



***Acute Malnutrition:  
Situational Analysis in the States of  
Rajasthan and Madhya Pradesh,  
India***

**December 2010**

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### List of abbreviations

ACF	Action contre la Faim	MOHFW	Ministry of Health & Family Welfare
AIIMS	All India Institute of Medical Sciences	M.P.	Madhya Pradesh
ANM	Auxiliary Nurse-Midwife	MSF – OCBA	Médecins Sans Frontières – Operational Center Barcelona
ARTH	Action Research and Training for Health	MTC	Malnutrition Treatment Centre
ASHA	Accredited Social Health Activist	MUAC	Mid-Upper-Arm-Circumference
AWC	Anganwadi Centre	MWCD	Ministry of Women and Child Development
AWW	Anganwadi Worker	NCHS	National Centre for Health Statistics
AYUSH	Ayurveda, Yoga, Unani, Siddha and Homeopathy	NFHS	National Family Health Survey
BPNI	Breastfeeding Promotion Network of India	NGO	Non-Governmental Organization
BMI	Body Mass Index	NIN	National Institute of Nutrition
CECOEDECON	Centre for Community Economics and Development Consultants	NIPCCD	National Institute for Public Cooperation and Child Development
CHC	Community Health Centre	NNMB	National Nutrition Monitoring Bureau
CMAM	Community based Management of Acute Malnutrition	NRC	Nutrition Rehabilitation Centre
CSNS	Coalition for Sustainable Nutrition Security	NRHM	National Rural Health Mission
DWCD	Department of Women and Child Development	OBC	Other Backward Class
GAIN	Global Alliance for Improved Nutrition	PDS	Public Distribution System
GAM	Global Acute Malnutrition	PHC	Primary Health Care Centre
IAP	Indian Academy of Pediatrics	PHFI	Public Health Foundation of India
ICDS	Integrated Child Development Scheme	RTF	Right-To-Food
ICMR	Indian Council for Medical Research	RUTF	Ready-to-Use-Therapeutic-Food
IMNCI	Integrated Management of Neonatal and Childhood Illnesses	RUF	Ready-to-Use-Food
MDM	Mid-Day-Meal	SAM	Severe Acute Malnutrition
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act	SC	Scheduled Caste
MI	Micronutrient Initiative	ST	Scheduled Tribe
		UKDFID	United Kingdom Department for International Development
		URMUL	Uttari Rajasthan Milk Union Limited
		WFP	World Food Programme
		WHO	World Health Organization



[www.actionagainsthunger.org](http://www.actionagainsthunger.org)

[www.actioncontrelafaim.org](http://www.actioncontrelafaim.org)

[www.accioncontraelhambre.org](http://www.accioncontraelhambre.org)

[www.actionagainsthunger.org.uk](http://www.actionagainsthunger.org.uk)

[www.actioncontrelafaim.ca](http://www.actioncontrelafaim.ca)



**Action contre la Faim** (ACF, *eng. Action Against Hunger*) was founded in 1979 in France as a non-governmental organization that is exclusively dedicated to ending hunger. We are a network of five headquarters based in United States, Canada, United Kingdom, Spain and France. ACF has extended its programs in Africa, Asia and Latin America. ACF currently works in over 40 countries.

ACF's mission is to eradicate hunger and malnutrition. It focuses its work on a) prevention of hunger and under-nutrition (through activities in the areas of food security, livelihoods, water, sanitation, hygiene and care practices), treatment of severe acute malnutrition (SAM), b) humanitarian and chronic under development contexts, c) partnerships, d) research, and e) advocacy.

ACF is currently not operational in India. However, it is concerned about the scale and extent of under nutrition in the country.



## **Background, Purpose and Methodology of ACF Situation Analysis**

At the end of 2009, ACF conducted a desktop review in order to understand global under-nutrition context in India. The desktop review recommended that a further field analysis be conducted. The states of Madhya Pradesh and Rajasthan were selected for this field analysis and it was suggested that ACF target comparatively remote areas in both states with a high proportion of tribal and scheduled caste communities. The areas targeted were tribal dominated though are also home to other vulnerable groups such as Scheduled Castes and Other Backward Classes (OBC).

The purpose of the field visits was to develop an analysis of the situation from field perspectives, to understand factors contributing to under nutrition and various services responding to these issues, to map stakeholders and identify gaps, and to recommend potential ACF intervention in the country.

This field situation analysis was conducted from April to June 2010 by a team of nutritionists with support from a Head of Mission and logistics - administration team. During the field situation analysis, meetings were conducted with a range of stakeholders including women's groups, adolescent girls, ICDS and health functionaries from village to district level, local NGOs, state level senior government officers, UN agencies, and research and academic institutions. The analysis included visits to households, Anganwadi Centres, sub-health centres, community health centres, primary health centres, district hospitals and Nutrition Rehabilitation Centres (NRC) and Malnutrition Treatment Centres (MTC).

This report captures the general situation on under nutrition and acute malnutrition in India, and particularly in selected sites of Rajasthan and Madhya Pradesh (M.P.), focusing on tribal dominated areas and populations. In M.P districts of Jhabua, Shivpuri, Sheopur and Panna were selected. The major reasons for selecting these districts are that these districts are amongst the most affected areas on acute malnutrition and SAM. Together with ACF's analysis, the selected areas in Madhya Pradesh were also identified by the state government, local NGOs and UNICEF. In addition, these districts are amongst those with lowest human development indicators in the state. In Rajasthan, the districts of Baran, Udaipur, Rajsamand, Tonk and Bikaner were selected. The major reasons for selecting these districts were that Baran, Udaipur and Rajsamand are tribal dominated areas and are infamous for hunger deaths. Bikaner lies in the western desert region where communities are prone to harsh climatic conditions resulting in high under nutrition, water scarcity, food insecurity, and sanitation and hygiene issues. These districts are high on the agenda of the government, UNICEF and NGOs and thus provide a conducive environment for ACF interventions. Tonk was particularly selected to assess the under nutrition situation of urban poor. Moreover, UNICEF had highly recommended Tonk MTC as one of the best functional MTCs in Rajasthan. These districts represent various ecological zones in the respective states and are low on human development indicators. Most of these districts had a sizeable population of vulnerable communities. In each of them, on an average of 2 Blocks (sub districts) were visited, the visits being facilitated by reputed local NGOs.

The situation analysis aimed to collect qualitative information rather than primary quantitative data. The quantitative data referred to originates mainly from government sources.

This report has three main parts – A brief global overview of the under nutrition sector in India followed by a more detailed presentation of situation analysis in Rajasthan and Madhya Pradesh. Analysis of factors contributing to under-nutrition and the possible role of ACF are presented in the final parts of the report.

Important concluding steps in the situational analysis were the consultative meetings held in Bhopal for Madhya Pradesh and Jaipur for Rajasthan. These consultative meetings were forums for stakeholders to comment on the draft report findings and thus contribute to a broader understanding of the situation. These meetings also helped the team in further developing the potential role for ACF in India.



## Nutrition in India: short overview

### Nutrition status of Indian population

India has made rapid economic growth in the last two decades. It has an evolving global reputation of a country where economies are being turned around. India has also largely won the battle against famines which have become the thing of the past, thanks to a spectacular upswing in food grain production since the green revolution of the late 1960s. The country's grain coffers are brimming over, holding nearly 53 million tonnes of wheat and rice on July 1, 2009, as a result of the consistent rise in food grain output in past few years<sup>1</sup>. This has transformed the country from a net food importer to an occasional food exporter. However, this upbeat version of the food situation in India does not reflect on the reality of widespread under-nutrition in the country. Notably, the income has been shifting away from the majority towards the wealthy minority and a substantial segment of the population is being forced to eat less and lower quality food.

Another feature of India is the country's striking demographic diversity. Indian population growth is estimated at 1.3% as of 2008 by the World Bank<sup>2</sup>. However, even broad comparison between its states brings out enormous variations in basic demographic indicators. At one end of the scale, Kerala has demographic indicators that are more typical of a middle income country than of a poor developing economy. At the other end, the large north Indian states find themselves in the same league as the world's least developed countries in terms of the same indicators<sup>3</sup>.

Indian Prime Minister Manmohan Singh acknowledged the country's undernourished children as a "national shame"<sup>4</sup>. Even after a decade of galloping economic growth, child malnutrition rates are worse in India than in many sub-Saharan African countries, and they stand out as a paradox in a proud democracy.

There are enormous challenges for India's development. These include huge disparities among different geographical regions, between social groups, among different income levels and between the sexes. Poverty, rapid population growth, climate change, natural disasters, pockets of weak governance, gaps in nutrition policies and poor health systems continue to pose serious challenges for hunger and under-nutrition in India.

The Government of India, state governments, UN and many NGOs have numerous programmes to address these issues. Government programmes include ICDS, Mid-day-Meal, TPDS, MGNREGA, and the NRHM, including specific SAM treatment centres in states like Rajasthan and M.P. Some of these programmes are old and some are very new. Despite these programmes, rates of under nutrition in India remain worryingly high.

In 2008, Dr. Veena Rao, Joint Secretary of the DWCD, Government of India, estimated the cost of under-nutrition for the country. According to this estimation, malnutrition in India leads to a 4 % loss of GDP, representing about USD 29 billion<sup>5</sup>. This cost may consistently increase if the funds released for ICDS and if the larger health expenditure related to a) rehabilitation of children with low weight at birth, b) rehabilitation of the mothers who have pathologies related to low nutritional status, and c) the cost of management of complications in HIV patients due to lack of proper nutrition support, etc. is added to these losses, the cost of under-nutrition and under-nutrition related pathologies would further rise.

<sup>1</sup> Surinder Sud, "India boosting production of food grains for enhancing food security", Northern Voices Online.com, Feb 2010.

<sup>2</sup> World Bank, Population growth (annual %), India 2008, available from: <http://data.worldbank.org/indicator/SP.POP.GROW>

<sup>3</sup> Decadal Population growth of Kerala is of 9.4% compared to 28% in Rajasthan, 24% in Madhya Pradesh, 26% in Uttar Pradesh and 28% in Jammu and Kashmir (source: Census 2001).

<sup>4</sup> Dr. Manmohan Singh's speech on the Independence Day of India, 15th August 2009.

<sup>5</sup> Reference: [www.britannia.co.in/bnf/media/veena-rao.ppt](http://www.britannia.co.in/bnf/media/veena-rao.ppt)



Today, India accounts for around 30% of the wasted children under-5 in the world. 7.4 million children make up 40% of the children born with low birth weight (less than 2.5 kg) in the world<sup>6</sup>. The country is struggling to deal with high child and adult under-nutrition rates for some time with limited success.

- 19.8% of children under-5 years of age are wasted or around 30 million children in India suffer from a form of acute malnutrition.
- 6.4% (9,800,000) of them are severely malnourished or having 9 times higher risk to die than the normal children of their age.
- 48% of same group is stunted and 43% is underweight.
- Acute malnutrition has higher concentration within children from rural areas (21%), tribal & scheduled caste (28% & 21%), illiterate mother (23%) and children under-3 (23%).
- More than 30% of the children in India are born with weight < 2.5 kg. Children with low birth weights were found to be at the highest risk of impaired nutritional status.
- Children from households with improved toilet facilities and safe drinking water have better nutritional status.
- Generally in urban zones children have better nutritional status than in rural but the slums of Indore and Chennai are highly affected by acute malnutrition (34% and 23%).
- 36% of women and 34% of men in India have BMI < 18.5 kg/m<sup>2</sup>.
- Mothers found to be thin (BMI < 18.5 kg/m<sup>2</sup>) were more likely to have children who were stunted (54%), wasted (25%), and underweight (52%).
- Infant mortality rate (IMR) was 57/1000 and Under-5 mortality rate (U5MR) was 74/1000. More than half of the infant deaths occur in the first month after birth.
- More than half of under-5 deaths are related to malnutrition (54%). Mild to moderate underweight contributes to 43% of the deaths and severe underweight to 11%.
- 7 out of every 10 children in India are found to be anaemic in between the age group of 6-59 months. Anaemia among children aged 6- 35 months increased from 74% in NFHS 2 to 79% in NFHS 3.

**Source: Nutrition in India, NFHS – 3, MOHFW, Government of India, 2005- 06**

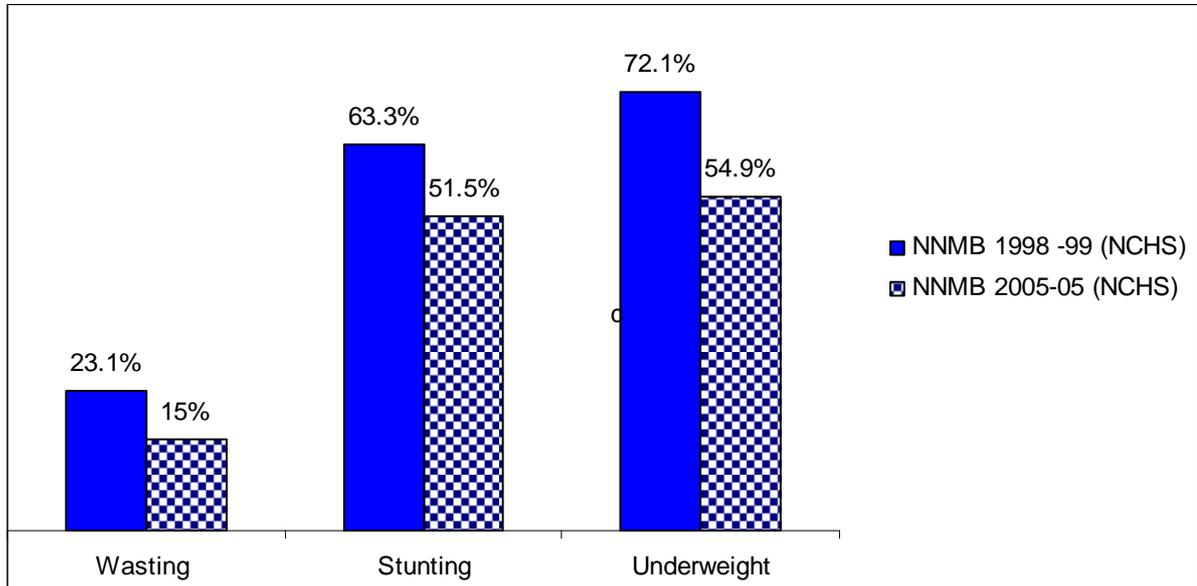
The nutritional situation in India has hardly changed in the last 30 – 35 years in terms of the global level of malnutrition. For decades, under-nutrition in India was mainly related to hunger and food insufficiency. However, over time, the underlying causes of under-nutrition have evolved and are now identified as: inappropriate children feeding and caring practices especially in the first years of life, low social and nutrition status of women, poor health and sanitation services and poor livelihood opportunities leading to casual work and migration.

Two main surveillance systems provide information about the nutritional status of the Indian population: National Nutrition Monitoring Bureau (NNMB) and National Family and Health Survey (NFHS). Since 1972, NNMB, part of National Institute of Nutrition (NIN), monitors the nutritional situation. The first National Family and Health Survey (NFHS) was organized in 1993 by Indian Ministry of Health & Family Welfare. Both sources are independent and use different methods, references and target populations. The Department of Women and Child Development, mandated to deal with under-nutrition in India, has used the NNMB data over the past 30-35 years to draw policies and measures while the health authorities mainly referred to the NFHS. Hence, as it is seen from Figure 1 and Figure 2 below, substantial discrepancies in the under-nutrition rates over the same periods of time can be seen.

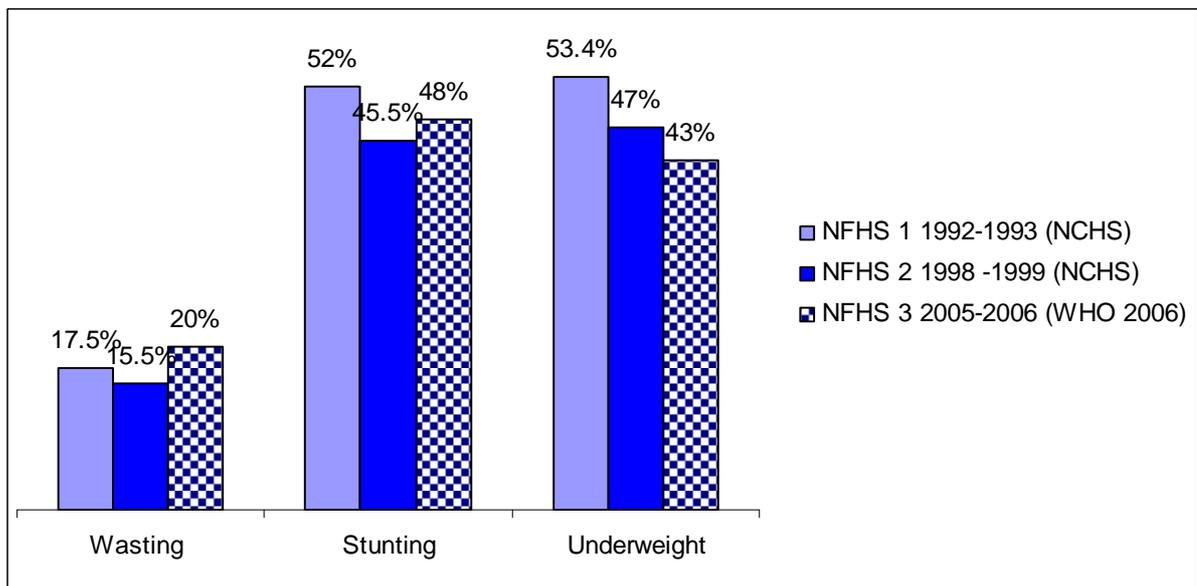
<sup>6</sup> Low Birth Weight, Country, Region and Global Estimates. UNICEF, 2000



**Figure 1:** Child under-nutrition, 1 to 5 years old,  $<-2$  SD<sup>7</sup> using NCHS reference. Rural surveys of NNMB from 1998 to 2005, (Andhra Pradesh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal).



**Figure 2:** Child under-nutrition rates (6 to 36 months  $<-2$  SD), NFHS - 2 and 3, overall Indian population (1998 to 2006).



These discrepancies can be also explained with the fact that there is **no standardized, nationally approved protocol for nutrition surveys in the country**. Secondly, these sources are more global in nature and do not give detailed district level data. A multitude of surveys was conducted by smaller governmental and non-governmental stakeholders locally but again they used different survey methodologies. These discrepancies affect comparison, analysis and interpretation of data and dims understanding of the dynamics of the nutritional situation.

<sup>7</sup> SD: Standard Deviation



The **factors contributing to constantly very high rates of under nutrition** have been analyzed by different stakeholders. Officially, the government links malnutrition with food insecurity at household level as well as with improper feeding practices<sup>8</sup> especially in Scheduled Caste<sup>9</sup>, Scheduled Tribe<sup>10</sup> and Other Backward Class (OBC)<sup>11</sup> populations. Surprisingly, acute malnutrition, even with such high rates, has been left on the margin of the causal analysis. Extreme poverty is classified as one of the basic causes. The people living Below Poverty Line<sup>12</sup> (BPL) are estimated to be from 28% (Planning Commission of India) to 77% (National Commission for Enterprises in the Unorganized Sector - NCEUS). Hence, such wide estimations of the proportion of poor in the country do not facilitate analysis of the role of poverty on under-nutrition levels.

Nutrition improvement is included in government social programmes. Public Distribution System (PDS), ICDS, Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and Mid-Day-Meal (MDM) are amongst the primary vehicles meant to prevent under-nutrition in India. However, interdepartmental coordination is not always at its best. For example, there are gaps in convergence between the services offered by the DWCD and the MoH to treat under-nutrition, especially at the grassroots level. Enormous resources are invested towards reduction of malnutrition; however, impact can best be described as limited. In addition, the health structures are challenged by remoteness, gaps in staffing and capacities to provide effective supervision. Treatment capacities for severe acute malnutrition are developed only in some states. Sanitation, especially in rural India and urban slums, is highly compromised as less than 30% of the population has proper sanitation facilities, indeed less than the population who has access to a mobile phone. As far as the situation of water is concerned, the World Bank states that India will face a severe water crisis within the next two decades and will face huge challenges in building new infrastructure for water needed by its growing economy and rising population. Some 90 percent of India's territory is drained by inter-state rivers<sup>13</sup>. The lack of clear allocation rules, and uncertainty about what water each state has a right to, imposes high economic and environmental costs.

Despite exceptional economic growth, India still has major social issues and the current economic development has not sufficiently managed to reduce these. Social discrimination on the basis of caste continues to be practiced. People belonging to scheduled castes, scheduled tribes and other backward classes remain marginalized and disadvantaged. Gender discrimination in favour of male child, has continued to oppress girl child and women. Poor women seem to be even more affected. Early marriages, low literacy among women, extreme workloads and many traditions limit women's independence and decision making capacity. Their nutrition status is generally compromised and this is transmitted to the children.

One of the big challenges to food security has been posed by global warming and the resultant climate change. Many studies show that the output of food crops is likely to be hit by the climate change-induced erratic weather, more frequent droughts and floods and other stress caused to the food crops.

<sup>8</sup> Sustainable Nutrition Security in India: A leadership agenda for Action, New Delhi, India, May 2010.

<sup>9</sup> Disadvantaged castes: castes that are officially considered disadvantaged and granted special treatment, including Dalits (reference [http://encarta.msn.com/dictionary\\_561599010/bes.html](http://encarta.msn.com/dictionary_561599010/bes.html)).

