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Delivering Primary Health Care and Education to the  
Brahmaputra River Islands  
*A case study of the Akha: Boat of Hope*

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*Hosted by*  
The Center for North East Studies and Policy  
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## Dedication

We would like to dedicate this case study to the villagers of the *chaporis*:

- For always inviting us in for a cup of *chai* during which they opened their hearts, homes, and lives to us.
- For their humbling perseverance and courage despite annual devastation from monsoon floods that proved we can overcome anything if we truly believe in ourselves.
- For the cheerful smiles and collective sense of humor which taught us how to find the silver lining on every cloud.
- For their ethereal charm and munificent hospitality forever calling us back.

We are eternally thankful to them for making this an unforgettable journey. We hope that as health care, education, and infrastructure become a greater part of their daily lives so too does their way of life become a greater part of ours.



## Acronyms and Glossary

<b>ANM</b>	Auxiliary Nurse Midwife
<b>AMC</b>	Assam Medical College
<b>ANC</b>	Ante-Natal Care
<b>ASHA</b>	Accredited Social Health Activist
<b>AWC</b>	<i>Anganwadi</i> Center
<b>AWW</b>	<i>Anganwadi</i> Worker
<b>BCC</b>	Behavioral Change Communication
<b>CHC</b>	Community Health Center
<b>CDR</b>	Crude Death Rate
<b>CM</b>	Community Mobilization
<b>CW</b>	Civil Work
<b>DHD</b>	District Health Department
<b>DPEP</b>	District Primary Education Program
<b>ECCE</b>	Early Childhood Care and Education
<b>FGD</b>	Focus Group Discussion
<b>EGS</b>	Education Guarantee Scheme
<b>GoA</b>	Government of Assam
<b>GoI</b>	Government of India
<b>HDI</b>	Human Development Index
<b>HSC</b>	Health Sub-Center
<b>ICDS</b>	Integrated Child Development Scheme
<b>IEC</b>	Information, Education, and Communication
<b>IMR</b>	Infant Mortality Rate
<b>JE</b>	Japanese Encephalitis
<b>KAP</b>	Knowledge, Attitude and Practice
<b>LTBC</b>	Long Term Bridge Course
<b>MAPDA</b>	Maternal and Perinatal Death Autopsy
<b>MDG</b>	Millennium Development Goal
<b>MMR</b>	Maternal Mortality Rate
<b>MOU</b>	Memorandum of Understanding
<b>NCMP</b>	National Common Minimum Program

<b>NFE</b>	Non-Formal Education
<b>NGO</b>	Non-Governmental Organization
<b>NHP</b>	National Health Policy
<b>NPE</b>	National Policy on Education
<b>NRHM</b>	National Rural Health Mission
<b>ORS</b>	Oral Rehydration Solution
<b>PoA</b>	Program of Action
<b>PHC</b>	Primary Health Center
<b>PIP</b>	Program Implementation Plan
<b>PPP</b>	Public Private Partnership
<b>RCH</b>	Reproductive Child Health
<b>RMP</b>	Registered Medical Practitioner
<b>SCERT</b>	State Council of Educational Research and Training
<b>SFG</b>	Special Focus Group
<b>SSA</b>	<i>Sarva Shiksha Abhiyan</i> (Education for All)
<b>SSI</b>	Semi-Structured Interview
<b>TT</b>	Teacher Training
<b>UEE</b>	Universalization of Elementary Education
<b>WHO</b>	World Health Organization
<i>Adivasis</i>	Literally "original inhabitants," also a general term for indigenous populations of India
<i>Anganwadi Center</i>	A location designed for pre-school child development through encouragement of thoughts/feelings and introduction to colors, shapes, and textures <sup>1</sup>
<i>Anganwadi Worker</i>	An individual trained in various aspects of health, nutrition and child development that runs the <i>Anganwadi Center</i> <sup>2</sup>
<i>Char/Chapori</i>	A river island of the Brahmaputra River
<i>Gram Panchayat</i>	Local village self-governing body
<i>Janani Suraksha Yojana</i>	Social mobilization for institutional deliveries

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<sup>1</sup> Arora, Samridhi and Bharti, Shaveta and Mahajan, Arti (2006), *Evaluation of Non-Formal Pre-School Educational Services Provided at Anganwadi Centres (Urban Slums of Jammu City)*. J. Soc. Sci., 12(2): 135-137

<sup>2</sup> Ibid.

## **Foreword**

## **Executive Summary**

## Introduction

### The Indian Paradox

As the one of the world's most populous nations comprised of an unparalleled kaleidoscope of diverse ethnic and religious groups, economic stratospheres, immense metropolises, rural villages, and enchanting topographies, India is truly a nation one unto itself. Yet it is also a nation that suffers from extensive illiteracy, widespread preventable diseases, tremendously high maternal and infant death rates, a crippling lack of rural infrastructure, and an unequal distribution of resources. Some of the world's richest people call India home, while the poorest of the poor do as well. On one hand India offers some of the best medical services known to humankind, while, on the other, it faces one of the worst burdens of disease that rivals and, sadly in places, exceeds that of sub-Saharan Africa.<sup>3</sup>

Examples of these stark contrasts are found on many levels and in all areas of India. It becomes clearly apparent when literacy rates in states like Kerala are noted for being equal to those of most developed countries, while rates in states like Bihar have made very little progress during the past several decades and remain astonishingly low.<sup>4</sup> An equally alarming rift exists between national statistics of rural and urban populations insofar as poverty, mortality, health, infrastructure and education indicators are concerned.<sup>5</sup>

Many have argued that the answer to becoming one of the world's leading nations resides in India's ability to overcome this foreboding challenge by eliminating the present reality of two countries within one.<sup>6</sup> In other words, experts have declared that India must put a special emphasis on establishing health, educational, and economic parity amongst its billion-plus population. The MDGs and the HDI are two systems established to accomplish this task. In conclusion, interventions targeted toward raising these indicators in rural areas and subsequently ensuring a higher quality of life through increased access and

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<sup>3</sup> *Child Survival: The State of the World's Children* (2008). © United Nations Children's Fund (UNICEF), December 2007

<sup>4</sup> *National Health Profile (2007). Demographic Indicators*

<sup>5</sup> *National Health Profile (2007). Socio-Economic Indicators*

<sup>6</sup> Luce, Edward (2007). *In Spite of the Gods: the Rise of Modern India*. New York: Doubleday

availability of services and resources for each and every individual is of the utmost importance and the focus of this report.

