance activity on a weekly basis and report any occurrence of fever outbreak to the ANM/ health workers as well as the Medical Officer, Sector PHC. If the number of fever cases reported is five or more in a village in a week, it would be considered as an outbreak of fever.

18. Source reduction through health education: As *Aedes* mosquitoes breed in clean water collections in and around houses, ASHA would provide health education to the community for preventing breeding of mosquitoes and advising the community for protection from mosquito bites by taking the following steps .

- Keeping clean environment in and around houses.
- Covering all water tanks and containers with tight lids.
- Emptying & drying water coolers, tanks, other water storage containers, at least once a week before refilling.
- Disposing & destroying all containers, junk materials, tyres, coconut shells, etc.
- Wearing full sleeved clothing to cover the body, Using mosquito nets, preferably
- insecticide treated ones and repellants.

Behaviour Change Communication

19. Awareness Generation and Dissemination of information- ASHA would be providing information to the community pertaining to prevention and control of all six VBDs like elimination of breeding sites and the importance of early detection and complete treatment through Inter-personal communication.

Ref: Health Bulletin for Asha on Prevention and Control of Vector Borne Diseases, Bulletin 1 . January 2007 of NVBDCP