<sup>10</sup> **Indigenous people of India:** the indigenous rural communities who are officially considered disadvantaged and granted special treatment (reference [http://encarta.msn.com/dictionary\\_561599010/bes.html](http://encarta.msn.com/dictionary_561599010/bes.html)).

<sup>11</sup> **Classes involved in menial tasks:** an official categorization of people involved in tasks regarded as menial or excluded from other castes, who are considered disadvantaged and granted special treatment (reference [http://encarta.msn.com/dictionary\\_561599010/bes.html](http://encarta.msn.com/dictionary_561599010/bes.html)).

<sup>12</sup> **Below Poverty Line** is an [economic benchmark](#) and [poverty threshold](#) used by the [government of India](#) to indicate economic disadvantage and to identify individuals and households in need of government assistance and aid. It is determined using various parameters which vary from [state](#) to state and within states. National estimates of the percentage of the population falling below the poverty line are based on surveys of sub-groups, with the results weighted by the number of people in each group.

(Reference [http://www.indexmundi.com/india/population\\_below\\_poverty\\_line.html](http://www.indexmundi.com/india/population_below_poverty_line.html))

<sup>13</sup> World Bank Report – "India's Water Economy – Bracing for a Turbulent Future" Dissemination Workshop – October 5, 2005.



**Analysis on acute malnutrition has not been attempted in any major way.** In official policies, all forms of malnutrition are considered as a social phenomenon resulting from the previously mentioned factors. The pathophysiology of the most acute forms of under-nutrition and their causes are somehow neglected (see Annex 1 for a historic overview of acute malnutrition causes and treatment by Prof. Mike Golden, published in *Indian Pediatrics*). Authorities and civil society focus on “food insecurity – women’s ignorance – water-borne diseases” which are the roots of the deadliest form of nutrition disorder: the acute malnutrition. Thus, while undeniably important, governmental measures and civil society efforts are mostly oriented towards social services and preventive activities, however, considerable work need to be undertaken to provide cohesive prevention strategies for acute malnutrition or effective therapeutic treatment.

## **Nutrition stakeholders and their responses**

The nutrition sector in India includes various stakeholders, both governmental and non-governmental.

Governmental programmes are guided by the **National Nutrition Policy** (1993) of the Department of Women & Child Development (DWCD). The policy prescribes set of short term and long term measures to reduce under-nutrition rates in India. The proposed short term measures were expansion of **Integrated Child Development Services** (ICDS) (see Annex 2: Structure of ICDS) to pregnant and lactating women and adolescent girls, strengthening the immunization and oral rehydration programme, essential food fortifications and popularization of low cost nutritious foods. Since 1993, the National Nutrition Policy has not been revised (see Annex 3 for various policies related to health and nutrition in high Severe Acute Malnutrition % states of India).

The **National Health Policy** of India originated in 1983 and was revised in 2002. Some of the specific objectives of the policy are to reduce the Infant Mortality Rates (IMR) and Maternal Mortality Ratio (MMR), the TB-related mortality, malaria and other vector & water borne diseases by 2010<sup>14</sup> through the structures of **National Rural Health Mission** (NRHM) (see structure chart in Annex 4). Direct treatment of Severe Acute Malnutrition (SAM) is not in the priorities of both National Nutrition and Health policies and it is not centrally regularised. However, the state governments of Madhya Pradesh, Bihar, Jharkhand, West Bengal, Rajasthan and Uttar Pradesh have begun a process of opening of **specialized in-patient facilities to treat SAM**. The treatment protocol is based on the recommendations of Indian Academy of Pediatrics<sup>15</sup> (IAP).

Many Indian research institutions work to improve the quality of social schemes (e.g. NIPPCD). The institutes related to nutrition research in India include the Indian Council for Medical Research (ICMR) and the NIN. The NIN also works as a nodal agency for technical supervision of the National Nutrition Monitoring Bureau (NNMB). Home Science Colleges around India are the educational institutions producing nutritionists in India. However, the management of severe acute malnutrition is out of the scope of India’s education institutions. The medical colleges offer limited nutritional courses.

UN agencies dealing with under-nutrition (UNICEF, WFP, WHO, UNDP etc.) have an important place in supporting governmental programs as well as the non-governmental sector.

WHO provides technical assistance and collaborates with the Government of India and major stakeholders in health development efforts. It assists notably in Policy Development; Capacity Building and Advocacy. Technical assistance to the Government for under nutrition is provided through the following: Family and Community Health, including Reproductive Health and Research; Child and Adolescent Health; Gender and Women’s Health; Immunization and Vaccine Development including Hepatitis B; Nursing and Midwifery; Nutrition and Development and AYUSH.

<sup>14</sup> National Health policy 2002, Ministry of Health and Family Welfare, Government of India.

<sup>15</sup> “Indian Academy of Pediatrics (IAP) Guidelines 2006 on Hospital Based management of Severely Malnourished Children” (Adapted from the WHO Guidelines).



UNICEF supports the government in its objectives to reduce and prevent malnutrition, and to improve the development of children under three-years-old, especially those in marginalized groups. UNICEF is assisting the government to further expand and enhance the quality of ICDS in various ways: by improving the training of Anganwadi Workers; by developing innovative communication approaches with mothers; helping to improve monitoring and reporting systems; providing some of essential supplies; by developing community based early childcare interventions. UNICEF also provides technical training to all MTCs and NRCs in Rajasthan and M.P. respectively.

WFP focuses on combating malnutrition through investing in human resources, improving food security for targeted groups and increasing the participation of woman in various projects. Their focus is on prevention with a high impact mainly on food security.

UNDP focuses on reducing poverty and further is trying to achieve the MDGs. They also work on HIV, democratic governance, crisis prevention, energy, and more.

Despite the presence of many actors working in the field of under-nutrition for long number of years, it is obvious that their impact is either very localized or too thinly spread since the levels of under nutrition continue to remain at unacceptable levels.

Many international and local NGOs have developed strong advocacy strategies around the issues of under-nutrition. Right-to-Food Campaign, Action Aid, MSF Campaign for Access to Essential Medicines, The Hunger Project and Breastfeeding Promotion Network of India (BPNI) have developed targeted advocacy activities in order to raise public attention to under-nutrition and the insufficiencies of public services.

The main focus to combat underweight and stunting has always been through supplementary feeding and micro-nutrient supplementation. Dozens of different supplementary feeding formulas have been developed, following local taste and consumption patterns for underweight treatment. Some of the formulas, such as High Calorie Cereal Milk<sup>16,17</sup> were locally produced ready-to-use-food (RUF)<sup>18</sup>. The therapeutic values of these products have not been fully studied. The elaboration of these products has been mainly based on the normal physiological needs of children and not on therapeutic food specifications. Imported Ready-to-Use-Therapeutic Formulations (RUTF) were not allowed after a strong controversy and discussions whether or not this is the best option for India, while at the same time proper local alternatives have not been significantly and scientifically tested. Annex 5 gives detailed information on different approaches and activities developed by governmental and non-governmental actors in India.

Several forums have been formed to discuss nutrition related issues. These include Coalition for Sustainable Nutrition Security (CSNS), Solution Exchange (Food and Nutrition Security community) and Public Health Foundation of India (PHFI). Sphere India, launched in 2002, aims at contributing towards the quality of humanitarian response by ensuring improved coordination among various stakeholders involved in humanitarian work in India.

The multitude of governmental and non-governmental research and educational stakeholders working actively in the field of under-nutrition has not been completely able to provide meaningful solution to the problem of acute malnutrition. High under-nutrition and acute malnutrition rates persist in the background of the “shining” India of exemplary economic growth. The issue has transformed to an object of high political criticism and sensitivity which, to some degree, restricts constructive dialogue, coordination and collaboration between stakeholders. The blockage over RUTF use has additionally created suspicions towards international NGOs and delays further de-freezing of the situation.

<sup>16</sup> A.N. Singh, et al., “Locally Made Ready-to-Use Therapeutic Food for Treatment of Malnutrition: A Randomized Controlled Trial,” Indian Pediatrics, August 2010, Volume 47 (8); 679-86

<sup>17</sup> Anuradha Bose, Addressing malnutrition through Practice - The experience at Christian Medical College, Vellore, <http://www.ibfanasia.org/gc/Anuradha-Bose.pdf>

<sup>18</sup> Solution exchange, October, 2009.



## Gaps at national level

In analyzing the nutrition situation in India, contributing factors, different strategies and activities to reduce under-nutrition, several gaps are identified as below:

- Lack of a common definition of malnutrition in India: the term “malnutrition” is largely used by all stakeholders but they do not speak the same “nutrition language”. Except micronutrient deficiencies, the rest of under-nutrition forms are often confused (wasting vs. stunting vs. underweight vs. four-grade IAP classification vs. three-grade WHO standard reference). The official statistics use underweight as main indicator to describe child under-nutrition but there are important discrepancies in the definition of this term. In practice, the IAP four-grade underweight classification, expressed in % of the NCHS median, is confused with underweight expressed in Z-scores using new WHO reference population. Global acute malnutrition (weight-for-height <-2SD) rates are rarely analyzed or interpreted. Separate analysis of the severe acute malnutrition level is missing.
- Detection of malnourished cases is based on the underweight indicator in ICDS structures during growth monitoring. Underweight is a combined indicator of both stunted and wasted children. Additionally, children with Low Birth Weight can be mixed in the same group. Thus, it is difficult to diagnose the real nutrition status of each individual and eventually implement proper management accordingly. This could a) mask the urgent need of therapeutic treatment of child with severe wasting, b) mask the ineffectiveness of intensive supplementary feeding (if the diagnosis is chronic under-nutrition), and c) increase the average length and cost-efficiency of the treatment (when it is implemented). In addition, the coverage of “growth monitoring”<sup>19</sup> by ICDS remains very limited<sup>20</sup> and largely unreliable. A series of reasons have been identified as to why there are gaps in growth monitoring, including unavailability of charts in some Anganwadi Centres, lack of weighing scales or non functional weighing scales in others, lack of training of Anganwadi Workers and resistance by mothers at having their children weighed (some maintained a belief that weighing may caste spell on the child). In many areas where growth monitoring is performed, weights were plotted incorrectly; In many cases, Anganwadi Workers were unable to interpret a flattened growth curve, were unable to use weighing scales, lacked knowledge on the sequence of steps involved in growth monitoring and were irregular in recording<sup>21</sup>. There is no active early detection of malnourished cases either at community level or health structures<sup>22</sup>.
- Severe acute malnutrition is mixed with all other forms of malnutrition, not only concerning its diagnosis but also the analysis of its causes. It is mostly considered, together with all the remaining forms as a social issue and not always as a public health issue. Subsequently, the measures undertaken in national policies and strategies to tackle under nutrition issues are also social, and the public health system is largely disengaged from working on under nutrition. This would explain the lack of proper nationally implemented protocol for management of severe wasting from prevention, through detection, to treatment and follow-up.

<sup>19</sup> Growth Monitoring is one of the basic activities for children under-5, by which Anganwadi Workers are expected to keep a regular track of the growth of a child through indicators including weight and age at regular intervals. It consists of routine measurements (monthly for children under 3 and 3-monthly for children between 3-6 years) to detect abnormal growth. In ICDS centres, growth monitoring is done with the help of growth charts based on weight for age as per WHO child growth standards (2006), while in some other ICDS centres it is done based on the four grade IAP classification used for under-5 children in India (weight-for-age index in % of the median NCHS reference).

<sup>20</sup> Analyzing the annual report of ICDS for 2009, around 72 million children from 6 month to 6 years old have been covered by supplementary nutrition and approximately 62 million benefited from growth monitoring. This represents roughly ¼ of the potential children for growth monitoring.

<sup>21</sup> Kapil U, et al., “Status of Growth monitoring activities in selected ICDS projects of Rajasthan,” Indian Pediatrics, November 1996, Volume 33(11): 949-52.

<sup>22</sup> The health structures at community level are enabled to detect only visible signs of malnutrition using Integrated Management of Neonatal and Childhood Illnesses (IMNCI) methodology.



- There is a complete lack of community based management of SAM in India. There are experiences worldwide in treatment of SAM at community level, models which demonstrate that through community engagement much larger coverage can be achieved. Following worldwide experiences, international standards have been developed, tested and brought to scale.
- India does not have a regular nutritional surveillance system despite high levels of malnutrition. The NFHS1, 2 and 3, and the surveys of NNMB cannot detect seasonal or quick variations or pockets of under-nutrition. Local surveys done by NGOs could give more detailed malnutrition prevalence but because of lack of standardized nutrition survey methodology in India, their results cannot be compared.
- The level of available technical capacity on acute malnutrition is very low. Acute malnutrition is not sufficiently included in the curriculum of both medical and home science colleges. Consequently, the interest for university research on acute malnutrition is very limited.
- Community level prevention activities such as hygiene promotion, provision of access to safe drinking water and sanitation and promotion of proper care practices for women and children have proved to be rather inefficient since any such programmes have largely failed to change behaviours or to improve livelihoods. In addition, the potential of community workers (such as Accredited Social Health Activists - ASHA) is not utilized when it comes to issues related to detection and prevention of under nutrition.
- The linkages between different governmental schemes and services aimed at prevention of malnutrition are very weak. Families having malnourished children do not always benefit from priority access to PDS or MGNREGA. However, with the proposed Atal Bal Mission<sup>22</sup> in M.P. there may be a possibility within PDS of providing weekly or fortnightly rations instead of monthly. Furthermore, for tribal populations, attempts would be made within the Atal Bal Mission to provide full weekly rations at subsidized rates through the PDS and especially those families having moderately or severely malnourished children would be taken into consideration, through the special schemes of the Tribal Welfare Department. Efforts will be made by MGNREGA to increase employment to 200 days from the present 100 days<sup>23</sup>. The lack of integrated reporting, monitoring and analysis on the impact of these schemes on malnutrition leads to insufficient flexibility and lack of adapted readjustment of the services.
- Civil society members hold differing positions as far as possible solutions to the problem are concerned. The gaps in coordination and exchange amongst nutrition stakeholders have not helped the task and naturally hamper their power to influence governmental policies and strategies.
- Lack of convergence between the various services offered by the DWCD and the MoH is identified as one of the most fundamental gaps to addressing under nutrition within the country. Refer to Annex 7 for elaboration on the main gaps in convergence of services between DWCD and NRHM.

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<sup>23</sup> Atal Baal Aarogya Evam Poshan Mission (Atal Child Health and Nutrition Mission), Draft Mission Document, Department of Women and Child Development, Government of Madhya Pradesh, Bhopal 2010. The M.P. state government is taking this initiative to address the issues of under nutrition in a MISSION mode. This MISSION reflects the seriousness of the M.P. DWCD in addressing a critical issue affecting the lives of about 11.5 lakh (1,150,000) children suffering from severe wasting. The draft Mission Document is a comprehensive document covering a range of issues related to under nutrition.



## Rajasthan

### Background and nutrition status of the population of Rajasthan

Rajasthan is the largest state in the Republic of India, situated in the northwestern part of the country. In terms of area, it covers 342,239 square km, representing 11% of the total geographical surface of the country. The population of Rajasthan according to the census of 2001 was 56.47 million and now is estimated to be about 58 million<sup>24</sup>. The capital city of Rajasthan is Jaipur and Hindi is the official language of the state, however most people speak some indigenous Rajasthani dialects and tribal languages.

#### Other important statistics for Rajasthan:

Current population growth 130,000 per annum  
 43.3 million live in rural areas  
 932 females for 1,000 men in rural Rajasthan  
 67% Households have migrant member(s)  
 22,500,000 Desert population  
 Inflation rate 11.50 %  
 Urbanization ratio 22.88 %  
 (Various sources)

Rajasthan is divided into 33 administrative districts, which are in turn grouped into seven divisions: Bikaner, Jaipur, Kota, Udaipur, Jodhpur, Bharatpur and Ajmer. Each district consists of blocks/tehsils<sup>25</sup> divided into Gram Panchayat<sup>26</sup> regrouping several villages (see Annex 6: Administrative Structure).

The main geographic feature of Rajasthan is the Aravali Range which splits the state into 2 geographical zones – desert on one side and forest belt on the other. Climatic conditions of Rajasthan are generally dry. The soil and vegetation alters with the varying topography of the state and the availability of water. The main crops are wheat, barley, pulses, gram and oilseeds. Rajasthan is the second largest producer of oilseeds and the largest producer of edible oil within the country. Apart from agriculture, Rajasthan is the second largest producer of polyester and cement in India, and the largest producer of wool, marble and sandstone. Improved infrastructure and transportation facilities, even to the remotest areas of the state, contribute to development of industries.

Population density in the state varies from place to place with the desert region having 60-70 people per square km and other parts up to 200 people per square km. The main religions here are Hinduism (88.8%), followed by Islam (8.5%) and Sikhism, Jainism and Sindhism account for less than 2%<sup>27</sup>. According to the last census (2001), the Scheduled Tribe population of Rajasthan constitutes 8.4% of the total Scheduled Tribe population of India and 12.6% of the total population of the state. 69% of the Scheduled Tribe population practices agriculture.

The Government of Rajasthan made a substantial effort in providing public services: the road infrastructure is very well developed, and today even most remote villages in the desert are connected by road. There have been some successes in meeting the potable and domestic water shortages in the state mainly by efforts of the state government. The public health structures are relatively well developed and correspond to the national norms. However, the very scattered population in Thar Desert and Bhil zones presents a challenge for access to healthcare. The ICDS has been recently extended in some remote and scattered populations through Mini Anganwadi and Anganwadi "on demand"<sup>28</sup> initiatives.

<sup>24</sup> World Bank, 2009.

<sup>25</sup> Tehsil is an administrative unit hierarchically above the local city, town, or village, but subordinate to a district.

<sup>26</sup> Gram Panchayats are local governments at the village or small town level in India. A gram panchayat can be set up in villages with minimum population of 300. Sometimes two or more villages are clubbed together to form group-Gram Panchayat when the population of the individual villages is less than 300. Members of Gram Panchayats are elected members who are assisted by a small number of officials.

<sup>27</sup> Census 2001.

<sup>28</sup> Communities (rural and urban) are entitled to an "Anganwadi on Demand" if there are more than 40 children under the age of six and there is no provision of an Anganwadi Centre. The state governments can submit requests for Anganwadi Centres based on their needs.

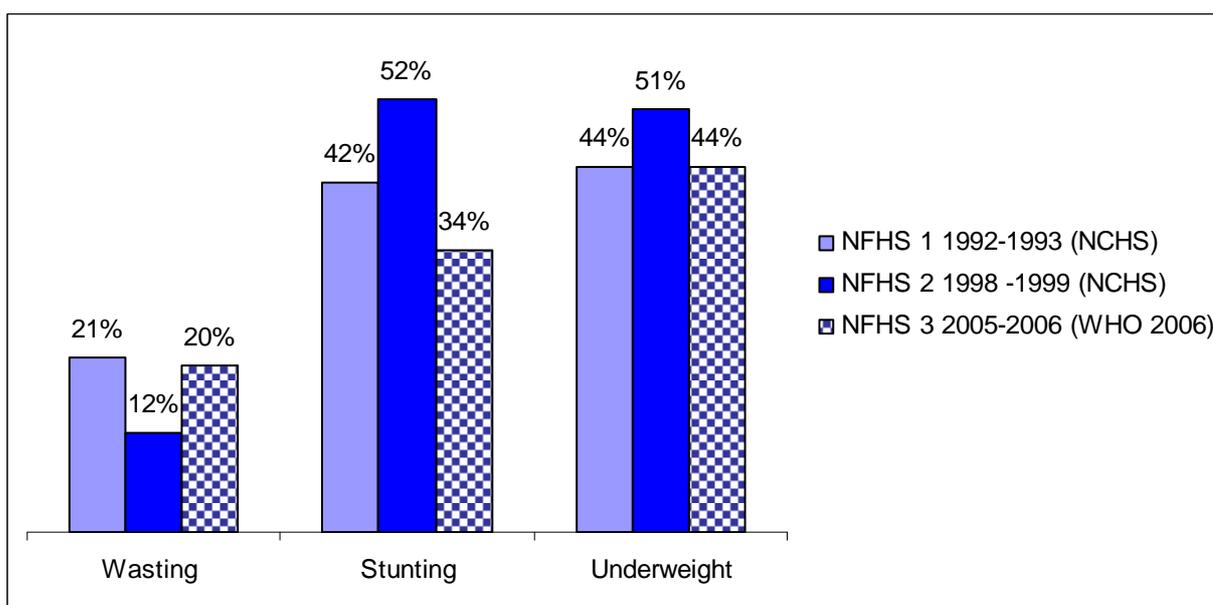


The NFHS-3 in 2006 found that 20% of children under-3 years of age in Rajasthan were wasted, 34% were stunted and 44% were underweight. 20.4% of the children under-5 suffered from wasting and 7.3% suffered from severe acute malnutrition. This means that about 620,000 children in Rajasthan needed emergency treatment in 2006. Same source has shown that adults are the next most affected group by under nutrition: 33.6 % women and 33.8 % men were found to be too thin compared to their height (BMI < 18.5).

From the demographic groups, children from Schedule Tribes had highest prevalence of SAM (8.4%) compared to children from Schedule Castes (7.4%) and Other Backward Classes (5.2%). Infant mortality rates are similar in urban and rural Rajasthan with an average of 65 deaths per 1,000 live births in the last few years.