## Programmatic Setting – Upper Assam

Set squarely between the countries of Bangladesh, Myanmar, China, and Bhutan and connected to the rest of India by a narrow 20-km strip of land, Assam is truly a unique location. Tea production, petroleum, coal, and natural gas are Assam's major economic drivers, whilst it is also known for beautiful golden silks, unique wildlife, and as an untouched tourist destination. Assam also has much to offer in terms of its rich mosaic of culture, history, and industry; however, seven out of eight residents live in a rural setting without necessary infrastructure and basic services. Therefore, close to 90% of the 27 million Assamese residents do not experience the same health care services, schooling, and economic opportunities as do their urban counterparts.<sup>7</sup> Not surprisingly, Assam's social and development indicators are below the Indian national average (Table 1).

Table 1: A Comparison of relevant health and socioeconomic indicators of the Dibrugarh District, Assam and India<sup>8</sup>

Indicators	Dibrugarh District	Assam	India
Human Development Index	0.483	0.407	0.472
Human Poverty Index	13.98	23.24	31
Female Literacy Rate (%)	53.25	70	59
Male Literacy Rate (%)	68.59	86	82
Sex Ratio (Females/1000 males)	923	935	933
Female Life Expectancy	n/a	59	63.9
Male Life Expectancy	n/a	58.3	62.3
Fully immunized children 12-23 mo. (%)	n/a	31.6	43.5
Institutional Deliveries (%)	33.3	22.7	41
Infant Mortality Rate (per 1,000 live births)	51	67	57
Maternal Mortality Rate (per 100,000 live births)	n/a	490	301
Safe Drinking Water (%)	67.22	58.8	77.9

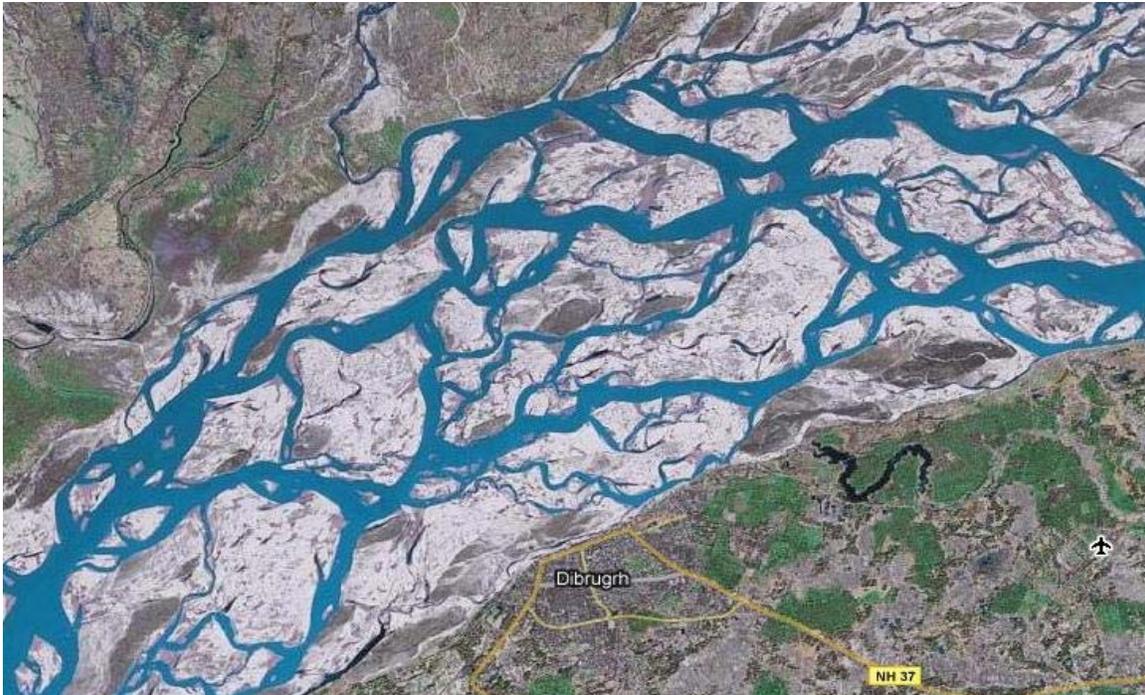
The backbone of Assam in many senses is the Brahmaputra River – one of the world's largest. The river bisects the state's fertile floodplains across which countless tea gardens, villages, and a pastoral life abound. As the Brahmaputra enters India and flows through upper Assam, it forms a highly braided channel. This braided channel gives rise to numerous sand bars and islands also known as *chars* or *chaporis* of which 14 are located in the Dibrugarh District (Figure 1). Additionally, the Brahmaputra's ecologic profile exhibits three characteristics that promote a rapid process of erosion of the *chaporis* – a fragile geologic base, active seismicity, and yearly flooding during monsoons.<sup>9</sup> Thus, the riverine population of roughly 12,000 inhabitants is subject to frequent loss of land and home.

Figure 1: Map of Brahmaputra River chaporis located in upper Assam

<sup>7</sup> (HDR 2003 Assam, HDI India 2007)

<sup>8</sup> Data for the following table were obtained from a variety of sources in order to represent the most currently available information. Those sources are as follows: *National Family Health Survey (NFHS-3) 2005-2006*, International Institute for Population Sciences; *Census of India 2001*; *World Bank Health Policy Note Assam, 1991*; *SRS (Sample Registration System) Bulletin, October 2007, Volume 42. No.1*, Registrar General of India; *RCH-RHS 2002-2004* and *MICS 2000*

<sup>9</sup> (BRAHMAPUTRA GOSWAMI).



Source: © 2008 Google - Map Data © 2008 Teli Atlas, AND, NFGIS, Europa Technologies

### ***Chapori* Population and Social Exclusion**

The Dibrugarh District *chapori* population consists of a mixture of indigenous scheduled tribes known as the Mishings and the Bodos, as well as settlers from the states of Bihar and Uttar Pradesh who arrived during the past century. Such populations experience various degrees of social exclusion – the most common being low income and the synergistic effects of living in poverty. However, we found they were excluded to such levels as not being included on many maps or in available datasets on the regions and districts in which they reside. The programs and policies devised for Dibrugarh district are targeted at the whole of its geographic area including the river islands. However, in reality, many of the interventions have yet to reach the *chaporis*. As a result, the impact of social exclusion significantly shapes their lives directly and indirectly. We have identified two types of exclusion as follows:

*Geographic Exclusion*: The *chapori* inhabitants are spatially excluded from social markets, services such as health and education, public assets like basic infrastructure, electricity and public water supply, and, to some extent, the ability to own their own land as a result of where they live. Furthermore, their lives are complicated by seasonal disadvantages such as annual flooding that may destroy their homes and create occupational instability.

The perspective adopted for development in *chaporis* fails to adequately address specific disadvantages characterizing the population and does not operate as a culturally sensitive intervention. Their sparse population and sporadic residential patterns due to inclement weather conditions calls for a focused, tailor-made system.

*Existential Exclusion*: The *chaporis* population also indirectly experiences social exclusion as a result of a lack of *chaporis*-focused policies. Government policies intended to aid rural populations often do not reach them although the government recognizes their existence. As a result, they are inadvertently denied many of their civil and social rights. This scenario is exacerbated by a dearth of information regarding their constitutionally-given rights. Living on river islands also results in lack of access to social networks and social capital thereby stymieing their social mobility potential. Additionally, they must relocate if they desire work other than that in the pastoral sector as other job opportunities do not exist. Lastly, fear of expression may be present and social confidence lacking due to their being viewed as outsiders mainland residents as well as the presence of violent insurgent groups.

### **Social Exclusion and the Concept of Vulnerability**

Natural disasters in face of annual floods have an overwhelming effect on the coping capacities of the *chaporis* inhabitants in terms of health, food security, water, sanitation, protection of assets, etc. Therefore, these communities become exceptionally vulnerable due to their social exclusion and aggravated living conditions by the weather inclement. Women, children, elderly and people with disabilities become particularly vulnerable in these types of situations. Despite the fact that vulnerable populations consisting of various tribal groups, Scheduled Castes, urban and rural poor, population below poverty level, and inhabitants of isolated riverine, border and forest areas are given special attention while preparing government policies, the current scenario demonstrates the greater need for the enhancement of these policies.

## **Background - Policy and Institutional Context**

### **Health Policies, Programs and Institutions**

Health is a major indicator of welfare that has an immediate repercussion on the quality of life as well as on human economic and social development. The government of India acknowledges that building a healthy society is vital for laying foundations of a thriving and vibrant society and therefore has put provision of “health for all”<sup>10</sup> high on its agenda by encompassing in its commitment a broad arrangement of actions and policies.

The earliest National Health Policy (NHP) was devised in 1983 following the Alma Ata declaration of the WHO and it demonstrated the aspiration of the country to provide health care for all, based on existing needs and to rapidly achieve overall improvement in the health indices of the population. The NHP provided a comprehensive framework for planning, implementation and monitoring of health services. However, access to and benefits from the public health system have continued to be uneven between the better-endowed and the more vulnerable sections of society. This is predominantly true for women, children and socially disadvantaged groups in the country. Consequently, the principal objective of the new NHP-2002 has become to evolve a strategy which reduces these inequities and allows the disadvantaged sections of society a fairer access to public health services.<sup>11</sup>

Furthermore, healthcare is one of the seven thrust areas under the National Common Minimum Programme (NCMP) and improvement in health continues to be an important part in the overall strategy for socio-economic development set forth in government five-year plans. The special focus given to Health Sector in the NCMP has formed the core of the programmes formulated under both Health and Family Welfare and the National Rural Health Mission (NRHM) has become the key to revitalizing the mandate of the NCMP.

The GoI has approved the launch of the NRHM in 2005 with initial seven-year mandate for providing integrated primary healthcare services, especially to those residing in rural areas, the poor and other vulnerable sections of the society. The Mission operates throughout the country with high focus on the 18 States, including 8 Empowered Action Group States (U.P., Bihar, Madhya Pradesh, Orissa, Jharkhand, Uttaranchal, Rajasthan

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<sup>10</sup> The Alma-Ata Declaration of 1978 has identified public health as the sole means to achieve WHO goal of “Health for All” and it is classified as a human right. The Constitution of India is uncompromising on the issue of health and the people. It states in that “the enjoyment of the highest achievable standard of health is one of the fundamental rights of every human being, without distinction of race, religion, political, economic or social condition.”

<sup>11</sup> *National Health Policy* (2002), [http://www.whoindia.org/LinkFiles/Policy\\_National-Health-Policy.pdf](http://www.whoindia.org/LinkFiles/Policy_National-Health-Policy.pdf), accessed on July 7, 2008

and Chhattisgarh), 8 Special Focus North East States (Sikkim, Assam, Arunachal Pradesh, Nagaland, Manipur, Tripura, Meghalaya and Mizoram), Jammu & Kashmir and Himachal Pradesh. Each State develops its own strategy for NRHM respectively under the guidelines of the GoI. The main purpose of the NRHM Mission is to undertake architectural alteration of the current health system and to bridge gaps in rural health care through creation of a cadre of Accredited Social Health Activists (ASHA), increased community ownership through involvement of *Panchayati Raj* Institutions, NGOs and other stakeholders at National, State, District and Sub-district levels, decentralization of the programmes to the district level, inter-sectoral convergence, effective utilization of resources and improved primary health care. The NRHM further aims to improve overarching umbrella to the existing programmes of Health and Family Welfare including RCH -II (Reproductive Child Health), Malaria, Vector Borne Disease Control Programme, TB, Leprosy, Filariasis, blindness, Iodine Deficiency, and Integrated Disease Surveillance. The Mission intends to achieve the goals of the NPP and the NHP through improved access to affordable, accountable and reliable primary health services. Moreover, it addresses the issue of health in the context of a sector wide approach encompassing sanitation and hygiene, nutrition and safe drinking water as basic determinants of good health and also advocates greater convergence with related social sector Departments.<sup>12</sup>