The under-nutrition rates fluctuate differently by category in Rajasthan. If the stunting has seen an important decrease between NHFS-2 and NFHS-3, underweight remain relatively high (close to the national average of 43%) and wasting has worryingly increased (see Figure 3 below). However, data from NFHS 1, 2 and 3 are hard to compare as they used different target populations. In 1992, (NFHS 1) children under 4 years of age were surveyed, 1998 (NFHS 2) children under 3 and in 2005-6 (NFHS 3) children under 5 and 3 were used as the target population.

**Figure 3:** Nutritional status of children under-3 in Rajasthan: stunting, wasting and underweight (<-2 SD).



## Field observations

Five districts were identified for field situation analysis in Rajasthan: Bikaner, Tonk, Baran, Udaipur and Rajsamand (see maps in Annex 8).

### Bikaner, Thar Desert

The district of Bikaner is in the center of Bikaner Division (population of 529,007, Census 2001). The district has 5 blocks of which the assessment team visited three, namely Kolayat, Nokha and Lunkaransar. Bikaner is a part of the Thar Desert, is sparsely populated, with about 61 people per



square km, and has one of the lowest sex ratios (889 females for every 1,000 males) in the state. Bikaner's rural population is 80% rural and 20% of the population belongs to a Scheduled Caste<sup>29</sup>.

The development of infrastructure in the Thar Desert makes it the most populated desert in the world. A livestock based economy is the main livelihood source for most people in the Thar Desert. Traditionally, the main locally cultivated crops are lentils and millet as well as drought resistant local grass for animal fodder. However, modernization in recent times has created new opportunities especially in the domain of the cash-crop based agriculture using irrigated land. This relatively recent development has made people more dependent on water and has consequently increased their vulnerability to climate change.

In the desert, people are mostly dependent on rain. The worst desert lands are inhabited predominantly by Scheduled Caste communities, for whom lack of rain is a driving factor for economic migration. Unfortunately, local possibilities for migration are rather limited and wages for casual labour for richer farmers, casual labour in larger cities, brick making and mining are low. Many of the people just wait in hope for rain and survive on the tiny wages from MGNREGA.

The **governmental services** available in the area struggle to reach the desired quality and coverage: the population is scattered and mobile, especially in villages (see Annex 9). One village can be made of 200 hamlets spread over an area of 30 km<sup>2</sup>. Around 1,500 ICDS centres are known to exist in Bikaner District. The district is covered by PDS and MGNREGA. The primary health services are relatively well developed but still understaffed (383 sub-health centres for 923 villages)<sup>30</sup>. There is only one hospital, 10 community health centres and around 38 primary health centres. The district NRHM faces difficulties to recruit ASHAs as the majority of the candidates have not completed the required 5<sup>th</sup> grade of schooling.

The **ICDS centres** are expected to deal with malnutrition. Unfortunately, apart those the NGO URMUL<sup>31</sup> runs in the area, the assessment team did not find one centre open in the visited villages.

The **Malnutrition Treatment Centre (MTC) at Bikaner Divisional Hospital** is not operational but the ward is almost ready to be opened with a bed capacity of 20. Obviously the hospital management invested heavy efforts and funds to provide quality treatment and make it a centre of excellence. However, the hospital staff did not know about the financial arrangements (not clear about the budget allocations for the centre) and on how the link with the community health structures would work.

At the time of the assessment, in April 2010, no service for SAM treatment was available in Bikaner.

Various meetings and focus discussions with communities have shown that women were aware about the visible signs of malnutrition; they had a clear idea why a child can become malnourished, the importance of first milk, benefits of exclusive and frequent breastfeeding, need of complementary feeding, links between bad hygiene and illness, as well as where to go when children are sick. The main problems of people remain water availability making the proper care for children difficult. The time to fetch water and its cost were very high in their view. Low family income and access to quality free healthcare services were mentioned as other reasons limiting their capacities for proper care.

<sup>29</sup> National Census, 2001.

<sup>30</sup> District Level Household and Facility Survey 2007 – 2008, Rajasthan.

<sup>31</sup> Established in 1972, URMUL Trust represents a family of organizations working towards social and economic change in the lives of the people living in the harsh climatic conditions of western Rajasthan. Their mission is "to lead the poor towards self-reliance by making available to them a package of development services that they themselves decide on, design, implement, and eventually finance."



### Case study, Divisional Hospital of Bikaner

This girl is almost three years old. She was admitted in the emergency paediatric ward 3 days ago. The mother explained that they come from the “canal belt” and her daughter was sick for 1 month. In the beginning, she had diarrhoea and then she refused to eat. So, after one month, the mother managed to reach the nearest sub-centre and from there she was referred to the hospital. By the time they arrived in Bikaner, the girl wasn't conscious. In the hospital, they tried to re-hydrate her but it didn't work. She was diagnosed with severe anaemia so urgent blood transfusion was necessary. After three days in the hospital, she is still unconscious. Until this moment, there was no re-feeding possible. The future is uncertain... (ACF assessment team, Bikaner)



### Tonk, urban poor

District of Tonk (pop. 1,211,343) is small but relatively densely populated (around 170 inhabitants per km<sup>2</sup>). The district is semi-arid with some rocky hills. The team visited Tonk City (population of 135,663, Census 2001) in order to gather information about the situation in poor urban zones of such small and medium type of towns. The team was hosted by a local NGO CECOEDECON<sup>32</sup>.

The poor urban wards in Tonk are mainly inhabited by Muslims. In fact, the Muslim population represents 32%<sup>33</sup> of the total Tonk population. The chronic poverty within the Tonk Muslim community is emphasized by the very low social position of women: limited working opportunities, high illiteracy, early marriages and pregnancies, wearing of *burqa* from very early age, low level of institutional deliveries (only male doctors are available in the hospitals and community health centres), large family size (around 10 members on average).

The rolling of cigarettes (*Bidi* rolling) is the main source of income in most families. In almost all houses, all women and adolescent girls work from dawn to sunset to roll 1,000 cigarettes which will earn them a maximum of Rs 50-60 per day. Men are mainly rickshaw drivers, for which the maximum wage per day is around Rs 100. No other major work opportunities are accessible. The city faces important shortages of drinking water and huge sanitation and sewage problems. The city council provides free drinking water with tankers to poor areas but it is highly insufficient and irregular to cover the needs (15,000 litres for 30-35 families for several days until the next water tanker shows up). Sanitation seems to be disastrous in the city; there is hardly any sanitation facility.

According to CECOEDECON records, every fourth child in the city's 13 poor wards is underweight. The referrals to the Malnutrition Treatment Centre in the district hospital leave much to be desired. According to local community members, people generally refuse to avail MTC services as they do not appreciate the quality of the service. They also affirm that the quality of the treatment went significantly down with turnover of medical staff, and gaps in regular refreshment trainings. There are fewer than expected ICDS Centres (more than 1,000 people per AWC) in the area. Out of some 30 AWC, only 2-3 provide supplementary nutrition on regular basis. Because of irregularity of the supplies, supplementary nutrition is often provided only to BPL families. Another problem of ICDS in the city is that they often

<sup>32</sup> Centre for Community Economics and Development Consultants (CECOEDECON) was founded by a small group of young, committed social workers to provide immediate relief to the victims of devastating floods in Jaipur district in 1982. From a very modest beginning as a relief agency, CECOEDECON has evolved into a civil society organization pursuing integrated participatory development and advocating human rights.

<sup>33</sup> National Census 2001.



change location as they work from rented spaces (no space for new construction). Anganwadi Workers met in Tonk complained of problems of coordination with the self-help group preparing the rations<sup>34</sup>. Growth monitoring seems to be a problem as the measuring scales need to be replaced. However, a quick look at the growth monitoring charts revealed that in fact the Community Health Workers of CECOEDECON (and not AWWs) compile growth monitoring information. However, AWWs have and are able to compile a referral sheet for health services for the MTC.



The CECOEDECON workers highlighted that growth monitoring is necessary but some women are afraid that measuring will put a spell on their children. Also, some mothers were not aware of the services in MTC.

Drinking water and sanitation were the biggest concern expressed by communities in Tonk city.

The **MTC in Tonk** Hospital is one of the oldest in the state (from 2006) and is widely supported by UNICEF. The centre has 6 beds, an independent kitchen and sanitation facilities. Training materials related to the protocol are pasted on the walls. The feeding is *in situ* prepared. Local F-75 and F-100 formulas as well as catch up diets of local foods (dalia<sup>35</sup>, khichdi<sup>36</sup>, etc.) are cooked. There were three children under treatment at the time of the visit and one of them not malnourished. All children referred from the AWC and those referred from the Out-Patient Consultation at the hospital are unconditionally admitted in the centre. The discharge is upon doctor's decision and the staff would need further training on protocol including discharge criteria.

<sup>34</sup> In a major initiative to empower women in villages and generate employment for them, the government has dispensed with the centralized system of procuring food items under Supplementary Nutrition for the beneficiaries of ICDS and entrusted the responsibility of preparation of food items to Women's Self Groups under the supervision of the Gram Panchayat. The women's self-help groups receive funds in advance for procuring raw material and preparing food items in accordance with menu recipes and supply schedules so that their activities are not hampered for want of funds. However, the system does not function efficiently and there are problems such as delayed services, delayed payments, poor quality food for the reason that the standard ingredients are not used in the correct proportions due to the fluctuating/high cost of some ingredients, and in general lack of responsibility and coordination as mentioned above.

<sup>35</sup> Oat Porridge.

<sup>36</sup> Rice and Pulse mix.



## Baran, Sahariya Tribe

In Baran, the assessment team was guided and supported by local NGOs CECOEDECON and Sankalp<sup>37</sup>. Baran District (pop. 1,021,653) is known to have around 21% tribal population, a very high proportion being of the Sahariya Tribe. Furthermore, there are two blocks in the district where Sahariya Tribe population is in higher concentrations: Shahabad and Kishanganj (respectively 30% and 32%). A significant number of Sahariya also live on the other side of the border, in Madhya Pradesh: Sheopur, Shivpuri and Guna Districts.

The Sahariya Tribe is one of the indigenous tribes of India included in the list of Scheduled Tribes. Despite special programmes aimed to improve their situation, this population seems to have difficulties to quickly adapt to changes. Traditionally jungle product gatherers and sedentary, the Sahariya from Baran currently migrate twice a year together in family to neighbouring Kota and Sheopur in search of agricultural casual labour.

In 2002, during extremely severe drought in Shahabad Block, many deaths were reported from the area, attracting a lot of attention from media, NGOs, UNICEF and government. Since then, Sahariya Tribe has specific rights to free drugs and free rations from the PDS. In addition, the state government is constructing 6,000 houses for Sahariya families in Shahabad District.

Communities raised several problems affecting their lives, including limited productive land ownership, seasonal migration which does not allow them to raise livestock and limited availability of forest produce due to deforestation. They find that wages from casual farm labour are good but their inability to transport and stock the earned quantities of wheat make them sell it at lower than the market prices. Communities mentioned that services are not available for their children at the migration places and many children return back home sick. While medicines for them are free, generally these are not available at public health structures and have to be purchased from the market.

Out of 4 ICDS Centres, only one was functional. Generally women go to ICDS Centres to collect their weekly ration of take home supplementary nutrition for them and their children. The mothers are aware of the MTC in Shahabad, and some even mentioned that their children have been treated there. The sub-centres and community health centre were not able to show any tracking of referrals to MTC or follow up of discharged children. Related to the higher vulnerability of the local population, a Malnutrition Treatment Centre was set in August 2006 in the CHC of Shahabad Block with UNICEF support. The centre has all necessary material for treatment. However, there are important gaps in implementation of the treatment protocol. **The MTC in Baran** is the next reference (the first reference being Shahabad MTC) for SAM treatment in the area. The MTC in Baran was inaugurated in April 2006 and recently was moved to a newly rehabilitated ward. The treatment was of better quality than in Shahabad but both the facilities were almost empty, confirming the shortcomings in the referral system.

At the end of 2009, the ICDS, together with UNICEF and the Department of Health, organized mobile camps for treatment of all children detected with severe underweight in the 1,323 AWCs of the district. From 8,160 children detected malnourished, 6,805 pre-school children attended and passed the medical check-up of a paediatrician. 329 children were referred to their nearest MTCs. The ICDS management hopes to have an impact on under nutrition via such campaigns in the district.

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<sup>37</sup> Sankalp is a grassroots local NGO working mainly with Sahariya Tribe.



This mother has two sons: Sabsing, 9 months old and Kiraan, 3 years old. She gave birth to her first child when she was 16 years old. Nine months ago she and her older son Kiraan stayed in Shahabad MTC for 10 days. He was very weak and while staying there he gain around 2 kg. Now he is weak again, and his brother is also very weak. They have just come back after working to collect another farmers' wheat harvest. They also collect gum from the forest and her husband works in NREGA. (ACF assessment team, Kasbathana Village, Shahabad Block)



### Udaipur and Rajsamand Districts, Bhil Tribe

The Bhil Tribe is second largest tribe in Rajasthan (2,805,948, Census 2001). They are spread in different districts but have higher concentration in the southern parts of Rajasthan (Udaipur, Rajsamand, Dungarpur, Banswara and Sirohi Districts) and close to the border with Madhya Pradesh. The areas that Bhil inhabit are generally hilly and arid. Villages are extremely spread: hamlets are generally on the top of hills and it can be seen on the horizon that almost each hill has a house on top. The water sources are mainly wells and hand pumps and the cultivation land is squeezed between the hills. The staple food is maize and all possible preparations of it. Bhil traditionally engage in forest produce collection: honey, gums, forest fruits, tendu leaves for bidi/cigarettes. When the income from forest produce is not enough, males migrate to factories in Gujarat for construction work.

The higher vulnerability and lack of effective coping mechanisms in the tribal population is partly due to their low educational level and the existing discrimination. The tribes are often exploited: they are meagrely paid for some precious produce collected in the jungle and sold to the pharmaceutical corporations. The people's lifestyle has changed and has become more cash oriented: for example, produce collected in the forest is sold in the market rather than consumed at home (honey, tendu, jammun and other fruits).

Visits to ICDS Centres and public health centres such as CHCs and PHCs confirmed the limited capacity for detection, referral and treatment of severe wasting and the lack of linkages between the services.

In the areas visited in Udaipur and Rajsamand Districts, a local NGO, ARTH<sup>38</sup>, has developed innovative ways to provide primary health services. ARTH implements low cost services, building the capacities of para-medical staff and is demonstrating that in remote areas with shortages of medical doctors, quality services can still be provided by well-trained para-medical staff. Their PHCs are open 24 hours and are linked with government schemes (maternity benefits for institutional deliveries). The services are recognized by the government healthcare system. The PHCs have teams of community workers who are multi-skilled to motivate villagers to avail health care. The workers are equipped with weighing scales and MUAC tapes to enable them to detect and advise on malnutrition.

<sup>38</sup> Action Research and Training for Health (ARTH) is a private, non-profit, research and training organization that was established by a group of professionals in 1997 with the intent to contribute to the improvement of health status among underprivileged communities in India. ARTH focuses on the health needs of marginalized rural and urban slum inhabitants, as well as on those of vulnerable groups like adolescents, women, migrants and unorganized labor.



Sovan is 1.5 years old. He was prematurely born and he was not able to suckle properly, so his mother was preparing to bottle feed him. However his growth rate was very slow and was almost always sick and very weak. One month before this photo was taken, he and his mother were referred to the MTC in Nathdwara (Rajsamand District). After 9 days he started gaining weight but suddenly he got diarrhea, his belly swelled and he began to vomit. Unhappy, the mother left and went to a private doctor in Udaipur. The child was stabilized after 3 days but he still doesn't eat properly. (ACF assessment, Udaipur)

According to the District Medical Officer of Udaipur District, the blocks of Kotra, Kherwara and Dharwada are most affected by malnutrition. People living in these areas are very scattered, affected by water shortages, low educational level, early marriages, low income opportunities and migrations. The main priorities of the health department are to reduce IMR and MMR, as well as the implementation of the First Referral Unit<sup>39</sup> system in NRHM. The only malnutrition treatment facility in the districts is in the Medical College Hospital in Udaipur, though 4 new MTCs will be established in 2011 in Kotra, Kherwara, Salumber and Jhadol CHCs. The Medical College Hospital has opened a MTC more than a year ago. Currently the centre is also used for blood transfusions for thalassemia patients. Unfortunately, the centre does not implement the IAP recommended protocol, meaning that in practice the service does not function properly.

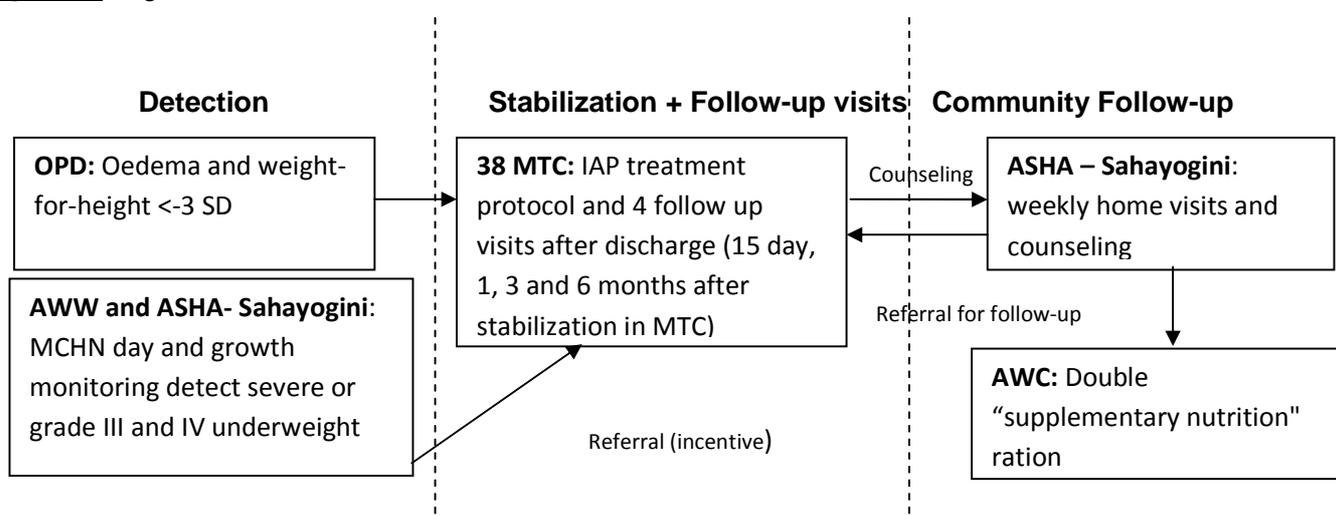
<sup>39</sup> First Referral Units (FRUs) were inaugurated in 1992 to bring down Maternal Mortality Rates. Efforts were initiated with the implementation of the Child Survival and Safe Motherhood (CSSM) Programme for upgrading the existing community health centers and sub-district hospitals into First Referral Units (FRUs), to be equipped for providing emergency obstetric care to pregnant women with complications. Over the years, a number of steps have been taken under the Reproductive and Child Health Programme for making the FRUs operational. Despite the efforts, not many FRUs identified by the State Governments have become fully operational for provision of 24-hour Emergency Obstetric and Child Health care services.



## Governmental services and under-nutrition

The ICDS/AWC and MTCs are the two main structures designed to address under-nutrition in Rajasthan. The flow and the articulation between ICDS and Health services works as presented below:

**Figure 4:** Organization of SAM treatment flow





Kunaram, 8 months of age, lives with his family in Kherwada Block. He is sick since sometime, he has diarrhea and cough. After consulting different private doctors in their village, he was finally admitted to the hospital. He is here since 7 days. The mother was advised to stop the breastfeeding and the nurse put a naso-gastric tube as Kunaram was refusing to eat. Since 2 days he searches for mother's breast but he is not allowed: he has to take the skimmed milk from the hospital canteen mixed with a little porridge and some minerals through the tube.

Nani, 3 years old, comes from Jhadol Block. She was walking and healthy but something happened to her stomach and she refused to eat. Since two days she is in the hospital and today she has been prepared for perfusion...

38 MTC (33 in district and college hospitals and 5 at Community Health Centers) have been gradually opened in Rajasthan since 2006. Initially MTCs were piloted by UNICEF in 7 district hospitals and later the Department of Health decided to expand this initiative to all districts. Each MTC has a minimum of 6 beds and provides 24 hour nutrition treatment services. The treatment protocol follows the IAP recommendations from 2006. Severely wasted children are supposed to be referred to the MTC by AWW after being detected as underweight grade III or IV or severe underweight (in the locations where the new WHO Growth Charts have been implemented) or from the hospitals' Out-Patient Departments (OPD).

The referral and the stabilization of the patients are incentive based (Rs100<sup>40</sup> for referral and Rs 65 per day of stay in MTC to the patient). The rest of the activities (home visits and referral back to MTC for follow-up medical visits) do not have a provision for incentives. Each MTC has 4 dedicated nurses but there is no nutritionist or feeding specialist. The initial provisions for MTCs were of Rs 50,000 from the health budget and some additional support from UNICEF (fridge, scales, tools and counseling materials, micronutrients, etc.).