### **Assam State Health Policies**

The stance of the GoA and NHP reflect a multi-dimensional approach to public health care system in Assam which is composed of sub-centers, Public Health Centers and Community Health Centers in rural areas, and postpartum centers and multiple layers of hospitals in urban areas. In addition to the existing schemes for improving the provision of primary health care in rural as well as urban areas, other pivotal concerns such as education and awareness of health issues, dissemination of information on prevention, hygiene and healthy practices, food security and nutrition, safe drinking water and good sanitation, maternal and child health and family welfare are being addressed as well. The State also provides schematic support to immunization campaigns against major infectious diseases, prevention and control of locally endemic diseases, treatment of common ailments and the provision of essential drugs.<sup>13</sup>

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<sup>12</sup> *NRHM Framework for Implementation (2005)*, Ministry of Health and Family Welfare

<sup>13</sup> *Assam Human Development Report (2003)*, Government of India Planning Commission, New Delhi,

While the access to health facilities in the State of Assam has improved considerably over the last several years, the imbalances between rural and urban areas still remain. For instance, there are remote riverine and hill areas that continue to have problems of accessibility. To mitigate this problem, the GoA has taken several initiatives including enactment of legislation to provide an adequate regulatory environment for the construction of clinics and nursing homes, centralized procurement of drugs, and innovative schemes like boat clinics for *chapor*i populations and mobile clinics for hill areas.

The NRHM gives a new thrust to the health activities in the State of Assam in general and the rural areas in particular through the State Program Implementation Plan (PIP). For 2008-09, emphasis is given on reducing MMR, IMR and population stabilization, with special focus on child health.<sup>14</sup>

**Table 2: Major components of Assam State Program Implementation Plan (PIP) 2008-2009**

GOALS	1. TO REDUCE MMR	2. TO REDUCE IMR	3. POPULATION STABILIZATION
OBJECTIVES	<ul style="list-style-type: none"> <li>▪ To increase the 3 ANC and also to reduce the proportion of pregnant women with anemia</li> </ul>	<ul style="list-style-type: none"> <li>▪ To increase the percentage of 13 – 24 of age fully immunized children from 31.6% to 80% by 2009</li> </ul>	<ul style="list-style-type: none"> <li>▪ To meet the unmet need of contraception and increase Couple Protection Rate by 2009</li> </ul>
	<ul style="list-style-type: none"> <li>▪ To strengthen the basic obstetric care (institutional deliveries)</li> </ul>		
	<ul style="list-style-type: none"> <li>▪ Ensure safe home deliveries through Skilled Birth attendants (ANM, GNM, Doctors)</li> </ul>		
STRATEGIES	<ul style="list-style-type: none"> <li>▪ To provide quality antenatal care to all pregnant woman in inaccessible and uncovered areas</li> </ul>	<ul style="list-style-type: none"> <li>▪ To strengthen the present immunization system</li> </ul>	<ul style="list-style-type: none"> <li>▪ Conduct sterilization camps in uncovered areas by increasing access through Govt. and Pvt. Facilities</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Social mobilization for institutional deliveries (Janani Suraksha Yojana)</li> </ul>		
	<ul style="list-style-type: none"> <li>▪ Ensure clean deliveries in home and SC in uncovered and SFG Areas</li> </ul>		

## Education Policy Evolution and Institutions

Educational policy and progress have been reviewed in the light of the goal of national development and priorities set from time to time. Article 45 of the Constitution enjoins upon

<sup>14</sup> *State of Assam Program Implementation Plan (2008-2009)*

the state the responsibility to provide free and compulsory education to all children up to the age of 14 years. The National Policy of Education, 1986 as revised in 1992, had indicated three thrust areas in elementary education-a) Universal access enrolment; b) Universal retention of children up to 14 years of age; and c) A substantial improvement in the quality of education to enable all children to achieve essential levels of learning.<sup>15</sup> During 1979-80, the scheme of Non-Formal Education (NFE) was introduced as an alternative strategy to impart education to children, who for various reasons cannot attend formal schools. Its focus was chiefly on the educationally backward states which included Assam. Alternative Innovative Education centers set up in served habitations to cover out of school children supports flexible strategies including schools in served habitations for rural areas. Sarva Shiksha Abhyan (SSA)-“All learn - All Grow” is Gol’s<sup>16</sup> flagship Program for achievement of UEE<sup>17</sup> in a time bound manner and all the existing programs have been integrated into the fold of SSA. The Program seeks to open new schools in those habitations which do not have schooling facilities and strengthen existing school infrastructure through provision of additional class rooms, toilets, drinking water, maintenance grant and school improvement grants. The framework of SSA has been designed as a peoples’ movement for education for all, which will provide useful and relevant elementary education of satisfactory quality for all by 2010 bridging all social and gender gaps, with vigorous and active participation of the community in the affairs of the schools with a clear focus on District as a unit of planning and implementation.<sup>18</sup>

**Table 3: Current Government Sponsored Schemes in Dibrugarh District<sup>19</sup>**

NAME OF THE SCHEME/PROGRAM	OBJECTIVE/OUTCOME
<b>Early Childhood Care &amp; Education ( ECCE )</b> ▪ ICDS	▪ Feeder and support Program for primary education ▪ Early care and stimulation of children belonging to the

<sup>15</sup> Chapter on Elementary Education(SSA & Girls education)for the XI the plan working group report

<sup>16</sup> Government Of India

<sup>17</sup> Universalization of elementary education

<sup>18</sup> <http://www.ssa.nic.in> accessed on July 8, 2008

<sup>19</sup> <http://www.dibrugarh.nic.in/ssiksha.html> accessed on July 8, 2008

<ul style="list-style-type: none"> <li>▪ Balwadis and day-care centres</li> <li>▪ Pre-primary schools</li> <li>▪ Maternal and child health services</li> </ul>	vulnerable sections of the society	
<b>Education Guarantee Scheme (ESG)</b>	<ul style="list-style-type: none"> <li>▪ Provide education to the children o habitations with no schooling facility within a radius of 1.5 K.M.</li> </ul>	
<b>Mid Day Meal</b>	<ul style="list-style-type: none"> <li>▪ Improving nutritional status of children Universalized supply of cooked meal to primary school children in Govt./ Aided/ Local bodies schools/EGS/AIE centers</li> </ul>	
<b>Long Term Bridge Course ( LTBC )</b>	<ul style="list-style-type: none"> <li>▪ Aimed at out of school children in backward communities</li> </ul>	
<b>Community Mobilisation (CM)</b>	<ul style="list-style-type: none"> <li>▪ Community involvement of management of educational system</li> <li>▪ Mobilization of resources for quality education</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Village, Ward, Gaon Panchayat, and Tea Garden Education Committees</li> <li>▪ School Managing Committee</li> <li>▪ Mothers Groups</li> </ul>		
<b>Special Focus Group (SFG)</b>		<ul style="list-style-type: none"> <li>▪ Community mobilization specifically aimed at disadvantaged, remote and educationally backward area and groups</li> </ul>
<b>Teacher Training ( TT )</b>		<ul style="list-style-type: none"> <li>▪ Capacity building of teachers for quality teaching learning techniques</li> </ul>
<b>Free Text Book</b>	<ul style="list-style-type: none"> <li>▪ Incentive to children from deprived households</li> </ul>	
<b>Civil Works (CW)</b>	<ul style="list-style-type: none"> <li>▪ Developing better infrastructure</li> </ul>	
<b>Alternative Innovative Education</b>	<ul style="list-style-type: none"> <li>▪ To cover out of school children supports flexible strategies including schools in served habitations for rural area</li> </ul>	
<ul style="list-style-type: none"> <li>▪ Sanjyogi Shiksha Kendra</li> <li>▪ Residential bridge courses</li> </ul>		
<b>Girls education</b>		
<ul style="list-style-type: none"> <li>▪ Kasturba Gandhi Balika Vidyalaya ( KGBV)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Setting up residential schools at upper primary level for girls belonging predominantly to the SC, ST, OBC and minority communities from educationally backward blocks</li> <li>▪ Ensuring elementary education of girls belonging to SC,ST,OBC and minority communities</li> </ul>	
<ul style="list-style-type: none"> <li>▪ National Program for education of girls at elementary level(NPEGEL)</li> </ul>		

## Intervention

### Beginnings

The year 2005 marked the beginning of an innovative outreach initiative designed by the Center for Northeast Studies and Policy Research (C-NES) and funded by an award garnered the previous year from the World Bank's India Development Marketplace competition. The purpose of the intervention was to provide emergency relief via health services to *chaponi* residents during times of flooding. Relief efforts were targeted to all *chaponi* residents; however, the primary focus of the initiative was on children, pregnant women, new mothers, and vulnerable adult groups. It was first implemented in the Dibrugarh District on the boat Akha, also known as "The Ship of Hope." Since then, another ship ("Shahnaz") has been built and put into service along with construction recently started on several other boats of varying sizes to be used for various purposes. Additionally, the intervention has expanded its scope as of 2008 to include education activities as well as four other districts (Dhemaji, Tinsukia, Morigaon and Dhubri). The aims of these activities are to improve the quality of education offered by state run schools and incorporate out-of-school children through "bridge courses" and "feeder" schools.

## **Strategies**

Until the Akha boat initiative began, the Dibrugarh District Health Department (DHD) was aware of the need for health services on the *chaporis*, but they were unable to do very little as earmarked funds for the purpose of health service delivery were nonexistent. Therefore, health trips to the river islands were only a reactionary measure once a villager came to Dibrugarh to notify medical professionals about a disease outbreak or acute health emergency. Even then, only male doctors were solicited to travel to the islands by country boat for arduous multi-day trips. Country boats are small wooden eight to ten meter-long boats often used to transport milk and other salable goods from the islands to the mainland. They are not an efficient or safe means of travel for a medical staff. The only other option was to hire larger boats to transport the medical teams, which, according to the Joint Director from the DHD, “was financially not feasible.” Hence, the essence of the initiative was simple and ingenious insofar as it provided a mechanism to the local government to deliver health services (camps) when necessary – now on a regular basis- while simultaneously establishing a launching pad for a seemingly limitless range of services. As of 2007, the ships were staffed by specially recruited medical teams consisting of 2 doctors, 1 GNM, 2 ANMs, 1 lab technician, and 1 pharmacist. This team delivers several different services with more coming online within the ensuing year. Community participation is also ensured by the community worker chosen from amongst them who plays a pivotal role in assisting with mobilizing the community as well as informing them beforehand about the upcoming health camps.

## **Services and Outreach**

The intervention currently works to provide the following health and education services:

### Immunizations

- IMNCI Campaign Initiatives
- Pulse Polio Immunization
- Special Campaign against Japanese Encephalitis

### Curative Care

- Distribution of medicines and detection of disease such as malaria, TB, Leprosy, Kala-Azar and other diseases
- Minor surgical procedures like suturing

### Maternal and Child Health Services

- Child and maternal health checkups

- Treatment of childhood illnesses
- Ante- and post-natal care including tetanus toxoid shots and iron/folic acid tablets
- Referral of complicated pregnancies
- Education about useful health practices

#### Family Planning Services

- One-on-one consultations by doctors about reproductive options

#### Education Expansion and Improvement Initiative

- Baseline survey on the education level in *chaporis*
- 4 Feeder Schools<sup>20</sup> covering 184 out of school children
- 2 Bridge Courses<sup>21</sup> covering 81 out of school children
- Quality improvement of existing schools through teacher training with the support of SSA and provision of teaching materials and school supplies
- Reading enhancement programs through collaboration with other NGO's

#### Veterinary Education

- National Dairy Development Board training

### **Public-Private Partnership**

C-NES began developing partnerships with state and district government offices in addition to the DHD. The initial partnership was manifested through a Coordination Committee (CC). Representatives on the CC were comprised of a host of local government officials, local health administrators, AMC, civil group leaders, and business leaders. The PPP came about as a direct result of the aforementioned scenario regarding lack of service delivery. In 2006, an official MOU was signed between C-NES and the NRHM (ANNEXURE X). Thus, a final PPP was established between the NRHM/DHD & Assam Medical College, C-NES, and UNICEF, which ensured regular staffing of medical staff, programmatic streamlining, and reliable funding.