The MTCs in the public health services are comparatively new, but even those which are 3-4 years old have not yet started meeting the expectations to provide proper facility based SAM treatment. The visits in 5 MTCs in Rajasthan have shown several weaknesses:

- MTCs were empty, or with only 2-3 patients. At the same time, numerous severely malnourished children were detected in villages. The population awareness about the existence of MTCs was relatively low.
- The treatment protocol is insufficiently implemented: perfusion drips, micronutrient supplements of all sorts, no feeding monitoring, admission and discharge criteria are unclear for the staff and the treatment emphasis is on the medical side and not the feeding. The staff is generally not aware

<sup>40</sup> 1 Euro = 60 Rupees



about the potential danger of dehydration, Iron and Vitamin A supplementation and antibiotic efficacy in some particular cases of severe wasting.

- Maximum length of treatment is 10 days. It was noted from the records that the follow-up visits reach only about 1% of the patients and this is only for the first visit. As the follow-up visits are substantial part of the treatment protocol, *de facto*, none of the children can be reported as cured as none of the children ever complete all 4 follow-up visits in MTC. Currently, the reporting on how many children were enrolled is available but no efficiency indicators are followed.
- No therapeutic support after discharge from MTC. The double supplementary ration provided in AWC is not therapeutic, meaning that this ration do not respond to the physiological and metabolic needs of the affected children, and on the contrary, can be harmful for some severely malnourished cases (Kwashiorkor, for example).
- Individual monitoring and reporting is very scarce and does not give a rapid snapshot of the situation. The individual monitoring data are spread over 3-4 different follow-up sheets.
- There are only medical staff and no dedicated nutritionists in MTCs. The staff currently in charge needs regular refreshment trainings.

In order to improve the coverage, quality of the treatment and the referral system, several additional steps will be undertaken by Department of Health next year: MTCs will be studied for efficiency, another 100 MTC will be opened in selected CHCs and First Referral Units at village level will be organized. In order to respond to infant mortality, including mortality related to LBW, Sick Newborn Care Units will be also established at CHC and PHC level. In that regard, a new maternal scheme is currently piloted under the name of “Kaleva” providing 6 meals for 2 days to mothers after delivery. The aim is to retain mothers in health facilities in order to insure timely use of the colostrum and avoid postpartum haemorrhage.

**The ICDS with its six-component programme** is supposed to prevent and at the same time cure malnutrition. The monthly Mother-Child Health and Nutrition (MCHN) day is the day when a lot of the activities (supplementary nutrition, health check-up, immunization, women and adolescent girls’ health & nutrition education, preschool non formal education, referral services) are conducted in close collaboration with ASHA-Sahayogini and ANM from the closest SHC. For families refusing to attend a MTC, a double ration of supplementary food is provided until recovery (moderate/severe underweight or above grade III).

The findings from the field visit confirmed certain insufficiencies in both ICDS and MTC in addressing under-nutrition. The weaknesses identified in ICDS system primarily concern:

- Gaps in skills in implementing growth monitoring and providing health & nutrition education.
- Component of “Supplementary nutrition” predominates over all the other ICDS activities. The pre-school education is particularly compromised.
- The Self-Help Group methodology for supplementary feeding, at places, does not work or is poorly implemented.
- Weaknesses in supervision and reporting resulting in closed or non-functional AWC.

Questions concerning the efficiency of the double ration to undernourished children and the impact of supplementary ration on the nutritional status of pregnant and lactating women can be raised (for example does the LBW decrease and is lactation improved after these interventions, how far the ration is indeed consumed, how many severely malnourished children have been rehabilitated with the additional supplementary ration, etc.). However, despite some conceptual and many operational weaknesses, the ICDS remains a source of great potential opportunity and is closely supported and supervised, especially for malnutrition prevention.



Communication between village level health workers and ICDS structures, namely AWW and ASHAs – Sahayogini<sup>41</sup> is visibly very strong. Unfortunately, the rest of the health structures are in practice not involved in that communication as far as under-nutrition is concerned.

Linkage between MTCs and ASHAs does not exist in practice. MTCs disengage with the children as soon as they are discharged from the hospital; they do not know how many of discharged children will continue to receive support from the ICDS or from ASHAs. Follow-up visits done by ASHAs are not recorded and therefore cannot be monitored.

## **Under-nutrition contributing factors (based on interviews with communities)**

The choice of coping mechanisms and livelihood strategies plays an important role in the contributing factors leading to the low nutritional status of the visited communities (see Annex 1: Causes of Under nutrition Framework).

The political stability and economic growth in Rajasthan remain important background elements for the increase of **livelihood assets** in communities. However, processes of marginalization and impoverishment related to social inequalities, especially for SC and ST, are observed. People from these communities are subsequently most affected by food insecurity and most vulnerable to the recent increase in food prices. The same communities still have the highest female illiteracy (61% never been in school compared to 41% for India overall) and the gender discrimination practices (female infanticide /foeticide, early marriages, limited access to schools for adolescent girls).

Desertification and 20 years of continuous drought in the Thar Desert of Rajasthan has limited the livestock rearing and farming practices since these are dependent on rain. Deforestation, especially in the tribal zones, has limited traditional forest produce collection. The water dependent agriculture gradually exhausts the already limited underground water stock. In Rajasthan currently four towns are getting drinking water supply once in 96 hours. Eleven other towns get water once in 72 hours, and 60 towns get the supply once every alternate day<sup>42</sup>. In some districts, drinking water is supplied by tankers and by train.

Harmful traditional healing and caste practices are still largely present. Corruption in the various social welfare schemes are encouraged by the weaknesses in their monitoring and constituencies' ignorance. It has been observed that most of the governmental schemes lack transparency and there is poor accountability<sup>43</sup>. Both government officials and non governmental actors serving poor populations in India lack responsibility. Poor communities visited define corruption as an accepted norm and a way of life. In 2009, India was ranked 84 out of 180 countries in the Corruption Perceptions Index<sup>44</sup>.

Responding to the limitations on livelihood assets, communities develop **different strategies** that change their lifestyle and behaviours. Such changes, despite being part of their adaptation mechanisms, can be harmful to some family members.

The seasonal migrations undertaken by tribal communities as well as permanent rural exodus from the desert zone are the main coping mechanisms in both ecological zones of Rajasthan. The seasonal migration for wage work (one member or the whole family) is mainly towards industries in Gujarat, brick making, construction, and casual agriculture labour in neighbouring farms. The rural exodus and

<sup>41</sup> Initially Sahayogini were a third worker in AWC aiming to support AWW in all activities. Rajasthan was the only state to implement this method. Later on, with opening of the NRHM, Sahayogini were organized and re-allocated to be ASHAs, which can explain the very successful collaboration between both workers at grassroots level.

<sup>42</sup> "Water Problem in Rajasthan and state government," Rajasthan Talkies, May 2009.

<sup>43</sup> Corruption in social welfare schemes, such as NREGA, where it was observed that there is fraud in the making (of job) cards, muster rolls not maintained properly, work not provided to job seekers, late and low payment of wages. In PDS, there are pilferage and leakage channels, poor and insufficient quality of food, withholding of BPL cards, irregular services. Within the health services, bribes, payment for free medicines, poor treatment, provision of expired medicines.

<sup>44</sup> Transparency International, Corruption Perceptions Index, India 2009.



permanent migration leads to an increasing number of informal settlements that can be easily seen in the big cities in Rajasthan. During temporary migration or in the newly created permanent settlements, basic living conditions are not available. This may affect most vulnerable family members: children, women and elders.

The limited access to productive landholdings, coupled with regular drought and water shortages, decreases the yields from farming and livestock breeding, pushing farmers to run into debts or to orient towards cash crop farming, further affecting the variety of food available at household level. For example, small irrigated plots are used for vegetable farming but the production, being almost monoculture is mainly commercialized in the market. This is also seen with the foods rich in micro-nutrients, notably minor forest produce: jungle fruits and honey are mostly sold in the market leaving little for consumption at household level. Such lifestyle patterns are preconditioned mainly by the increased need of cash. The family cash holders are mainly men, especially in seasonally migrating communities, decreasing women's cash possession and their decision making power within the family. Under these conditions, the eradication of different traditional practices such as early marriages, early and frequent pregnancies, lack of girls' enrolment in school and lack of participation of women in the family planning will continue to be a difficult process.

The impact of the various government initiatives in reproductive health does not show major benefits especially for SC and ST communities. One of the explanations given by the community for their large family size is that they need children for work, and that "children are gift from God". The deficient health services at village level feed the expansion of traditional healing by quacks<sup>45</sup>. Social welfare schemes such as MGNREGA are available but still unable to respond satisfactorily to household needs.

These coping mechanisms have been generally unsuccessful endeavours of adaptation to the marginalization, impoverishment and exclusion of the concerned communities. These endeavors have had a direct impact on household food availability and variety and parents' capacity (time and possibility) of providing sufficient care to their children.

Lower yields due to drought, low landholding capacities (especially SC and ST), limited work opportunities (especially for the unskilled and women), low wages for casual work, increasing prices of basic foods and low quality and quantity of livestock undoubtedly impact on the food stocks at family level. However, the problem with **variety of the food items in households** might be considered as the factor most affecting children's nutritional status rather than the quantity of food itself. The "roti-chutney" diet of adults, even though enough in quantity, is not always adapted to young children.

The **insufficient care for children** (exclusive breast feeding, prolonged breast feeding, in some cases more than 2 years, too late or too early introduction of weaning foods, non-use of the first milk, especially by tribal women) directly impacts the nutritional status of young children. However, over 30% of children in Rajasthan are born with less than 2.5 kg weight. These children will suffer reduced chances for proper body development in at least the two initial years of their lives. Early and frequent pregnancies are not the only factor leading to LBW. Antenatal care and the care for women within the families are crucial. In practice, most of the tribal women work until the last day before delivery and the rest after delivery is only 2-3 days, which does not allow proper recovery in the postpartum period. The care provided through AWC and SHC at village level appears to be inefficient as far as care for pregnant and lactating women is concerned.

The different factors contributing to the low nutritional status of the studied communities can be object of numerous measures and activities in order to decrease their negative impact. However, the most important factor having direct impact on mortality due to under-nutrition is the almost absolute lack of treatment of already malnourished cases. Rajasthan is disposed of around 250 beds in hospitals to treat severe acute malnutrition when the caseload is more than half a million. The services provided by AWCs, which are also deficient in coverage, do not provide therapeutic treatment adapted to the

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<sup>45</sup> Quacks are village doctors and are found to be popular among patients in villages. Village doctors embark on the medical profession after short courses or by inheritance from a family member. The easy access to these largely unqualified practitioners has made them the champions in rural health for decades, despite the fact that they often resort to inappropriate and even harmful practices.



specific pathological changes in the undernourished children. Therefore, a well planned, organized and conscious effort by state government would be required to address the massive caseload of SAM within the state.

### Statistics on under-nutrition contributing factors (NFHS – 3, 2006 Rajasthan)

- Urban Rajasthan had almost double coverage of vaccination with 44% for children in the age group of 12 -23 months compared to rural areas of only 22%.
- Institutional deliveries in urban areas increased to 68% from 48% in NFHS 2 and also a 7% hike in rural areas to 23%.
- Only 29.1% households in rural areas had piped drinking water compared to 85.1% in urban areas.
- Only 30.8% of households had access to a toilet facility, with a mere 8.4% in rural areas.
- 19.6 was the median age at which women gave birth to their first child.
- Only 33.2% of children in the age group of 0-5 months were exclusively breastfed, more in rural areas (36.2%) compared to urban areas (21.2%).
- 13.3% of children under the age of 3 yrs were breastfed within 1 hour of birth, with 11.3% in rural and 21% in urban Rajasthan.
- A massive number, 79.1% of children aged 6 -35 months were found to be anaemic, 61.7% of pregnant women aged 15 -49 years were also found to be anaemic.
- 22.8% women participate in household decisions and almost half of the ever married women (46.3%) have experienced spousal violence.
- The male to female sex ratio was found to be equivalent as far as nutritional status is concerned despite gender discrimination in Rajasthan being rampant (7.4 male and 7.2 female -3SD for wasting).
- Mothers who had no education were more likely to have children who were nutritionally unstable: 27.3% stunted and 7.7% wasted compared to 19.5% and 3.9% for children whose mothers had completed >5 years of education.

### Local NGOs and under-nutrition

During the field visit, the assessment team was hosted by representatives of the URMUL family in Bikaner, CECOEDECON in Tonk and Baran, Sankalp in Baran, and ARTH and Aastha in Udaipur and Rajsamand. Each of these NGOs have long years of presence in their respective zones of intervention, a high level of acceptance by local communities and in most cases strong linkages with different governmental services and funding agencies. They work on a range of interventions directly or indirectly addressing factors contributing to under nutrition. All work in one or more of the following areas of *prevention* of under nutrition – natural resources management, education, livelihoods, water and sanitation, hygiene training, improvement of agriculture practices, women and SC/ST empowerment, strengthening of ICDS services, humanitarian response, community health and nutrition education, provision of primary health services, training and nutrition surveys, among others. Most of these organizations are part of larger networks of NGOs and together they work in service delivery, rights based approaches and advocacy. Some of them are part of *Right-to-Food Campaign*. They focus on rural, remote and vulnerable communities including young children, women and tribals. Some of these agencies translate their field experiences into research papers and publish them at national and international levels. While none of these agencies has direct experience in the treatment of under nutrition, many are interested in building their capacities and plan interventions on this crucial issue.



### **Case studies from ARTH**

Kaluram Gametee's family from Dalora-ki-nadi Village lost a 2 year old child in December 2009. His family is comprised of 12 family members, of which 5 are children. Kaluram has completed 8<sup>th</sup> grade schooling. A farmer by profession, he practices animal husbandry and also works for a local development committee. Kaluram's wife Rodkebai also works as a labourer, and when out for work she normally leaves children in the house, where the grandmother usually looks after them. The child was extremely weak and used to develop diarrhea very often, he never felt hungry but was only on mother's breast milk. Occasionally he also ate Roti and Rabdi (Buttermilk + Millet), but before the death, the boy stopped eating and drinking completely. The family did everything possible: consultation to a local doctor in Kuncholi Village four times, to a private doctor four to five times and also ARTH hospital once during his illness. The child's weight was 6.7 kg for his 2 years.

Mr. Tilla Ram Gametee's family from Raman, (Mukhya Bhihwada) Village is comprised of 8 family members. There are 2 children in his family who are aged less than 5 yrs. The child who expired was 7th in the birth order. She was 27 months of age and she weighed 5 kg. Before the death the child had a cough since many days, her weight was reducing day after day and on the day of the death, the child had rapid breathing. She had oedema all over her body. Before dying, she was brought to a private doctor once; the doctor asked for a follow up but they did not have the money for a second doctor's visit. Both parents work as laborers. The oldest son of Mr. Tilla Ram Gametee works in Surat, the state of Gujarat as a Saree Cutter in the textile industry. Once parents leave for work all the children stay at home. Whatever food the mother keeps for the children, they all eat from that throughout the day.

Mr. Nana Ram Gametee's family is comprised of 4 family members. There are 2 children in his family. The child who expired was the 3rd in the birth order; he was 14 months of age and weighed 4.3 kg. Both parents work as laborers. The older son of Mr. Nana Ram Gametee works in a shop in Udaipur. After parents leave for work the children usually stay alone in the house. The children are looked after only in the evening once the mother is back from work. The child who died was on mother's breast milk, though also consumed goat milk and biscuits occasionally. Prior to death the child was extremely weak and had continuous diarrhea. One day before the death, the child was taken to a private doctor.

### **To summarize**

Scheduled Castes in Thar Desert and tribal communities in the state are the most vulnerable for under-nutrition. Within these groups, women and young children, especially girls, are most affected. The malnourished premature and Low Birth Weight (LBW) infants are particularly exposed to risk of impaired growth or even death.

The lack of variety of food items available in households and imbalanced intra-household consumption contributes to child malnutrition by depriving their growing bodies of essential nutrients. The process is deeper where weaning food is concerned. Lack of proper feeding practices due to limited time of mothers, lack of primary material and knowledge of some mothers to prepare and effectively feed their children are amongst the reasons for drops in the nutritional status of children under three years. The double burden of LBW and increased susceptibility to disease can heavily affect the nutrition status of the same group of children. Low Birth Weight is related to women's poor nutrition status and early and frequent pregnancies. Repeated illness is often present in the history of malnourished cases, indicating that the non-use or limited use of health services contributes to the worsening of nutritional status.

With regards to SAM, treatment capacities are still highly limited compared to the needs. Rajasthan has undertaken negligible investment compared to the estimated SAM caseload. The extremely low coverage of the treatment services together with a biased understanding of the causality and the pathophysiological nature of severe acute malnutrition hampers the ability of governmental services to address the issue. SAM is still massively addressed with supplementary feeding and social services instead of therapeutic treatment.

Despite a large number of measures and large financial and human resources dedicated to fighting under-nutrition in Rajasthan, the rates of under-nutrition remain steadily high. However, over the years, that analysis has largely remained the same, searching the roots of malnutrition only in the family food insecurity and mothers' illiteracy. Thus, the interventions for long years remained oriented to the providing basic food items (TPDS), supplementary feeding and nutrition education (ICDS); preventive actions have remained the focus while treatment was ignored. Prevention activities as supplementary nutrition, micronutrient supplementation and immunization have long existed and continue to be considered as "curative". The need of therapeutic treatment has been recently realized with the opening



of MTCs in Rajasthan, but coverage remains extremely limited and the quality of curative services needs to further improve.

Taking into account the previous considerations and the analysis of the services addressing SAM, the current challenges in Rajasthan are:

- Community mobilization and early active detection in communities involving SHC and PHCs,
- Improving the referral system,
- Uniform facility-based treatment protocol and In-patient counselling,
- Community-based Therapeutic Treatment,
- Follow-up in communities: the role of AWW and ASHA-Sahayogini,
- Implementation of regular state-specific and district wide nutrition surveillance in order to identify pockets of vulnerable population,
- Targeted prevention activities: Livelihoods, Water, Sanitation and Hygiene Promotion, Care Practices, Social Inclusion and Protection of marginalized,
- Continued convergence between stakeholders at grassroots level by more active involvement of local civil society and Village Health & Sanitation Committees<sup>46</sup> with regards to under-nutrition.

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<sup>46</sup> The Village Health and Sanitation Committees (VHSC) have been initiated through the NRHM. Their role is to form the link between the Gram Panchayat and the community. The membership includes representatives from the Gram Panchayat, the community and the ANM. All together, VHSCs are responsible for issues such as the implementation of the village health plan, bringing transparency in the services, the timely provision of drugs and hygiene material, etc.



## Madhya Pradesh (M.P.)

### Background and nutrition status of the population of Madhya Pradesh

The state of Madhya Pradesh is situated at the centre of Northern India and is one of the largest states in India with a 308,144 km<sup>2</sup> surface area and a population of 60.35 million, making for a population density of 196 per square km. The state capital city is Bhopal and the state is divided into 50 districts. In general, the state of M.P. has some of the lowest ranking in terms of development indicators<sup>47</sup>, for which several reasons have been pointed out, including demography, agriculture based economy, prevailing discriminatory social practices, etc.

Other important statistics for Madhya Pradesh:  
 72% rural population; 28% urban population  
 Population: 60.35 million  
 920 females for 1,000 men  
 Highest Tribal population in India (19.4%)  
 Ranked 82 on 88 countries in the Global Hunger Index  
 (Various sources)

Madhya Pradesh has the highest tribal population in the country with 19.94% of the population belonging to Scheduled Tribes. Another 15.4% of the population is comprised of Scheduled Castes. M.P. is one of the states with lowest sex ratio (920:1000, Census 2001).

The state of M.P. is over 72% rural with a low urbanization trend when compared to other Indian states. 94% of the tribal communities in M.P. live in rural areas. They are also most susceptible to seasonal migration. In the state, one of the most migration-affected zones is Tribal Belt in southern MP: Jhabua, Barwani, Khargaon (Bhil Tribe), Dhar, West and East Nimar. Migration also massively affects the Sahariya Tribe from North-western M.P. in Shivpuri, Sheopur and Guna Districts, and a little less in the drought affected tribal districts of Bundelkhand (Tikamgrath, Chhatarpur, Panna, Damoh, Sagar and Datia) as well as in Satpura Plateau (Chhindwada, Betul, Harda, Hoshangabad, Seoni, Narsimhapur and Mandla).

In 2008, the state of Madhya Pradesh was ranked last in India and 82<sup>nd</sup> out of 88 countries with a Global Hunger Index<sup>48</sup> between Chad and Ethiopia<sup>49</sup>. Its situation qualified as “extremely alarming”. Hunger in M.P. is closely associated with poverty, and it is not clear if economic growth has any positive influence on the hunger index as in M.P. economic growth is insignificant when compared with rest of the Indian states<sup>50</sup>. Within the index, child underweight contributes greatly for the low ranking.

The government of M.P. has taken various steps in the recent years to address issues of malnutrition (see Annex 10). These include the opening of Nutrition Rehabilitation Centres in hospitals and community health centres and strengthening ICDS services. M.P. has adopted set of measures to improve the quality of related services with introduction of the new WHO growth standards. There is a great deal of political will to address under nutrition and the state government is currently open to working in partnerships with civil society organizations.

According to NFHS-3 (2006), the wasting rate among children under 5 years of age in M.P. is 35% (weight-for-height <-2 SD of WHO 2006 Reference population) and the severe wasting rate is 12.6%, double that of the already serious national average of **19.8% and 6.4%**. Stunting is 50% and underweight is 60%. When the NFHS-3 data is compared to that of NFHS-2 (children under-3), whilst the stunting rates decreased, wasting and underweight rates alarmingly increased. The worst situation is within children under-3: respectively GAM 39.5% and SAM 15.3%.

<sup>47</sup> The economic growth of M.P. fluctuates at about 3-4% per year compared to the national growth of 7-8% per year.

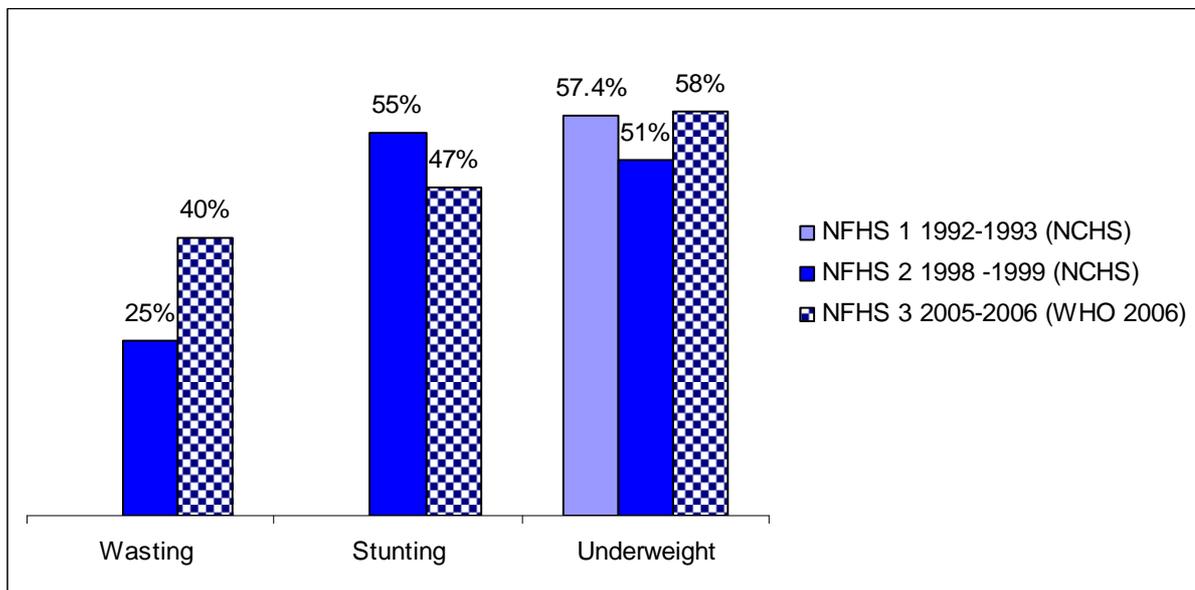
<sup>48</sup> Global Hunger Index combines three dimensions of hunger: inadequate food intake, underweight of children under the age of 5 and child under-5 mortality.

<sup>49</sup> India State Hunger Index: Comparison across states, IFPRI (2008).

<sup>50</sup> However, globally for India it was found that the economic growth has no influence on the rates of malnutrition.



**Figure 5:** Trends in Children's Nutritional Status in M.P. (<-2 SD, children under-3 years) NFHS-2 1998-99 and NFHS-3 2005-2006



Note: Prevalence for Wasting and Stunting in NFHS 1 is not available

The nutritional status of adults does not differ from that seen amongst children. 36% of men and **42% of women in M.P. are under-nourished (BMI <18.5)**. More than 41% of the underweight children have an underweight mother which would suggest a correlation between mother and child nutrition status. 23.4% of the children in M.P. were born with weight less than 2.5 kg. 82% of the children from 6 to 36 months and 58% of the pregnant women suffer from some form of anaemia.

All previous indicators are worse within rural zones. Although, the slums in the urban zones in India are less affected, the prevalence of GAM in the largest M.P. **city of Indore** is the worst in India with global under-5 wasting of 34%. In distinguishing between demographic groups, the situation is particularly critical within **Scheduled Tribe children** (GAM 41% and SAM 16.7%). However, there is no available data on district-wise prevalence which would help to identify under-nutrition pockets at a glance.

Considering the indicators above, the state of Madhya Pradesh has the worst nutritional indicators of all states in India and is amongst the lowest in the world.

### Socio-economic and demographic context of the selected districts

The team focused its attention to the tribal zones as the tribal population is considered to be most vulnerable to factors worsening their nutritional status. However, the choice of districts for field visits was also based on their level of food insecurity<sup>51</sup>, the data from Right-to-Food Campaign report "The State of Child Survival in M.P., 2008" and the ranking of districts using Human Development Index for M.P. (M.P. Government HDI Report, 2007). Thus, the priority choice was given to Jhabua (50), Shivpuri (45), Sheopur (43) and Panna (46) (see maps and table with visited locations in Annex 8). It was considered that the findings from an assortment of villages and communities in the selected districts would give a good picture of the situation in the larger geographic zones and their population. The villages were selected in consultation with the host local NGOs. The main criteria for village selection were as follows:

1. Villages in close proximity to district hospitals and CHCs.
2. Villages which are were very far from health structures.

<sup>51</sup> M.P. Food Security Atlas, WFP India 2010 (under preparation).



3. Displaced villages.
4. Villages with high populations of Tribes, Other Backward Class (OBC), and Schedule Caste.
5. Villages with poor road infrastructure and difficult to reach; villages with good road infrastructure and easy to reach.

### **Jhabua: Malwa Bhil tribal belt**

The Human Development Index of the Jhabua District (pop. 784,286) hit below 0.4, comparable only with some of the lowest ranked countries in the globe. The district is comprised of 5 blocks<sup>52</sup> and is situated on the very west side of M.P. close to the border with the state of Gujarat. Neighbouring Alirajpur District has recently been separated from Jhabua. For this reason some statistics would be common for both districts.

With an over 90% rural and over 87% Scheduled Caste population, the district is classified as one of the most “backward” areas of India. It is part of “Malwa Tribal Belt” of Madhya Pradesh where the main tribe is Bhil and with some small exceptions (Korku Tribe in Khandwa District<sup>53</sup>) is representative of the economic and social patterns of the whole tribal belt.

The area has also very specific geography - very hilly and dry. The area has suffered from deforestation (15% of forest remains in Jhabua District). People live mainly in scattered villages. Generally houses are constructed in the middle of the cultivating field and sometimes the distance from one house to another in the same village can be over 500 meters. The population density is around 200 per square km, making it sometimes difficult to delineate the border between villages.

There are no major industries developed in the area and the sources of income are very limited. Apart from agriculture and minor forest produce collection, the greatest source of cash is from seasonal migration for casual work. Migratory work is organized via contractors; these migrations are mainly to urban areas for construction work, in the chemical and cement industries in Gujarat and Maharashtra, mining work in Rajasthan and farming in other parts of Madhya Pradesh. The migrations take place twice a year, in the lean agriculture periods, March-June and October-December. About 50% of the families migrate together with their children. Migration is a part of the normal life and is already a well-established social phenomenon, though nothing is known about the early history and migration of this tribe<sup>54</sup>. Most consider migration as a long established way of life in which daily wages can reach Rs 250 for both men and women, and thus constitute a big source of cash for families. Traditionally marriage and other family functions have been simple and did not require great expenses, however, in recent times, the dowry system has started to be practiced and a marriage can cost to the families more than Rs 100,000. With the very limited cash opportunities they have, families are often pushed to take loans or sell land. The debt incurred by a marriage becomes the responsibility of the newly wed family. Newly married couples are often obliged to begin their family life as casual labourers so they are able to pay their debt. Traditionally the young family lives separately from the parents and have to construct a new house.

The consumption of tobacco and betel-nut chewing is widespread even among women and young children.

### **Shivpuri and Sheopur: Sahariya Tribe**

The districts of Shivpuri, Sheopur and Guna are also a part of “tribal districts” with 26%, 39% and 30%<sup>55</sup> of Scheduled Tribe population, respectively. The predominant tribe is Sahariya – a “primitive” tribe, with

<sup>52</sup> Thandla, Ranapur, Jhabua, Meghnagar and Pethlawad Tehsils.

<sup>53</sup> The tribal belt does not finish with Bhils in the mentioned 5 districts. The districts of Betul and Chhindwara have considerable number of Korku Tribe and further, the districts of Satpura Plateau (Hoshangabad, Mandla, etc.) Gond Tribe.

<sup>54</sup> Shiv Kumar Trivedi, *Tribal Roots of Hinduism*, 2002.

<sup>55</sup> Census 2001



a very specific character and culture. Traditionally living in the jungle, they practiced “slash and burn” agriculture (millet, sorghum, wild rice, gourds, etc.), collected jungle produce for exchange with other communities for household products, made handicrafts such as pottery and baskets and hunted and fished. They are also masters in healing with jungle produce/remedies (shamanism) and possess one of the finest tribal arts used in the decoration of their admirable houses. The Sahariya have a specific language and live in a relatively closed society strictly following their traditions and tribal rules. They do not mix with other communities and even when they inhabit mixed villages, they live in separate, distinct, densely populated neighbourhoods.

Sahariyas live in the mountain areas close to the border of Rajasthan. Some of these areas are very remote and difficult to access by road. The remoteness, the gradual loss of their traditional livelihood assets through diminished access to the jungle, loss of cultivation land, and low levels of education has made them one of the most vulnerable communities in India. Their main source of income today is from casual wage work in farms around the spring and autumn harvests. They are much appreciated labourers as they are famous for being honest, simple and hard workers. Their simplicity is often used by their employers to exploit their work unfairly. Generally the whole family migrates and all able family members are involved in the labour, from kids to elders. However, elders are rarely seen in this community, which would suggest that the life expectancy might be very short. It is difficult to say what the rate of infant mortality is, though interviews with communities have shown that almost each family experienced infant death.

In Block Vijaypur, there are 24 Sahariya villages that were displaced in 2001 from the Kanha Sanctuary. People of these villages are now in a very precarious situation as they completely lost on their previous ways of life and the lands they possess are dry, rocky and infertile.

Governmental health services do not reach many villages, especially the north-west areas of Kolaras Block of Shivpuri District and Vijaypur Block of Sheopur. In the areas where health services are better developed, there is resistance to using them as many people in the Sahariya Tribe believe in their ancestral healing methods.

### **Panna, Bundelkhand**

With a proportion of almost 50% ST/SC population, Panna is one of the districts with low population density<sup>56</sup> as well as low HDI (pop. 854,235). Part of the district lies in the Panna Tiger Reserve and the rest is cut by dry plateaus rendering road infrastructure very complicated thereby leaving some areas very remote. This topography predetermines the scarcity of governmental services in certain zones (for example, Khalda Pathar, Pawai Block). Around 35% of the territory is sown land; the rest is mainly forest (43%). Panna is famous for its diamond mines; however, this has not been of much advantage to the poor local population. There are no major industrial activities in the zone, and subsequently there are not many job opportunities. The entire Bundelkhand Region (including Panna) is prone to and is currently affected by long-term drought (59 years) which has an important impact on agricultural productivity (one of the lowest food grain productivity areas in M.P.).

The Gond Tribe constitutes the highest proportion of the tribal population in Panna District and in the entire state of Madhya Pradesh. Compared to the Sahariya and Bhil, the Gond has a more developed social structure and voluntarily live in mixed villages together with other castes. Their literacy rate is higher as well. However, in certain degraded ecological zones, the Gond population exists under poor conditions affected by poverty and limited access to good cultivating land. In some areas of the district the collection of forest produce is still an important source of income, especially those parts most remote. However, in villages with no access to the jungle, mainly mixed villages, the main coping mechanism to address cash shortages and family food insecurity is migration. It is mainly male members of family that migrate but a more recent trend is that women migrate too as they have opportunities to find jobs, especially for those migrating to New Delhi. In this case, often children come with them.

<sup>56</sup> 120 per square km.



## Governmental and non-governmental sector and under-nutrition

The assessment team met many key stakeholders and visited numerous community based public service structures in the visited districts. The objectives of the approach were a) to enter in contact with key nutrition stakeholders (governmental and non-governmental) b) to get first-hand information on the functioning of different services established to fight under-nutrition, their achievements and challenges and c) to understand the developing perspectives in the health and nutrition sector in M.P. in the recent times.

### State social services addressing nutrition issues: detection, treatment and prevention

After NFHS-3 (2006) and especially after the official publication of the nutrition analysis of the results of the same in 2008, the state of Madhya Pradesh has been the focus of critiques and discussions.

The state government has acknowledged the importance of addressing malnutrition and has taken several measures to address the issue by strengthening ICDS services and opening Nutrition Rehabilitation Centres (NRC) in NRHM structures. Figure 7 shows the role of the ICDS and NRHM in M.P. in the treatment of SAM.

**Figure 7:** SAM, detection, treatment and prevention flow in M.P.

Detection	Treatment		Prevention
<b>AWC OPD</b>	Care in <b>NRC</b> : intensive care for 14 days and 4 Follow-up visits	Care in community <b>AWC</b>	<b>AWC/ASHA/ANM</b>
During growth monitoring:  Weight/age and/or red MUAC <115mm (under implementation)	Treatment based on IAP and Prof. Mike Golden Recommendations (incentive) + Follow-up visits every 15 days: medical check-up and measurement Discharge: 15% gain of weight	Additional supplementary ration consumed in AWC + Additional counseling from AWW + Referral for Follow-up visits (incentive)	Growth monitoring and health checkup  Health and Nutrition education  Supplementary Nutrition  Immunization  Micronutrients  Vit A and de-worming every 6 months

In the period from June 2008 to March 2009, supported by UNICEF, there was an introduction of foreign-made RUTF through Anganwadi Centres in Khandwa District. The use of imported RUTF was not allowed by the central government authorities in April 2009, claiming that the country can find better local solutions. Since then, the use of RUTF in M.P. has been discontinued. Currently, a new nutrition policy is under preparation. The two departments concerned, the Department of Health and the Department of Woman and Child Development, are working together on the development of the policy and are consulting with UNICEF and DFID - TAST. According to the draft document (**Atal Baal Aarogya Evam Poshan Mission 2010 - 2020** a project under the Department of Woman and Child Development) community nutrition will remain fully in the DWCD mandate and the health department will continue to provide in-patient curative services. However, the nutrition activities in M.P. will soon



switch to mission mode<sup>57</sup> under DWCD, meaning the plan will be to put into operation, notably by focusing on ICDS quality improvement and integration of SAM management at AWC level.

### Anganwadi Centres (ICDS)

About 80,000 AWC have been opened in M.P. There were three important changes in the ICDS program in Madhya Pradesh during 2009-2010: the introduction of the new WHO Standard Growth charts, doubling of supplementary nutrition (two cooked meals for children from 3 to 6 years of age) and opening of mini-Anganwadi (about 12,000) according to the Central ICDS order. Additional adjustments were made only for M.P., such as lengthening of opening hours in AWC and Sanjha Chulha<sup>58</sup>. The total financial provision from the department of Woman and Child Development towards ICDS projects for the year 2008 - 2009 was Rs 926.37 crore<sup>59</sup> (15.4 M Euros), out of which the total expenditure was Rs 837.76 crores (13.9 million Euros). The budget allocated for the year 2009 - 2010 is Rs 1,655.18 crore (27.6 million Euros) and the expenditure in the first 6 months so far has been Rs 804.37 crore<sup>60</sup> (13.4 M Euros).

In the visited ICDS centres, the emphasis given on the “supplementary nutrition” component of the program obviously predominates over the rest of the ICDS activities, hampering particularly the pre-school education. ICDS protocols for severely underweight children who do not attend NRC include Iron and Vitamin A supplementation, which can be potentially dangerous for SAM children. The performance of ICDS services remains extremely uneven: from closed AWC, some without a building or AWW occupying the centre, etc., through inefficient growth monitoring (lack of skills or reference charts), to fully working ICDS centres with competent and motivated staff.

### Nutrition Rehabilitation Centres (NRC)

The first NRC was opened with the technical and financial support from UNICEF in April 2006 in Shivpuri District. Since then, the model is accepted and has been scaled-up over the whole state. The bed capacity varies from 8 to 20 in CHC NRCs and 20 to 40 in district and college hospitals. As of mid-2010 there were **213 functioning NRCs in M.P.** and this is expected to increase to 225 by the end of 2010. Provision for building 50 new NRCs has been made in the state NRHM plan in order to tackle the problem of insufficient bed capacity. Up to the end of 2009, 14,555 malnourished children had been treated in NRCs in Madhya Pradesh in 2008 - 2009. Each NRC has a dedicated team including 1 Feeding Demonstrator (General Nutritionist), 3-4 Nurses/ANMs and other support staff (cook, sweepers, caretakers). The Feeding Demonstrator is responsible for the organization of the nutrition treatment process, follow-up, reporting and management of the staff.

The team visited 8 NRCs from the selected zones. The treatment follows IAP recommendations for SAM management from 2006 (based on WHO Guidelines). Several readjustments were done by the end of 2009 after consulting Prof. Mike Golden<sup>61</sup>, who provided specific support to improve and facilitate the protocol implementation, introducing an appetite test at admission and recommending a new registration book and SAM charts with a SAM unique number for individual in-patient monitoring. Several improvements on the feeding formula were done in order to simplify the treatment. However,

<sup>57</sup> Atal Baal Aarogya Evam Poshan Mission (2010 – 2020) draft document was under public discussion at the moment of writing of this report. If stakeholders agree on the document, the Mission will be launched on 2nd of October 2010.

<sup>58</sup> The government of Madhya Pradesh along with the Department of Woman and Child Development has started a common kitchen called Sanjha Chulha for the ICDS, Anganwadi Centres and the Mid-Day-Meal program.

<sup>59</sup> 1 Crore = 10 Million Rupees.

<sup>60</sup> There are a total of 78,929 Anganwadi Centres and 12,070 sub/mini Anganwadi Centres in Madhya Pradesh and the total beneficiaries of around 88 lakhs. The total Anganwadi Workers are however only 69, 240.

<sup>61</sup> Michael Golden is a physiologist by training but his clinical practice led him to switch to nutrition and paediatrics. He worked in and later directed Waterlow's old unit in Jamaica for 17 years, doing research into all aspects of malnutrition. Dr. Golden returned to the UK in 1991 and has since been working with NGOs and UN agencies involved in malnutrition. He is one of the world's most reputed scientists working on severe acute malnutrition.



there is much more to be desired as far as the treatment protocol is concerned (admissions, length of stay in the facility, routine drugs, discharge criteria, nutrition counselling) with the follow-up period after discharge from the NRC being the biggest challenge.

The reporting system and linkages with community ICDS services remain weak. It is difficult to judge on the efficiency of the treatment especially when gain of weight and relapses are not reported; an efficient community detection system as well as associated prevention activities needs to be strengthened. Coordination between NRCs and the community through Anganwadi Centers was strengthened recently resulting in a new problem: very limited bed capacity. The ACF team visited the NRC in Kolaras Block, Shivpuri District, the NRCs of Karahal and Vijaypur Blocks of Sheopur District, the NRC in Jhabua District Hospital and the NRCs in Panna and Amangunj, Panna District. Apart from the NRC in Jhabua (40 beds) all the rest were over-crowded, especially that in Panna, where there were only 8 beds available and there were 19 patients accommodated on mattresses on the ground in the corridor. For this reason, several new rules were introduced and communicated: admission to the centres is only on 1<sup>st</sup> and 16<sup>th</sup> of the month and only AWW can refer children to an NRC (then obtaining the Rs 100 incentive for patient referral).

#### Case Study: Guwara

Jiten is a 3 year old malnourished boy living in Gugwara Village with his parents. Jiten's mother Geeta Bablis Adivasi is 23 years old and is aware that her child is malnourished. On asking her whether she would admit her child to an NRC she says that Jiten had already been admitted to the Kolaras NRC in Shivpuri. After treatment for 14 days in the NRC the child had become stable, but unfortunately they had to migrate for a couple of months in search of work and they took Jiten along with them. Due to lack of care and support while his parents were busy at work during the migration period, Jiten is now sick again. On returning back to their village the Anganwadi Worker asked Geeta to take Jiten back to the NRC but this time the NRC is full and there are no beds available. Geeta now waits for her child's admission into the NRC as there is a long queue of children waiting.

ACF Team, June 2010



The NRCs in the districts of Shivpuri and Guna as well as in Sheopur are operated in **partnership with local NGOs**. This approach seems to be very successful as it improves the link with communities where those NGOs have community workers mobilizing the communities on nutrition in between the other activities that they normally run. However, their technical skills and knowledge on SAM treatment remain low even with technical support from UNICEF.

#### Gaps in the system established between ICDS and NRC

- **Use of different nutrition status indicators in the ICDS and in NRCs:** The weight-for-age indicator used in the ICDS includes stunted and wasted children without making differentiation between them, while only wasted children are eligible for treatment in an NRC.
- **The communication between AWCs and NRCs is still very limited:** there is a lack of statistics on how many of the referred children indeed attend an NRC and on individual follow-up of discharged children in the community.



- **The lack of common reporting system with easily verifiable indicators.**
- **Children with severe acute malnutrition under-6 month's age are not eligible for NRC admission or even if they are admitted, they do not receive treatment for their condition but only counselling.** The protocol is not clear on this category of children. However, "Newborn Sick Care Units" will be opened at CHC level to deal with newborn illnesses including under-nutrition. Though, this could be done successfully in NRCs, which would lessen double allocation of resources.
- **Pregnant and lactating women are not an object of additional nutrition interventions,** being clear that available services are either insufficient or inefficient in lessening maternal malnutrition and the effect it may have on the newborns.
- **Technical capacity building is still insufficient in both structures.** More nutrition training was the need expressed by the staff in NRCs and the ICDS supervisors.
- **Community health workers, sub- health centres and PHCs are unanimously not actively involved** in the detection and treatment of under-nutrition while they can be a great resource in addressing malnutrition.