*“We can't reach everyone. There is so much to do. One group cannot do it all... health service delivery should be an integrated effort.”*  
 – Dr. P.C. Hazarika. *Joint Director of Health Services/NRHM*

<sup>20</sup> Feeder School is associated with a government school and provides education within the *saporis* where there is a lack of required location specific school facilities

<sup>21</sup> Bridge School: Educational opportunities provided to those children who have either never been to school or who have been out of school for a few years

Within four years the program spread from the Dibrugarh district to four others, and has

Government of Assam (NRHM/DHD/AMCH)	C-NES	UNICEF Assam
<ul style="list-style-type: none"> <li>▪ Providing the medical staff</li> </ul>	<ul style="list-style-type: none"> <li>▪ Day-to-day logistical coordination of boat operations and maintenance</li> </ul>	<ul style="list-style-type: none"> <li>▪ Start-up funds for the initiative</li> </ul>
<ul style="list-style-type: none"> <li>▪ Micro-planning in consultation with the block PHCs in Lahowal and Panitola</li> </ul>	<ul style="list-style-type: none"> <li>▪ Staffing of the boat operators</li> </ul>	<ul style="list-style-type: none"> <li>▪ Social mobilization and IEC</li> </ul>
<ul style="list-style-type: none"> <li>▪ Supplies &amp; Equipment: Vaccines, AD syringes, medicines, ORS, mattresses, linens, blankets, weighing scale and sphygmomanometer</li> </ul>	<ul style="list-style-type: none"> <li>▪ Community workers<sup>22</sup></li> </ul>	<ul style="list-style-type: none"> <li>▪ Technical support to and capacity building of service providers</li> </ul>
<ul style="list-style-type: none"> <li>▪ Kit B for the sub-center</li> </ul>	<ul style="list-style-type: none"> <li>▪ Advocacy for scaling up</li> </ul>	<ul style="list-style-type: none"> <li>▪ Daily allowance of government service providers</li> </ul>
<ul style="list-style-type: none"> <li>▪ Provision of two rotation medical interns for outreach sessions</li> </ul>		<ul style="list-style-type: none"> <li>▪ Advocacy with NRHM for program scaling up</li> </ul>

been heralded as a highly successful innovative approach to health service delivery to geographically isolated populations. Because of the PPP's success in the Dibrugarh district via the Akha boat services, it now acts as a state-wide model for service delivery to all *chaporis*. Lastly, the model of partnership and the idea behind the innovation have been recognized by the central GoI and were subsequently requested to upscale the intervention to reach all *chaporis* residents, meaning servicing hundreds of thousands of people. The roles of each partner are listed in the table 4.

**Table 4: The Roles of Actors in the Public Private Partnership**

## Funding

<sup>22</sup> These are instrumental individuals from the *saporis* who notify the community about upcoming camps and assist with social mobilization. They have a tremendous amount of influence on and respect from their communities.

The intervention is entirely funded by the NRHM (Gol) except for new construction of boats, which is the responsibility of C-NES. C-NES derives its funding for new boats through grants and private donations. The NRHM currently provides, on average, 1,897,493 INR per month to cover expenses. One month of services is defined in the NRHM's budget as four trips comprising a total of twenty camps. Around 11% of total expenses are allotted to the Dibrugarh district and the remaining funds are evenly allotted at to the other four districts (~22%). Boat maintenance, fuel, manpower, and administrative costs comprise 28% of the total budget while roughly 45% is allocated to service delivery in the form of medical staff, ASHA payments, camp expenses, training, and capacity building. Mobility and monitoring, which includes the supplemental use of country boats, comprises the remaining 37%.

## Outputs

The following data represent coverage since Akha's inception in 2006.

**Table 5: Progress indicators from health camps over the past two years**

Outreach Statistics since 2006*							
Boat Trips	Health Camps	Patients Treated	Children Immunized (including Vitamin A)	ANC Care	Emergency Support (bed nets, jerry cans, PUR)	Pulse Polio Rounds	Children Vaccinated against JE
45	194	9352	8351	88	240 Families	9 rounds	689

\*as of 30 April 2008

Source: Akha – A Ship of Hope (UNICEF), May 2008

## Future Interventional Components

Future interventions to be added to the existing list of services are ostensibly limited only by time and available man power to construct more ships. Some of them are as follows:

- Referral Boat Services
- Basic Laboratory Services
- Behavioral Change Communication (BCC)
- Information, Education and Communication (IEC)

## Similar Interventional Schemes

Boat clinics are an innovative approach to reach populations that are hard-to-reach because of water barriers. The understanding of the interventional approach of Akha wouldn't be complete without a brief scrutiny of similar interventions all over the world. It is imperative to note that documentation of similar interventions is limited and is not adequate for a detailed analysis.

**Table 6: Five different boat clinics operating in Africa and South Asia**

Boat Program	Services Offered	Target area
AWARE Unique Boat Hospital, AWARE Hospitals <sup>23</sup>	<ul style="list-style-type: none"> <li>• Minor surgeries</li> <li>• Laboratory for diagnostic work</li> <li>• Outpatient services to aged and infants offered at their homes</li> <li>• Immunization</li> <li>• Prenatal and postnatal check ups</li> </ul>	Inaccessible tribal villages of Koyas and Konda Reddis in Bisan Hill Range in River Godawari. India <sup>24</sup>
Ghana Boat Clinic Project <sup>25</sup>	<ul style="list-style-type: none"> <li>• Child welfare clinics</li> <li>• Immunization campaigns</li> <li>• Community health education</li> <li>• Malaria prevention</li> </ul>	Volta Lake Basin, Ghana
Jibon Tari (Boat of Light) floating hospital, Impact foundation, Bangladesh <sup>26</sup>	<ul style="list-style-type: none"> <li>• Surgical services for ophthalmic, ENT and orthopedic conditions</li> <li>• Training local health workers and Traditional Birth Attendants</li> <li>• Immunization and dietary supplementation</li> <li>• Mass health awareness sessions</li> <li>• Physiotherapy &amp; provision of assistive devices</li> </ul>	Off shore islands of Bangladesh
Riverboat Ambulance Services, Chevron Texaco, Nigeria <sup>27</sup>	<ul style="list-style-type: none"> <li>• Basic health services</li> <li>• Anti Malaria Campaign</li> </ul>	Communities in the Escravos and Benin rivers in the western Niger Delta