This mother spent two weeks in Karahal Block NRC. At the NRC, her son was gaining weight but as soon as the baby was discharged, his condition began to worsen again, "I can't follow the advice they gave me in the NRC, she says, feeding *dalia* and *khichdi* with potato, pumpkin, carrots, tomato, green leaves 8 times a day to my son... I have to purchase that from the market, but it is far and I don't have money for that. So, I continue to give him roti."

ACF Team, June 2010



## Non-governmental sector and under-nutrition

A range of NGOs works in M.P., mainly on **social mobilization and advocacy** with rights based approaches. These NGOs work in an issue based network for the most part. Many NGOs are also active in provision of services in partnership with the government and external agencies such as UNICEF. The Right-to-Food Campaign's "The State of Child Survival Critical Report" about the situation of malnutrition in Madhya Pradesh makes a critical analysis of the state policies and the social services of the NRHM and ICDS, focusing on the most vulnerable zones and communities. Over the period of 2008 to 2010, the campaign almost weekly provided shocking information and case studies on continuing cases of hunger deaths of young children as well as shocking stories of insufficiency and corruption within the governmental services and non-registering of child deaths linked to malnutrition. Action Aid (India) is an engine of a lot of advocacy initiatives on many issues, including under-nutrition, using the right-based approach. They work with a network of local NGOs all over the state.

Other than advocacy, under-nutrition is not a high priority activity for most local NGOs nor is there any specific technical expertise on this issue generally available in the local non-governmental sector. Real Medicine Foundation (RMF-India), an international NGO recently active in 500 villages of the Malwa Tribal Belt, runs a nutrition program aiming at improvement of community detection and nutrition education. They identify and facilitate the amelioration of missing linkages between AWC and community health structures, surveying the nutritional situation of the intervention area, collecting and analyzing data from the MUAC screenings.



## Under-nutrition contributing factors in Madhya Pradesh

Though Madhya Pradesh is endowed with five major rivers<sup>62</sup>, it depends almost exclusively on ground water (99 per cent) for drinking purposes. Overexploitation of groundwater can be seen in many parts of the state, which could be due to the increasing use of hand pumps/ tube wells. The groundwater of 24 out of 313 blocks in M.P. is now over exploited and many other blocks are in critical or semi critical stage. The water quality is also highly affected as Jhabua has fluoride contamination, Sheopur high nitrate content and Shivpuri has high fluoride, nitrate and salinity content. The Health Department surveys also revealed significant number of cases of fluorosis and water-borne diseases affecting children and associated under nutrition all over the state<sup>63</sup>. In the visited areas, it was found that drought was a common problem directly affecting agriculture, income, household food availability, the availability of potable water, water for domestic needs and water for irrigation. The impact of deforestation, felt by many, is difficult to be remediated in short time. Deforestation also hampers the water availability and contributes locally to the otherwise more global climate change.

Access to fertile **cultivation land** is another contributing factor to insufficient family assets. In some cases because of traditions (dividing land between sons in the Bhil community) and in other cases because of the quality of sown plots (as for Sahariyas in Shivpuri and Sheopur) or displacement (in the displaced 24 Sahariya villages in Vijaypur Block, Sheopur District), farming is no longer a livelihood mechanism to insure food security in many families. The low quality of the land (as in the high plateau of Panna and some parts of Sheopur and Shivpuri), almost inexistent access to irrigated land for the poor and lack of knowledge on **agricultural techniques** (especially in Sahariya) lead to low farm outputs. In addition, lack of proper rotation and change of crops in accordance with the market demands decreases the cash output of agriculture work. For example, the Bhil in Jhabua continue cultivation of cotton but the cash they can generate with cotton is no longer enough to cover the family needs.

Exploiting traditional **non-timber forest produce** is no longer a dependable livelihood option and is also very seasonal in nature. The protected nature parks and reserves in Panna, Sheopur and Shivpuri limit the free and unconditional access of tribal people to the forest. Moreover, deforestation has taken a toll.

The **governmental schemes** (PDS, MGNREGA, ICDS, Mid-Day-Meal) are generally available. MGNREGA seems to be an important part of the livelihood of tribal communities and other poor. However, MGNREGA is not enough to allow full, year-long household food availability even with the support of PDS, ICDS and MDM. In addition there are many gaps in the implementation of the various schemes.

**Industries and other economic activities** are rarely present because of remoteness and low development of the infrastructure (Jhabua, Vijaypur), as well as the many natural sanctuaries/protected zones (Sheopur, Shivpuri and Panna). This of course limits job opportunities in general and keeps those areas away from the global trend of economic development in India.

Low **level of literacy** of tribal populations additionally keeps them away from the development process and opportunities for sustainable employment. Female literacy, especially among tribal communities, varies from 30% in Panna to only 9% in Sheopur District.

Family size (8 to 10 members in an average tribal family) and birth rates (above the Indian average, up to live births 57 per 1000 people per year<sup>64</sup> in Alirajpur) remain very high in Scheduled Tribe communities despite a large range of measures undertaken by the health system. The observations

<sup>62</sup> Ganga, Godavari, Narmada, Mahi and Tapi.

<sup>63</sup> Keshab Das, "Drinking Water and Sanitation in Rural Madhya Pradesh: A review of Policy Initiatives," Forum for Watershed Research and Policy Dialogue, 2006.

<sup>64</sup> For comparison the estimated birth rate for 2009 in India is of 21births/1000 population (reference: [http://www.indexmundi.com/india/birth\\_rate.html](http://www.indexmundi.com/india/birth_rate.html)).



from the field have shown that although people are increasingly aware about contraception and free sterilization opportunities, but they continue to consider **children as an important livelihood asset**: more children, more manpower, more food and cash. This trend was more exacerbated among the Sahariya.

Despite the official abolishment of the caste system, in practice, it is still present and very strongly rules social behaviours in rural areas, leading to **social exclusion** not only of the lower castes but also of tribal communities. This exclusion decreases development opportunities, access to better jobs and eventually better wages.

**Tribal empowerment** assisted by different local NGOs and improved legislation including tribal communities and women in local governance structures is a positive and life-improving strategy in some communities. However, the examples are still very sporadic which proves that this empowerment cannot happen automatically based on the existing legal framework. The Scheduled Caste and Scheduled Tribe communities are not always able to benefit from their entitlements on their own, but only with the additional support and guidance from local NGOs.

Finally, the **position of the women** in the tribal communities remains very low. Women being one of the motors of insuring the availability of food and water in the household have no or very limited decision making power. The process is not only “one way” coming from husbands or mothers-in-law but is due also to lack of self-empowerment of women themselves. This of course impacts significantly the opportunities of better care for children, even for those women who are aware about best practices. This is seen very much in Sahariya and Bhil women.

In answer to the different gaps and **changes in their livelihoods, people develop different coping mechanisms** to re-adjust their lives. However, the field visit has shown that coping options are very limited and do not lead to better social and economic development.

**Migration** has become the main coping mechanism, dramatically changing traditional lifestyle patterns. Scarcity of income and work opportunities pushes people to migrate to towns and other areas on a seasonal basis. The tribal groups are traditionally sedentary and are very attached to their living areas, close to the jungle. While livelihood compulsion necessitates their migration, their attachment to their roots does not allow them to settle permanently to the place of migration and hence they limit their migration to a seasonal basis only. Almost 80% of Sahariyas migrate seasonally together with the whole family. For the Bhil, about 50% migrate, though every family has a migrant member. Migration for wage labour improves the family income and is supposed to have a positive impact on household food security but in reality the income generated is extremely limited (Rs 3,000 to 5,000 per migrating season per family) and it is spent in priority to repay loans, marriages, clothes, mobile phones, tobacco, alcohol, etc. The quantity and the variety of the food, especially food for children, is no longer the major family priority. The children are in many cases taken away from school or AWC and access to health structures remains limited as these migratory families do not know where exactly to search for them. The recently launched MGNREGA is a welcome step in M.P. but is obviously an insufficient source of income and largely unable to reverse the migration lifestyle within these populations.

Several studies have been done on the **changes of consumption patterns** of tribal people as a result of the low availability of traditional food products in their family food basket. Indeed, the limited access to jungle produce<sup>65</sup> means that tribal communities would rather prioritize selling them instead of consuming them at home (e.g. honey, jungle fruits, eatable gum, etc.). However, lack of kitchen gardening, decreasing number of livestock as a consequence of migration, changes in family priorities, etc. are also likely to contribute to the gradual changes in the variety of the traditional diet. It seems that Sahariyas are most affected by these processes, followed by Bhils.

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<sup>65</sup> The lands covered with forest are 19% in Jhabua, and above 40% in Sheopur, Shivpuri and Panna, but are mainly protected zones and natural parks. Tribal communities have been given access to forest produce but with a range of seasonal limitations, types of produce and quantity.



The social exclusion of low caste and tribal populations means that some, notably the Sahariya, **confine themselves to their own groups** and try to cope with life limiting mixing with other communities. On the contrary, Bhils adopt some **social behaviours imitating higher castes** such as the dowry system. Both of the strategies - confining themselves within their own groups or trying to mix with other communities and imitate their behaviour – have not been helpful as the former leads to further exclusion and latter to accumulating further debt.

**Women are generally not included in decision making on possible coping mechanisms.** The lack of women's empowerment limits an elaboration of their own mechanisms to cope with their increased workload, especially during cultivation/harvesting periods and when water sources are scarce or remote. They even do not seem to have decision making power on the care of children, not so much on daily basis care but regarding the decisions for school/AWC enrolment, health care in case of disease or when items for children have to be purchased.

Livelihood assets and strategies have an impact on the **quality and quantity of food available in the household**. Even if an exceptionally sufficient quantity is available, from TPDS or from family production, the variety is often limited to wheat and maize flour, chickpeas, groundnuts, some fat (ghee) and some roots, mainly onions. Sugar and pouches of Rs 1 tobacco and mouth fresheners are always there. Green vegetables, except for green chilli, seem to be a luxury, and if milk is available, it is consumed as soon as taken from the animal, and given to children with priority when available. Some biscuits are found, purchased from the village stalls. Thus, roti and chickpeas are the common diet and this is what is fed to children. Jungle products are rarely seen in kitchens.

**Food availability at household level is more likely to be related to the adult malnutrition**, in combination with habits such as consumption of tobacco and alcohol by both men and women. It is difficult to relate household food insecurity with the high level of wasting in children. Generally the caloric shortages for children vary in the amount of 200-300 kcal that can be easily found in even very poor houses. The limited availability of food in very poor households has an impact on the **intra-household consumption**, or how the food is shared inside the family. The main problem is related more likely not to the quantity of food available for children but to the quality and the form in which it is given, as well as **how much the food given, especially to very young kids, is indeed consumed**.

Despite the commonly accepted notion that ignorance is one of the main reasons for high levels of malnutrition, the field assessment in M.P. found that many other factors, some of which are highlighted below, are sometimes even more aggravating than just lack of knowledge on best care practices.

**Exclusive breastfeeding** is generally not practiced. According to the women interviewed, water is regularly given, especially during the hot season. A concoction including jaggery is given in the first days after the birth while colostrum is thrown away. In Madhya Pradesh, only 22 % of children under six months are exclusively breastfed and only 53% are put to the breast within the first day of life, including 16% within one hour of birth<sup>66</sup>. The **misuse of colostrum** is clearly a tradition within Sahariya and Bhil (confirmed by women during interviews) and to a lesser degree in Gond. With the introduction of incentive-based institutional deliveries, in theory, colostrum consumption pattern for new borne should be gradually increasing as mothers are supposed to stay at the health structures under supervision for at least 24 hours. From the interviewed tribal women, most women confirmed that they delivered at the health structures when possible but did not confirm that they give the colostrum. However, they were aware of the importance of the colostrum. The frequency and the time of breastfeeding during the day may be often compromised because mothers are busy with work, whether at home in the fields, or during migration. This can have a critical impact on the nutritional status of newborns and infants.

One important **practice often compromised is the introduction of complementary food**, its timing and the type of complementary food. Many times, initiation of complementary food takes place at around 4 months of age, which is too early. In other cases, initiation of complementary food takes place after 12<sup>th</sup> months of age. Obviously the latter happens naturally, when the child shows interest in the family food, which as mentioned above is based on roti (from wheat or maize). The mothers are aware

<sup>66</sup> Madhya Pradesh National Family and Health Survey (NFHS-3), 2005-2006, MHFW - Government of India.



of what are good complementary foods, but generally complained of not having the materials (such as Dalia, khichri, fruits, pumpkin, etc.) as for the most part they have to be purchased. A lot of women presumed that if they gave breast milk and family food, it would be enough for the child. In M.P. only 45% of children aged 6-23 months are fed the recommended minimum number of times per day and only 24 percent are fed from the minimum number of food groups<sup>68</sup>.



There are several factors related mainly to **the situation of the women** that contribute to women's malnutrition and to wasting and stunting in children less than 5 years of age. It is a common behaviour in households that women would prioritize other members of the family at the expense of their own needs. If the food cooked in the morning is found insufficient, women will sacrifice one meal for themselves in order to ensure more for children and husband. Fetching water and collecting wood for cooking is considered as women's work, as well as the direct care of children, farm work, collection of non-timber forest produce, cleaning and maintaining the house and even some small commerce (selling wood and jungle products) in the tribal communities. Some women also work together with men during migration. Early marriages (70 to 80% of girls marry before reaching the age of 18 years<sup>68</sup>), early and frequent pregnancies and heavy work loads during pregnancy further compromise women's nutritional status and health. **Caring for children is also compromised** in the face of heavy workloads. If the care for children is deficient, then **the care for women** is more or less missing or discredited in families as well as in health services. Women in the interviewed communities often complained about **working until the last day before delivery and not having adequate rest, post delivery** (3-4 days was the maximum rest they received post delivery). There is hardly any **ante- and postnatal care available** for them or that they access. Services at ICDS centres do not have significant impact on women's nutritional status, nor that of their babies. The high level of low birth weights is considered as "normal" to the point that a child born with a weight of more than 2.5 kgs is seen as a "big" baby. The handicap of low weight at birth further causes decreased chances of survival and normal physical and mental development in children. This is where the postnatal care and proper nutritional support to infants is also not available.

<sup>67</sup> Madhya Pradesh National Family and Health Survey (NFHS-3), 2005-2006, MHFW - Government of India.

<sup>69</sup> HDI Madhya Pradesh, 2008 update.



Sanitation facilities and their use when they are available seem to be a major problem. There are hardly any household latrines or bathing facilities and surprisingly the **lack of sanitation**<sup>6970</sup> was never expressed as a need or problem within these communities, where open air defecation and urination is fully accepted. In some villages it is hard to see even one latrine. There is no bathing place to help maintaining women's hygiene - generally they bath through their clothes. Children's hygiene is also very low, which would be a reason for illness. The remoteness of water sources was mentioned when children's hygiene was questioned. However, it is important to note the very high levels of domestic hygiene, especially in Sahariya houses.

The interviewed communities shared that they rarely use sub-health centres and PHCs, apart for deliveries, as the **free drugs are generally not available** and many medical staff often abuse by providing services for payment. Generally services available with the private village doctors/quacks and village pharmacy stalls have more credibility within the communities. It is not always due to bad services but also because these communities are afraid of hospitalization. In most cases, **public health structures are the last resort** to access health services when other options have failed.

The community health services remain detached in diagnosing malnutrition. NRCs mostly admit patients referred by AWW. Many of the parents **refuse to attend NRCs** because of family constraints: other siblings to take care of, temporary separation of wife from husband, fear of women to go to an unknown place alone with their child, etc. At the same time, the overload of the centres with cases especially during the monsoon and after migration indicates **limited capacity of the established NRCs** to tackle the caseload. There is **no community or home based treatment provided** in village level health structures and the service provided by the ICDS is far from the global standards for such a service.

Of the other services concerning mother and child health, maternity benefits, including institutional deliveries, were one of the major measures that the government of India has undertaken to decrease IMR and MMR. Though institutional deliveries have seen a massive increase (from 20-30% just 5 years ago to 70-80% in some districts) the **quality of available service** in many areas is very weak. The availability of delivery materials and the hygienic environment available at many sub-centres can be lower than even in people's households. In some PHCs, even basic materials are not available to face emergencies and referral is impossible because of a lack of ambulances. Vaccination services are available at all levels but higher coverage is still required.

## To summarize

The situation analysis confirms that **tribal communities and other vulnerable communities within tribal areas** and women and young children in the state are the most vulnerable for under-nutrition.

**Migration** is a great contributing factor to malnutrition among children and women. A clear pattern of increase in SAM cases is observed in AWCs and NRCs soon after the return of families who migrated.

The factors directly contributing to malnutrition are similar to those pointed out in the Rajasthan analysis: lack of variety of food items, especially weaning foods, poor feeding practices, the burden of low weight at birth and the corresponding increased susceptibility to disease, women's poor nutritional status and the lack or the non-use of health services. With regard to under-nutrition, treatment capacities are still very limited compared to the needs, contributing to the vicious circle between under-nutrition and disease, compromising short and long-term child development and increasing the risk of mortality. Of malnourished infants, premature or "low birth weights" are particularly exposed to risk, and there are no available services to tackle that problem. The insufficient quantity of foods available at

<sup>69</sup> Government of India, Ministry of Health and Family Welfare, District Level Household and Facility survey (DLHS – 3), Fact sheet Madhya Pradesh, International Institute for Population Sciences (Deemed University) Mumbai, 2007-2008.

<sup>70</sup> Only 11% of households in Panna are equipped with toilets, 12% in Sheopur, 13% in Jhabua and 16% in Shivpuri. These are district wide data and include the urban zones.



household level together with consumption of alcohol and tobacco contribute to low nutrition status within adults.

Despite the fact that curative services designed to address malnutrition have been significantly improved in recent years, the services barely cover 1% of the estimated more than one million children under-5 suffering from SAM. Outreach community based treatment is necessary to have any significant impact on the high rates of SAM in M.P. The lack of regularly updated district information on the under-nutrition rates (rates in all reports date from the 2006 NFHS-3) muffles the real situation. Eventual implementation of a regular **state-specific and district wise nutrition surveillance system to identify high acute malnutrition prevalence pockets**<sup>71</sup>, geographical or community groups, would contribute to more targeted and contextually and culturally adapted prevention activities.

The **technical expertise in SAM management** and prevention remain very limited and research in this regard is almost nonexistent. However, the resources are available but will have to be rationally used following the global achievements in the field of under-nutrition treatment and prevention.

In M.P. main challenges are:

- Targeted prevention interventions on the issues contributing to under nutrition such as water, sanitation and hygiene. In addition, awareness on care practices needs to be much improved.
- Activities aiming at **social inclusion** for those who remain marginalized and most vulnerable (such as women, Scheduled Tribes, Scheduled Castes, people living in remote/rural areas).
- Further strengthening of targeted interventions for **improving food security and livelihoods** in order to mitigate the need for seasonal migration.
- **Convergence and strengthening of monitoring, reporting systems and transparency** in governmental services.

As far as existing services are concerned, the main challenges are:

- Improvement in the **quality and efficiency of the services offered by in-patient facilities is necessary**. The implementation quality and treatment protocol itself has to be further improved. The Management of Acute Malnutrition of Infants (MAMI) has to be further integrated in the treatment provided by NRCs.
- **Out-reach treatment of SAM is necessary** in order to address the huge caseload. For severe malnutrition, even if all structures were working, with all linkages, the existing capacity will never be able to assume the large number of children and mothers in need of treatment in India over a period of several years. Community or home-based treatment of malnutrition through community and village stakeholders is the only way to make a difference.
- Priority has to be given to **under-nutrition detection at community level** health services in addition to the existing mechanisms of detection by ICDS centres. The detection of SAM in ICDS centres has to be strengthened by use of uniform indicators with health structures admission criteria. Improvement in the detection and follow-up of malnutrition will be possible only if there are proper linkages between ICDS and the health structures. Within the health structures, hospitals are still disconnected from community public health structures, so this link needs to be strengthened.
- Better **surveillance/mapping of vulnerable zones** and populations has to be regularly conducted. This would help to better analyze the impact of nutrition interventions (governmental and non-governmental) and to prioritize additional nutrition interventions in the most vulnerable zones.
- **Ante- and postnatal services have to be strengthened** in service of both mothers and newborns in order to break the vicious circle between nutritional status of mother and child.

<sup>71</sup> Global Hunger Index report for India (2008) identifies vulnerable districts but not population groups and uses different indicators.



- **Investing in research, capacity building and testing of approaches** would help India in building evidence on existing treatment of SAM. There are, at present, no efficacy trials on current products used at NRCs/MTCs. Apart from that, research seems to be very limited on issues of SAM in India with very limited interaction of medical and social science. Long-term and sustainable community education and capacity building activities could be developed to prevent malnutrition which would help in engaging each community on a micro level and further help in tailoring programs to fit their needs and customs.