<sup>23</sup> <http://www.awareweb.org/Institutions.htm>

<sup>24</sup> Menon.Sudha, *Participatory Approach to Community Health: Sustainable Strategy From India*, dlc.dlib.indiana.edu/archive/00002131/01/MPRA\_paper\_1938.pdf (accessed on July 15,2008)

<sup>25</sup> Network for the Improvement of World Health, *A Rapid Evaluation of the Ghana Boat Clinic Program, Perspectives On Mobile Rural Health Outreach*, January 2008

<sup>26</sup> [http://news.bbc.co.uk/2/hi/south\\_asia/316773.stm](http://news.bbc.co.uk/2/hi/south_asia/316773.stm)(accessed on July 15,2008)

<sup>27</sup> <http://www.api.org/ehs/partnerships/community/riverboatclinic.cfm> (accessed on July 15,2008)

	<ul style="list-style-type: none"> <li>• Emergency medicines</li> </ul>	
La Mosquitia Mobile Boat Clinic <sup>28</sup>	<ul style="list-style-type: none"> <li>• Basic health care services</li> <li>• Community assessments</li> <li>• Perinatal &amp; Pediatric Care</li> <li>• Public health and sanitation campaigns</li> </ul>	Communities of Puerto Lempira and Ramon Villeda, Honduras

## Lessons Learned from Other Interventions

The example of Ghana Boat Clinic Project targeting the inhabitants of Volta Lake Basin, Ghana illustrates critical lessons to be learnt from similar interventions. The following were some of the hindrances in the efficient functioning of the Ghana boat clinic intervention which was implemented by Ghana Health Services:

1. High cost of fuel which raised the operational costs to a level which was not sustainable
2. Maintenance issues of the boat prevented regular outreach to the target population
3. High staff turn over which affected the quality of service delivery and forced increased work load on the existing staff
4. Scarce internal financing from the Ministry of Health and limited, sustained donor funding restricted the delivery of reliable health care to the target population.

## Methodology

### Purpose of the Study

The purpose of this study was to identify, document, and analyze the approach and extent by which the “Akha: Boat of Hope” is a socially inclusive intervention for the *chaponi* populations of the Brahmaputra River islands.

### Objectives

The objectives of the case study were to assess how the Akha boat services function as a vector of social inclusion through promotion and expansion of equitable distribution of basic health and primary education services with respect to the following three core areas:

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<sup>28</sup> [www.imagine.org/fileProgetti/scheda\\_progetto\\_honduras\\_eng.pdf](http://www.imagine.org/fileProgetti/scheda_progetto_honduras_eng.pdf) (accessed on July 15,2008)

1. Mapping the Service Delivery design of the intervention and assessing the efficacy of service output.
2. Identifying Sustainability and Accountability concerns vis-à-vis supply and demand factors and supervisory mechanisms furthermore reflecting on the equitable and long term participation of stakeholders in the process.
3. Distinguishing and corroborating the intervention's Compliance with Millennium Development Goals:
  - Goal 2 – Achieve universal primary education
  - Goal 4 – Reduce child mortality
  - Goal 5 – Improve maternal health
  - Goal 6 – Combat HIV/AIDS, malaria, and other diseases

### **Research Setting**

The team conducted research on the four out of fourteen Brahmaputra river-islands where the Akha boat intervention had been taking place since 2005. The four islands were Chokia, Charikholia, Dodhia and Aichung belonging to Panitola and Lahowal Blocks of the Dibrugarh District. The team went on four field visits to the *chaporis* devoting the initial two trips to the exploratory research of the area and preliminary field testing of the research tools. During the next two visits, in-depth fieldwork was performed by the research team with the support of two translators and village community workers. Consequently, a total of eleven days were spent on data collection.

### **Sampling Design and Target Population**

The team adopted a systematic random sampling technique. It covered 10% of total households in each village in order to minimize sampling error.<sup>29</sup> In addition, the four researchers split into four teams and attempted to cover every third household for better representation of the target population. However, the teams did not have a village map and therefore employed the help of community workers who were often unwilling to locate households in such a manner.

### **Research Tools and Data Collection**

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<sup>29</sup> *Research Methods Knowledge Base*, <http://www.socialresearchmethods.net/kb/sampling.php>

For gaining a comprehensive insight on the Akha boat intervention in the Brahmaputra riverine populations and to analyze the extent by which it is a socially inclusive approach a wide range of qualitative and quantitative research tools were designed and utilized.

#### Qualitative Research Tools

- Household Demographic, Health, and Education Survey: One of the primary aims of this survey tool was to create a baseline dataset of the *chapori* households prior to administering other qualitative and quantitative research tools. At the time the survey was implemented, data was not available from the government or from C-NES who had recently conducted a much more extensive baseline survey.
- Knowledge, Attitude, and Practice (KAP) Survey: the KAP was developed based on several guidelines<sup>30</sup> with the main purpose of determining maternal health seeking behaviors and identifying villagers' knowledge, attitudes and practices regarding immunization, sanitation and the Akha boat services.<sup>31</sup>
- Venn Diagram and Seasonal Calendar<sup>32</sup>
- Semi-Structured Interviews (SSIs) with the key stakeholders at the policy-making and implementation levels (Table 7)
- Focus Group Discussions (FGDs) with villagers, *chapori* teachers, and children