## Enabling factors

Despite many gaps and weaknesses, there are several very important factors and pre-conditions which would facilitate successful nutrition interventions:

- The WHO 2006 references were endorsed in India and implemented in 13 ICDS districts in Rajasthan and throughout Madhya Pradesh.
- IAP Recommendations from 2006 on hospital management of severely malnourished children (adapted from WHO Guidelines) are still not a national protocol on SAM management but they are a good basis to build upon, adapt and eventually test integrated complete approaches.
- The Malnutrition Treatment Corners/Centres opened in Rajasthan and the Nutrition Rehabilitation Centres opened in M.P. over the last 4 years and the plans for increasing these centres is one of the most important steps towards SAM management.
- The state governments acknowledge the issue of under-nutrition and search for model-based solutions. In Madhya Pradesh, the state government is expected to launch the **Atal Bal Arogya Evam Poshan Mission** (Child Health & Nutrition Mission) by the end of 2010. The mission will be especially dedicated to under-nutrition eradication in the state.
- Governments have resources and capacities to further finance and scale-up successful models. Governmental services are available at grass-roots level. The grass-roots human resources can transform into important engines of community activities with more investment in the development of their capacity.
- The necessary therapeutic products for treatment of SAM are one of the most sensitive issues. It is agreed by stakeholders that the country does not need imported products. The country has the capacity to elaborate, produce and test local formulas. All necessary primary materials are available and the local food processing industries are able to respond to the quantity and quality requirements for such products.



## Potential role for ACF

The resources developed in India to address under-nutrition are immense but their efficiency and coverage remain limited. This was agreed by almost all stakeholders met during the field visits and during the consultative meetings ACF held in both Rajasthan and Madhya Pradesh. Several issues pointed out in this situation analysis can be potential ground of further improvement with ACF participation. Taking into consideration the detected issues and ACF's expertise, **three main directions** of possible interventions can be drawn: 1) technical support in the monitoring & evaluation of existing systems/programmes, in the improvement of nutritional surveillance and in the development of key documents (policy, protocol), 2) technical capacity development, 3) operational research and piloting of curative approaches.

### **Axis 1: Technical Support (monitoring & evaluation, improvement of nutritional surveillance and development of key documents)**

Many of the decisions in governmental and non-governmental sectors related to under-nutrition appear to be cost-inefficient or to have been taken without considering technical details that can be harmful to the under-nourished (for example, the use of Iron for severely wasted in ICDS, indiscriminate use of perfusions in some in-patient nutrition rehabilitation facilities). Under-nutrition related data is not always reliable, and the monitoring and evaluation systems are weak. The lack of internal Indian SAM expertise as well as poor coordination (only recently a SAM Expert Group has been established) might have contributed to this situation. In addition, international expertise is not always accessible for small NGO's. These shortages have direct impact on the way that SAM issues are treated in India.

ACF could support organizations and institutions in:

- Monitoring and evaluation of existing programmes, making recommendations for corrective measures;
- Support nutrition surveys and the improvement of nutritional surveillance, advocating for the standardization of survey methods at state and national level (in partnership with research and other relevant actors);
- Participating in the development or revision of key documents (nutrition policies and SAM management protocol revision, development of training manuals) for governmental and non-governmental actors.

### **Axis 2: Technical Capacity Development**

The meaning and implications of SAM are misunderstood, hence technical capacities in SAM management are very limited: from grassroots governmental (NRHM and ICDS) and non-governmental (NGOs, CBOs, and SHGs) actors, to educational institutions (Medical and Home Science colleges), to the decision-making level. The establishment of a common definition of SAM is crucial and there is a need to improve awareness and understanding of the link between SAM and its causal factors, and the possibilities for both treatment and prevention. There is an important deficit of trained personnel with expertise in SAM treatment and prevention, and the need for capacity strengthening on SAM has been expressed by all stakeholders. The increasing number of measures undertaken by government(s) to address under-nutrition will lead to an increased need for training. Putting in place an ACF Training Centre on the management of SAM, accessible to all nutrition stakeholders in collaboration with universities and research institutes, NGOs, ICDS and NRHM would therefore contribute to the building of local technical capacity and encourage its sustainability. The training could include the management of SAM and its different components as well as monitoring and evaluation of programmes.



### **Axis 3: Operational Research and Piloting of Curative Approaches**

Despite many important gaps, some state governments are in the process of initiating or expanding activities in SAM treatment and prevention. Different models are tested, evaluated and then scaled up and integrated into existing structures and services. In 2009, imported Ready-to-Use Therapeutic Food (RUTF) was not allowed in India, in favour of developing local production. There are currently several initiatives to develop locally produced RUTF in India, for which ACF could participate in testing of the product. ACF could also participate in the elaboration and testing of integrated SAM treatment<sup>72</sup> approaches/models using its experience in Community-based Management of Acute Malnutrition (CMAM) in order to promote evidence – based decision making. Piloting community mobilization, sensitization and linking the existing grassroots stakeholders in the prevention, detection, referral and follow-up of SAM cases to treatment facilities could be implemented. This process would build evidence supporting or rejecting the ways of piloting CMAM: through ICDS system, through Public Health Structures, or through the integration of the two departments, for example.

**Scenario 1:** Piloting Integrated SAM treatment might be done in both Madhya Pradesh and Rajasthan.

The integrated treatment of SAM, planned for implementation in M.P., will be an on-going process requiring piloting of the approach and testing the efficacy of the nutritional products (local RUTF). It is initially planned that ICDS centres are the best adapted village level structure to manage the community based treatment of SAM, whereas global experience have shown that primary health structures, when well developed in the country, are the most appropriate structure to be in charge of SAM management. In that sense, both approaches have to be tested in order to build evidence of efficiency of integrated SAM management whether using ICDS or NRHM structures.

The Government of M.P. is likely to implement community based approach of Integrated SAM treatment through ICDS (Atal Bal Mission Draft Document), while the Government of Rajasthan is still in search of solutions. Thus, it would be recommended strategically for ACF to participate in two pilots: one testing community-based integrated SAM treatment through NRHM structures in Rajasthan and second piloting same treatment but through ICDS in Madhya Pradesh. It is also recommendable that both pilots are undertaken in similar ecological zones and similar communities (for example: Bhils in Jhabua vs. Bhils in Udaipur OR Sahariya in Baran vs. Sahariya in Shivpuri). The pilots have to be in close partnership with governments and involving local NGOs and research institutions in order to ensure larger acceptance of the results.

**Scenario 2:** In Rajasthan, together with Department of Health and DWCD, local research institutions and local NGOs, to create a model based on the existing services and limitations (such as lack of local RUTF) to:

- Readjust the in-patient treatment protocol in MTCs.
- Strengthen the linkages between MTCs and ASHAs-Sahayogini and AWW, improving the referral system.
- Strengthen the linkages between MTCs and community health structures (PHC/SHC, ASHAs and AWC) for follow up mechanisms.

**In parallel, to collect evidence of:**

- The capacities of community health structures to detect and manage SAM.

<sup>72</sup> 'Integrated SAM treatment' is the name of the community based treatment of severe acute malnutrition used in the Atal Baal Mission document (M.P.) and in different sources around India. However, the term can be confused with other terminology in use at the international level, such as Community-based Therapeutic Care (CTC), Community-based Management of Acute Malnutrition (CMAM), etc., highlighting the need for a common terminology.



- The efficiency of the MUAC measurement in the early detection of SAM at household level.
- The necessity of Integrated SAM treatment to address the high case load.

### **Technical advocacy, networking and coordination:**

Weaknesses related to governmental policies and strategies on under-nutrition and specifically SAM were underlined many times in this report. More technical evidence-based testimony and sensitization are needed to influence the decision making process in the country. Better networking at national and state levels would be a process benefiting the common objective of eradication of under-nutrition in India.

The purpose would be to advocate for a) updating the national nutrition policy, b) mainstreaming nutrition and SAM as public health issues in health policy and integration of SAM treatment in health structures, c) elaboration of a standardized national nutrition survey method, d) use of simple body measurements such as MUAC in ICDS and NRHM for SAM detection. This technical advocacy has to be well coordinated with other actors sharing the same positions (UNICEF and MSF). More networking, consulting and sensitizing is needed in order to align additional stakeholders behind these ideas.

### **Relief in case of humanitarian crisis**

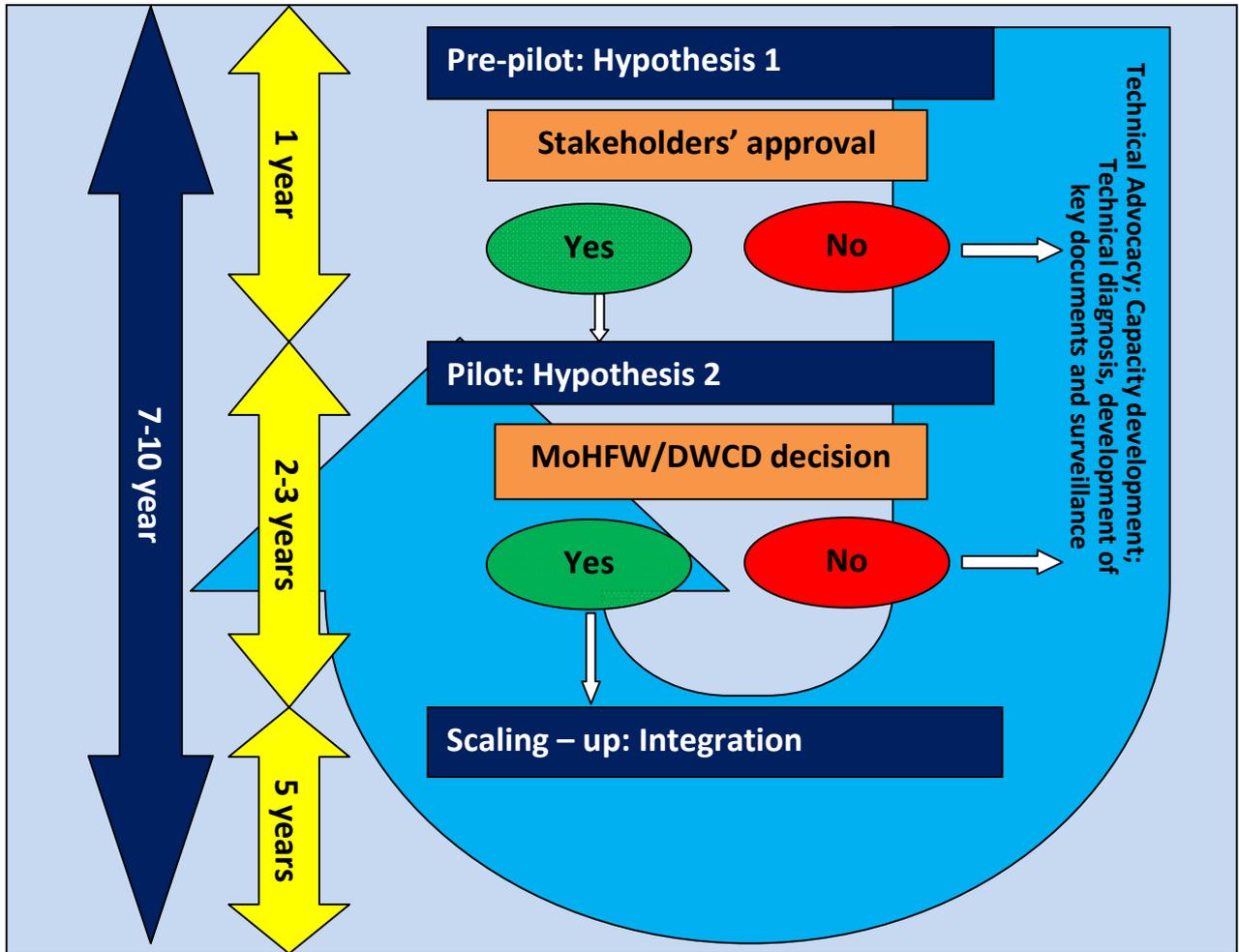
As primarily a humanitarian and relief organization, ACF has to remain sensitive to eventual humanitarian crisis in India. Floods, droughts, earthquakes and other humanitarian disasters are factors that may cause crisis where ACF may play potential role.

### **Development of under nutrition prevention strategies**

Many programmes, supported and funded both by governmental and international organisations, are geared towards prevention activities in nutrition, health education, ANC and PNC, PDS for food security, MGNREGA for employment generation, Total Sanitation Campaign, etc. These programmes help the populations to some extent but have limited impact and require further support. ACF would initially focus on prevention activities on addressing poor feeding and care practices through the management of SAM. The limited access to clean water has been identified as a priority for communities and prioritizing water issues over other important problems such as food security, livelihoods, sanitation and hygiene is necessary. Water scarcity compromises food security (in terms of food production and livestock), livelihoods (time spent fetching water), sanitation and hygiene. It also has an impact on care practices as mothers are likely to spend more time with their infants by saving time from water collection. As many local organisations have been working in water access, have developed a good understanding of the issues and have gained relevant expertise, ACF could identify and support appropriate organisations in their efforts towards realising wider access to clean water.



**Chronogram:**





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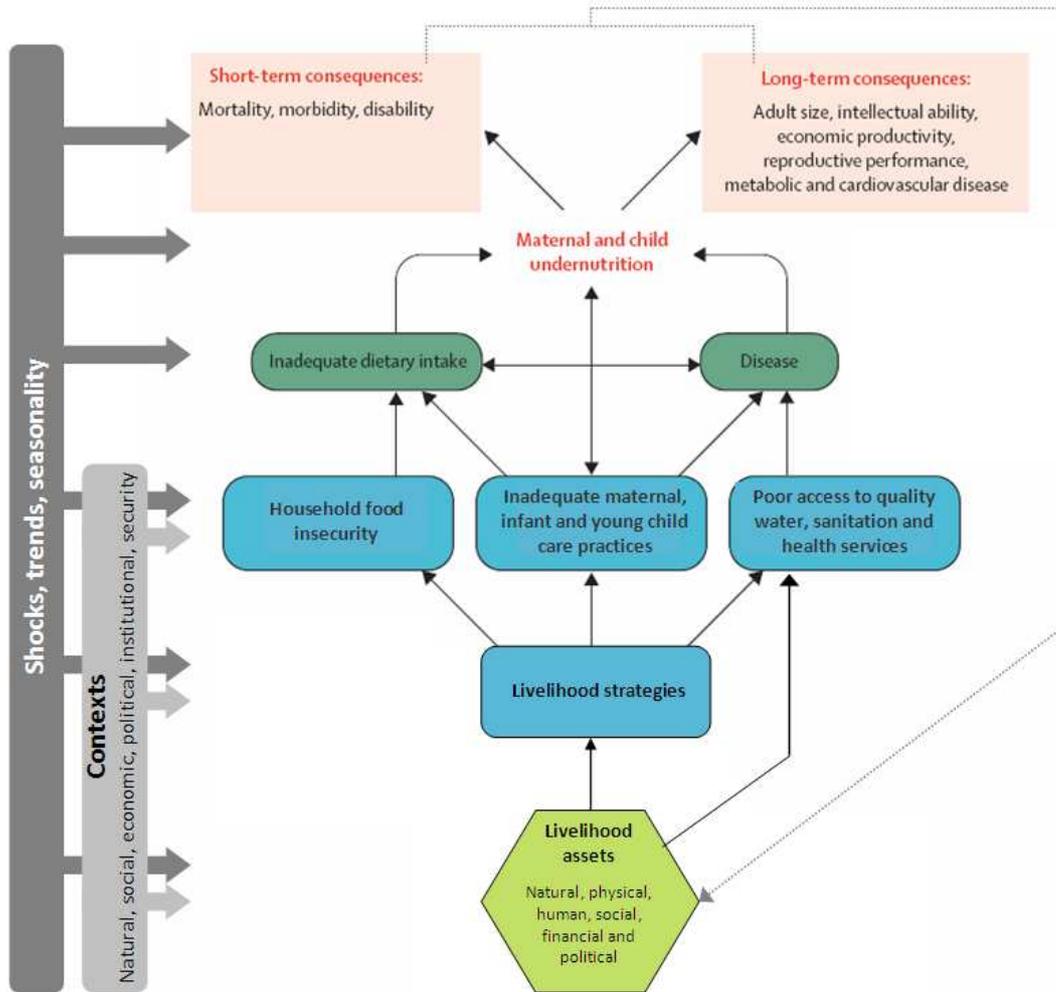
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**Annex 1: Causes of Under-nutrition Framework (source: ACF, based on Black & al, 2008; UNICEF, 1992; DFID, 1999 and WFP, 2009)**





Annex 2: Structure of Integrated Child Development Services (ICDS) and corresponding levels at Health Department.

ICDS Infrastructure		
Level	Social welfare department	Health Department
Block/PHC Population 1,00,000 (Urban/Rural) 35000 (Tribal)	Child Development Project Officer (CDPO)	Medical Officer I/C PHC
	Supervisor (Mukhya Sevika) (MS)	Lady Health Visitor (LHV)
Sector/Sub centre Population 20,000 – 25,000 (Urban/Rural) 12,000 (Tribal)		Auxiliary Nurse Midwife (ANM)
Village Population 800 (Urban/Rural) 400 (Tribal) Anganwadi on demand with a village having a child population of > 40 children	Anganwadi Worker (AWW)	ASHA



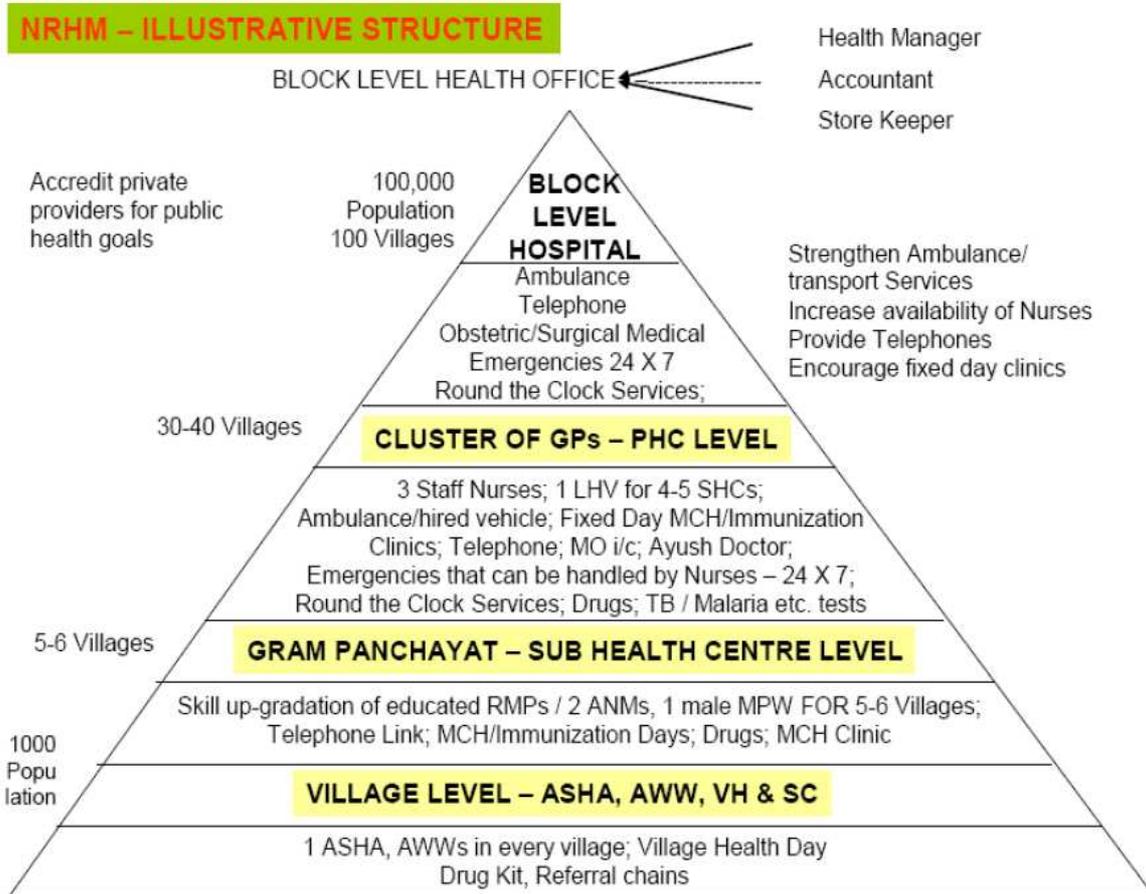
## Annex 3: Nutrition policies in high SAM % states

<b>States with high SAM%</b>	<b>DWCD ICDS IV</b>	<b>MoHFW Nutrition Rehabilitation Units</b>	<b>Specific state policies to address under-nutrition</b>	<b>UN agencies addressing under-nutrition</b>
Madhya Pradesh	Yes	Yes	- Atal Baal Arogya Evam Poshan Mission* - M.P. Child policy**	UNICEF Bal Sanjeevani Scheme
Uttar Pradesh	Yes	Yes	-	UNICEF (Support ICDS)
Maharashtra	Yes	No	Rajmata Jijau Mother-Child Health & Nutrition Mission	UNICEF (Support ICDS)
Bihar	Yes	Yes	Bihar Nutrition Policy	UNICEF – Dular Pilot Project
Rajasthan	Yes	Yes	Rajasthan Child Policy	UNICEF (Support ICDS)
Tamil Nadu	No	No	Tamil Nadu Integrated Nutrition Project (TINP) in combination with ICDS	UNICEF (Advocacy and Influencing Policy)
Chhattisgarh	Yes	Yes	-	UNICEF (Support ICDS)
Jharkhand	Yes	Yes	-	UNICEF – Dular Pilot Project

\*Child Health and Nutrition Mission; \*\*Draft



Annex 4: Public Health Delivery System envisioned under NRHM from the village to the Block level as illustrated below (source: Broad framework for preparation of district health action plan, NRHM 2006)





## Annex 5: Summary of different governmental and nongovernmental approaches to prevent and treat under-nutrition in India.

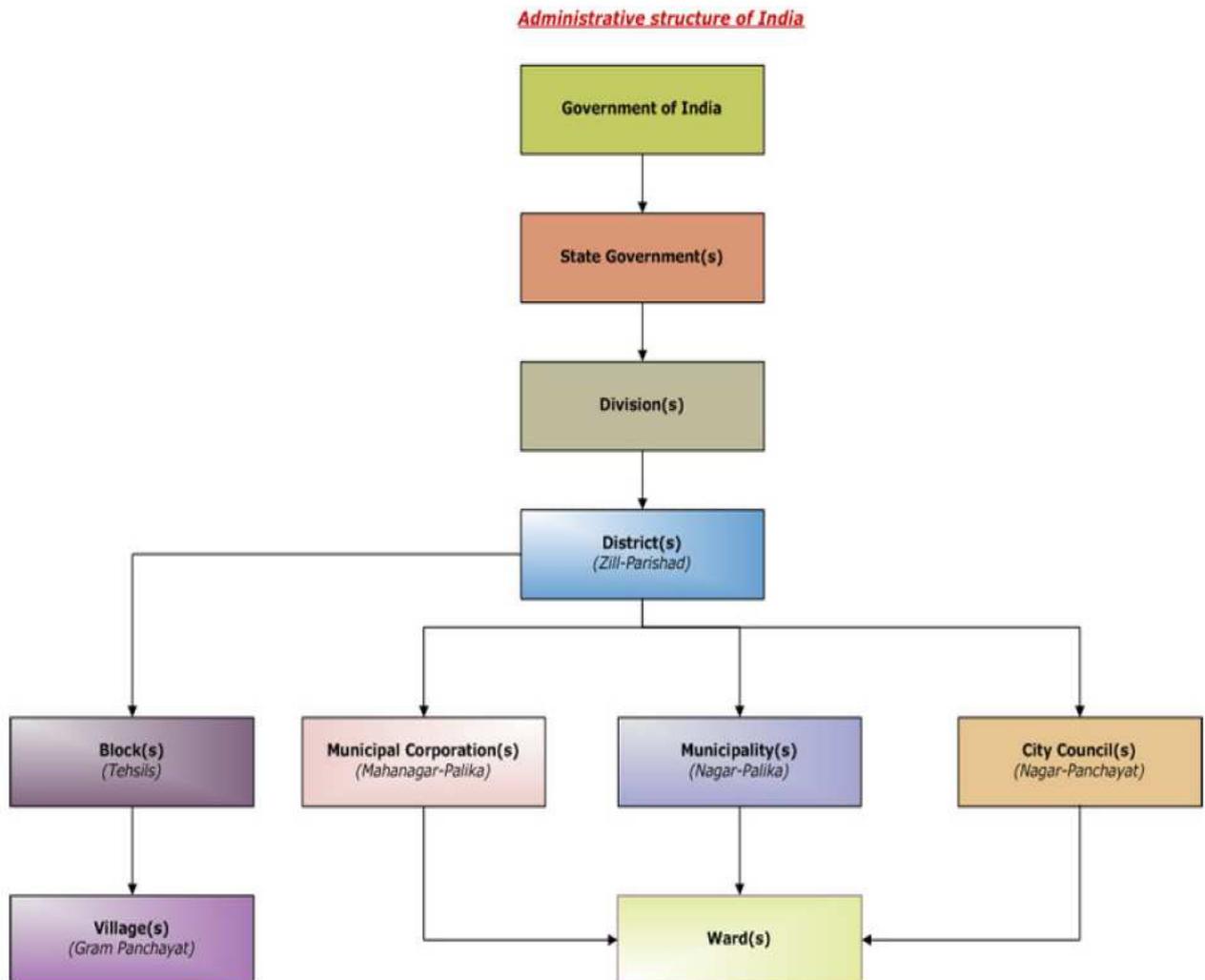
Governmental approaches: with or without partnerships	
Prevention of underweight, anaemia, low birth weights, and micronutrient deficiencies through ICDS. <ul style="list-style-type: none"> <li>• Supplementary feeding and micronutrient supplementation for children, pregnant &amp; lactating women and adolescent girls in ICDS program</li> <li>• Growth monitoring of pre-school children</li> <li>• Immunization</li> <li>• Health &amp; Nutrition Education for PLW and adolescent girls in Anganwadi centres – AWC.</li> </ul>	ICDS supported by UNICEF, WFP, GAIN, MI and large number of Indian corporations, as well as women self-help groups in villages.
Referral of SAM or severely underweight to health structures during the joint ICDS/NRHM Mother and Child Health and Nutrition Day	NRHM and ICDS. The activity is implemented in <i>Anganwadi</i> centres by Auxiliary Nurse-Midwife (ANM), ASHA, <i>Anganwadi</i> worker and helper.
Treatment of severely underweight children and extreme forms of SAM <ul style="list-style-type: none"> <li>• Malnutrition treatment units at hospitals and/or community health centres using IAP protocol.</li> <li>• Follow up visits in the hospitals</li> <li>• AWW/ASHAs home visits for follow up in the community</li> </ul>	MOHFW with the strong support of UNICEF, in Madhya Pradesh, Rajasthan, Jharkhand, West Bengal and Bihar, at different extents
Treatment of severely underweight children ( parents refusing to attend or have no access to health services): <ul style="list-style-type: none"> <li>• Double supplementary ration for severely underweight children under 5 years old given in AWC.</li> </ul>	ICDS
Micronutrient fortification of: <ul style="list-style-type: none"> <li>• Wheat Flour for Mid-Day-Meal scheme</li> <li>• Wheat flour and the salt in PDS</li> <li>• Micronutrient enriched flour mixes used for supplementary nutrition in ICDS</li> </ul>	Different schemes administration supported by NGOs (MI, GAIN, WFP and local NGOs) and large number of Indian corporations.
Micronutrient supplementation (Vit A and Iron-folic acid) and de-worming	NRHM



Approaches of Non-governmental stakeholders	
Community based management of Severe Acute Malnutrition: <ul style="list-style-type: none"> <li>• Detection of malnourished under-5 by community health workers using MUAC</li> <li>• Ambulatory therapeutic treatment (at sub-centres level)</li> <li>• Hospital management of complicated cases (at Primary Health Centre)</li> <li>• Follow-up through community health workers detection (IEC team)</li> </ul>	MSF-Operational Center Barcelona in one block of Dharbanga District, Bihar
Scale-up of the governmental services <ul style="list-style-type: none"> <li>• Community mobilization and detection of malnourished under-5 by community health workers using MUAC (&lt;115mm)</li> <li>• Monitoring and facilitation of the referrals</li> <li>• Monitoring and standardization of SAM treatment in Nutrition Rehabilitation Centres (MoU with Dept. of Health)</li> <li>• Follow-up of discharged children</li> </ul>	Real Medicine Foundation (India Trust) in 5 districts of Madhya Pradesh supported by Clinton Foundation
Community mobilization with specific focus on Health and Nutrition education using community health workers (unsustainable approach) or ASHAs (sustainable approach).	Save the Children India in 5 districts in Rajasthan and West Bengal in partnership with local grassroots NGOs.
ICDS support, monitoring and training.	Save the Children India, World Vision India, and many local NGOs
Low cost model for treatment of severely malnourished children in Nutrition Rehabilitation Centre using Shakti Nutrimix	Child In Need Institute, Kolkata, West Bengal
Nutrition and health care in slums' mobile crèches <ul style="list-style-type: none"> <li>• Breastfeeding and timely weaning awareness</li> <li>• Health Card for each child records immunizations and critical growth indicators</li> <li>• Health and nutrition monitoring - Weekly doctor's visits to monitor growth and address health issues of children/mothers</li> <li>• Special diet of egg/vitamins for the undernourished</li> <li>• Awareness / Referrals - Special Camps for eye care, dental treatment, TB / cancer-checks and other ailments</li> </ul>	Mobile crèches Project, National Capital Region
Technical nutrition advocacy	MSF Campaign for Access to Essential Medicines, Overall India
Operational research on RUTF for SAM treatment (the research is still at proposal stage)	MSF Operational Center Paris, Orissa
Micronutrient supplementation through micronutrient formulation distributions (Anoukha Sprinkles, Nutricandy)	MI - UNICEF currently stopped by Indian Government
Health and Nutrition education through large number of programs: Breastfeeding and complementary food introduction, balanced and nutritious food, female empowerment, care practices etc.	UNICEF, Save the children, Care, CINI, Mobile crèches and hundreds of local partner NGOs
Right based advocacy: access to PDS, ICDS, MDM and NREGA, right to information, right to education, women empowerment, etc.	Right-to-food Campaign, BPNI, Action Aid, Hunger Project



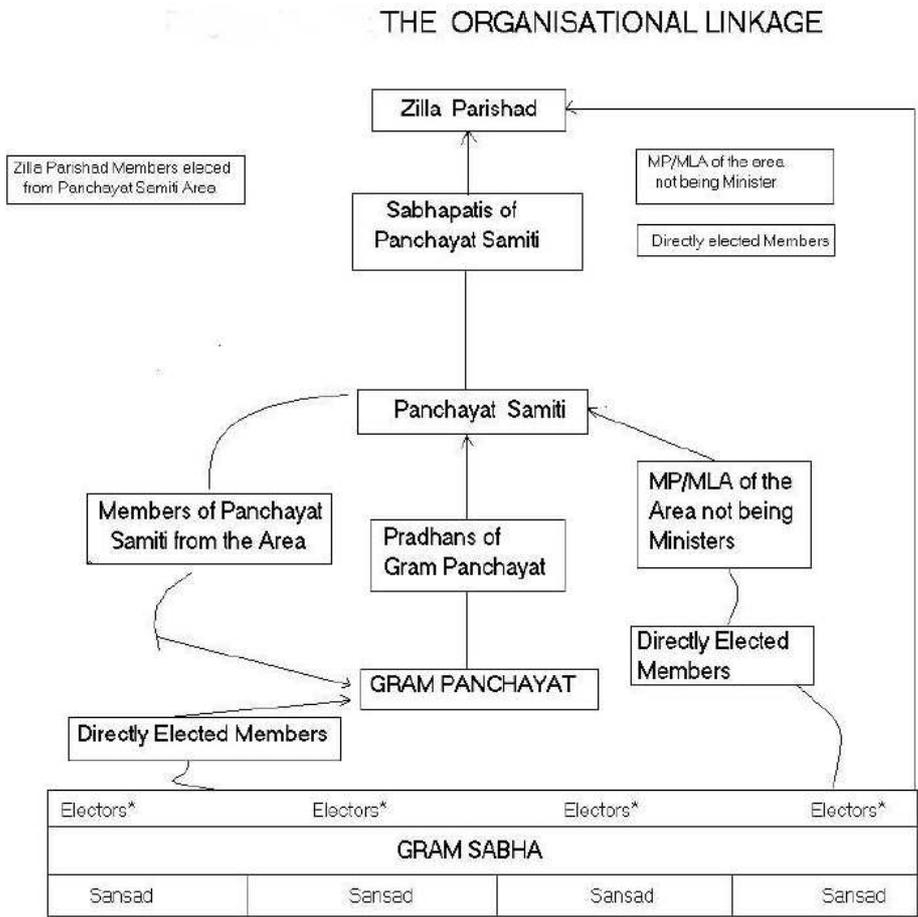
## Annex: 6 Administrative structure of India





Annex 6 (Cont)

The Organizational linkage of the three tier Panchyati Raj System is given below in a diagram.





## Annex 7: Gaps between the convergence of services: DWCD and NRHM

	Detection and Admission criteria	Reporting	Communication	Referral and Linkages	Knowledge
DWCD (ICDS - Anganwadi)	Weight for age	No reporting on how many children referred to NRC/MTC	Monthly meetings organized by ANM, LHV, AWW are not regular and not organized	Poor referral from ANW to PHCs, CHCs	Poor capacity of anganwadi worker to understand SAM
NRHM (NRC/MTC)	Weight for Height	No tracking of defaulters, no reporting of relapses, attendance rate	Fortnightly ANM visits to ANW centers, not done	ASHAs, PHCs, CHCs etc. not actively involved in detection and treatment	- Poor technical knowledge on SAM by doctors and pediatrician  - Participation of ASHA on detection and referral of SAM children extremely low or nil in some states
Gap	- They use different detection and admission criteria  - No early detection in both structures	Lack of comprehensive reporting between NRC and ICDS	Poor communication between staff of NRC and ICDS supervisor	Poor referral linkages and poor follow up	Low Technical Knowledge
Problem	- Beneficiaries detected by wt for age may not be admitted in NRC/MTC as the criteria used for admission is wt for height  - It may also mask the urgent need for therapeutic treatment	Inability to track efficiency of the program, as there is no reporting on any efficiency indicators	High loss to follow up and high number of defaulters within the program		Poor policies, Inefficient programs and strategies to address SAM

Source: a) Convergence of Services, Annexure 4, A Brief on the Convergence of Inter-Sectoral Services in the Anganwadi Centres, (ICDS Projects) Prepared by DWCD available from: <http://www.education.nic.in/cd50years/r/2V/7B/2V7B0D01.htm>

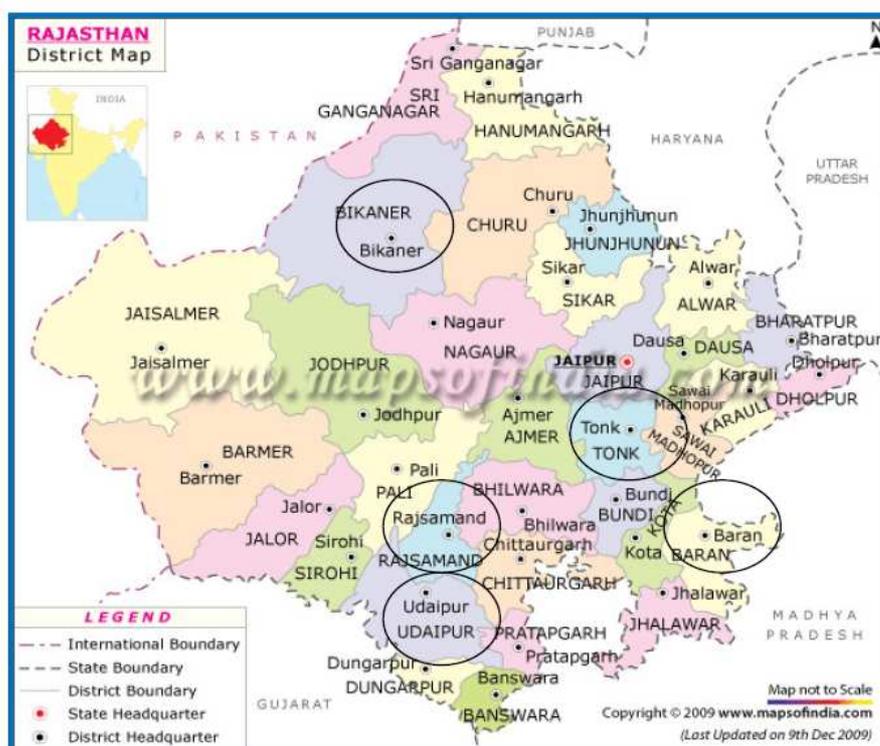


### Annex 8: Assessed zones in Rajasthan

District	Block	Village	Comments
Bikaner	Kolayat, Lunkaransar, Nokha	Gajner, Kolayat, Kalou, Sarunda etc	Facilitated by URMUL, visits in AWC, PHC Kalou, NRC Bikaner, community focus group discussions, visits in houses,
Tonk	Tonk	Tonk	Facilitated by Cecoedecon, Visit MTC Tonk, AWC, community focus group discussions, visits in Muslim houses
Baran	Shahabad, Kishangunj	Kasbathana, Ogad, Swas, Bainta	Facilitated by Cecoedecon and Sankalp. Visit MTC Baran and Shahabad, CHC Shahabad and Kishangunj, AWCs, community focus group discussions, visits in tribal houses
Rajsamand	Kumbhalgarh	Odi, Lakari Koldri	Facilitated by ARTH. Visit to MTC Udaipur, PHC Odi, PHC ARTH, AWCs, visits in tribal houses, home visits in houses with malnourished children.
Udaipur	Kotra	Devla, Gogunda	Facilitated by ASTHA, community focus group discussions, visits in tribal houses

### Maps of Rajasthan and assessment districts

(Source: <http://www.mapsofindia.com/maps/madhyapradesh/madhyapradesh.htm>)



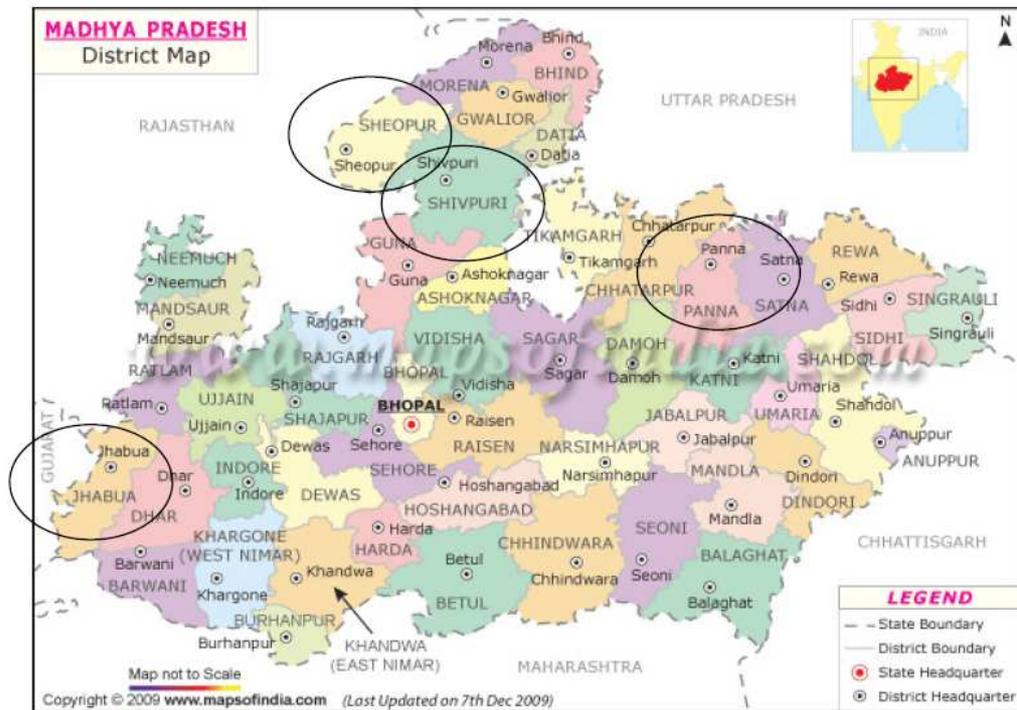


### Assessed Zones in M.P

District	Block	Village	Comments
Jhabua	Meghnagar	Ochka, Agasiya, Madrani	Facilitated by RMF, visits in AWC, PHC Madrani, NRC Jhabua, community focus group discussions, visits in tribal houses, home visits in houses with malnourished children.
Shivpuri	Kolaras	Gugwara	Facilitated by CID, Visit NRC Kolaras, AWC, community focus group discussions, visits in tribal houses, home visits in houses with malnourished children
Sheopur	Vijaypur and Karahal	Bansaid, Uppri Khori, Nayagaon, Shilpura	Facilitated by CID, Madav Foundation. Visit NRC Karahal and Vijaypur, PHC Agara, AWCs, community focus group discussions, visits in tribal houses, home visits in houses with malnourished children.
Panna	Panna, Pawai and Gunor	Gehra, Baradj, Khalda	Facilitated by Parhit NGO. Visit to NRC Panna, Amangunj, PHC Khalda, AWC, community focus group discussions, visits in tribal houses, home visits in houses with malnourished children.

### Map of M.P. and the areas of the assessment

(Source: <http://www.mapsofindia.com/maps/madhyapradesh/madhyapradesh.htm>)





## Annex 9: Health Infrastructure in studied Districts in Rajasthan (Various sources)

District	No. of District Hospital (NRHM)	No. of CHC's (NRHM)	No. of PHC's (NRHM)	No. of Sub Health Centre's (NRHM)	Total No. of Anganwadi Centres (DWCD)	Total District Population (Census 2001)
Baran	1	9	36	206	1323	10,21,653
Bikaner	1	10	38	383	1273	5,29,007
Rajsamand	1	7	36	219	Data not found	9,87,024
Tonk	1	7	45	250	1196	12,11,671
Udaipur	1	18	70	558	2517	5,50,000

## Annex 10: Health Infrastructure in Madhya Pradesh

District	No. of District Hospital (NRHM)	No. of CHC's (NRHM)	No. of PHC's (NRHM)	No. of Sub Health Centre's (NRHM)	Total No. of Anganwadi Centres	Total District Population (Census 2001)
Jhabua	1	4	19	162	Data not found	13,94,561
Shivpuri	1	3	7	89		14,41,950
Sheopur	1	6	20	173		5,59,495
Panna	1	1	18	105		8,56,558