**Table 7: Semi-Structured Interviews with the Intervention Stakeholders**

Level	Health Sector	Education Sector
<b>Policy-level administrators</b>	Deputy Commissioner of the Dibrugarh District, Joint Director of Health Services, District Immunization Officer, District Program Manager of the National Rural Health Mission, Panitola Block Sub-divisional Medical Officer	Deputy Commissioner of the Dibrugarh District, District Program Officer for Community Mobilization, District Program Officer for Teachers' Training, Lahowal and Panitola Block Mission Coordinators, Inspector of Schools
<b>Intervention planners</b>	C-NES Managing Trustee, C-NES Associate Program Manager	C-NES Managing Trustee, C-NES Associate Program Manager
<b>Policy Implementers/Service deliverers</b>	Akha boat doctors	<i>Chapori</i> school teachers and AWW

<sup>30</sup> *Advocacy, communication and social mobilization for TB control: a guide to developing knowledge, attitude and practice surveys*, WHO/HTM/STB/2008.46, World Health Organization Library Cataloguing-in-Publication Data

<sup>31</sup> K. Kaliyaperumal (2004). *Guideline for Conducting a Knowledge, Attitude and Practice (KAP) Study*, Community Ophthalmology, Vol. IV, No.1

<sup>32</sup> Callens, Seiffert, Sontheimer, *Conducting PRA Training and Modifying PRA Tools to Your Needs: an Example from a Participatory Household Food Security and Nutrition Project in Ethiopia*, <http://www.ao.org>

Other means of indirect data collection involved various reports provided by UNICEF, C-NES and existing documents on government policies and partnerships in health and education sectors.

### **Constraints**

The study's findings may have been affected by uncontrollable factors such as:

- Lack of baseline data relevant to Dibrugarh district and the *chaporis* population
- Communication challenges as a result of language barriers and multiple interpretations: Assamese/Hindi/Bhojpuri/Mishing-English
- Interpretation bias: Risk of losing information due to translation errors
- Participation bias: Equal participation of all family members, especially women might have been affected due to accepted social norms prevailing in the *chaporis*
- Sample selection: limitation to four of fourteen islands due to specific access/security issues created by inclement weather as well as health camp location
- Sampling error: Each village was comprised of a differing distribution of home density. It was therefore technically impossible to repeat an identical pattern of systematic random sampling on every island.
- Time constraints: Health camps were held during scheduled hours and only during those hours was it possible to collect data. One village had to be completed in one day's time.
- Reporting bias: Presence of Akha boat employees as well as the interpreters introducing us as working with the Akha may have influenced the respondents' answers

With considerable efforts made to diminish the effects of the aforementioned constraints, the team believes that the findings of the study contain valuable information and the subsequent conclusions and recommendations to be based upon valid findings.



## Findings and Analysis

In total, data were collected on 72 households comprising a total of 512 individuals.

### ***Socioeconomic and Demographic Data***

The population sample under study was comprised of two major groups –Bihari and Uttar Pradesh (UP) migrants residing on Charikholia and Chokia islands and indigenous Mishing tribals. They are the native inhabitants of Dodhia and Aichung *chaporis* and have been internally displaced due to inclement weather. The quantitative and qualitative data indicate that the Bihari and UP people had migrated generations ago to the *chaporis* in search of fertile land which adequately supplemented their traditional occupation of dairying and agriculture. The inhabitants of the Charikholia and Chokia islands belong to Other Backward Castes. The most commonly spoken languages are Assamese, Hindi and Bhojpuri. The residents of Dodhia and Aichung belong to Scheduled Tribes. The top three languages spoken are Assamese, Hindi and Mishing. All respondents were Hindu.

The primary occupation of Charikholia and Chokia *chaporis* is dairying complemented by agriculture; whereas, the Dodhia and Aichung inhabitants predominantly derive their livelihoods from agricultural produce. Respondents stated that their occupations significantly depend on the weather conditions and that they suffer annual catastrophic economic losses due to severe flooding as they have no alternative occupations. The nature of one's livelihood and lack of alternative options is a major factor in social exclusion.<sup>33</sup> This scenario was observed on the *chaporis*.

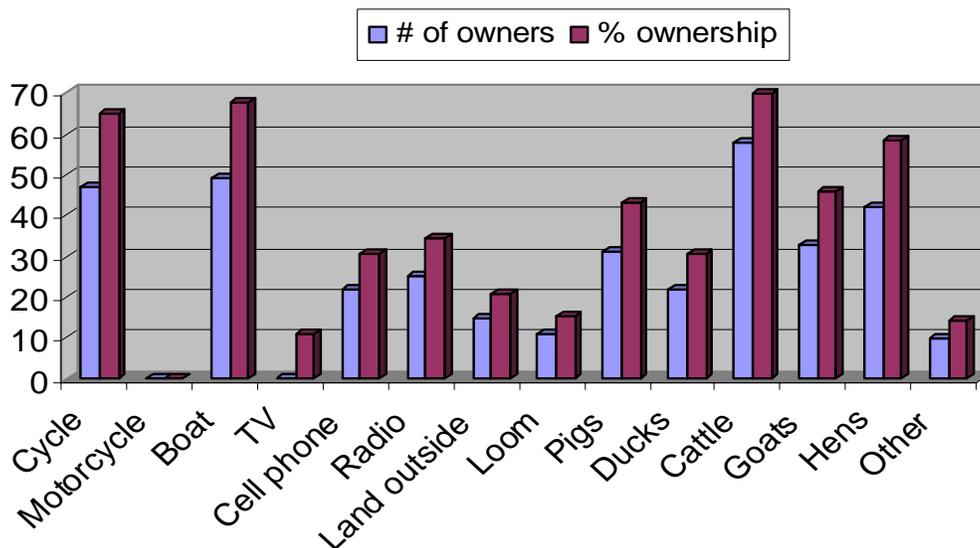
An indirect assessment of household income levels through assets owned indicated that the majority of *chaporis* inhabitants subsist below the poverty line. Even basic infrastructure such electricity, public services, and communication networks such as roads are unavailable. Kerosene is the primary source of power for 96% of villagers. The *chaporis* asset distribution is shown in the following chart (CHART 1). The skewed distribution and low baseline level of assets indicated a system of vertical inequity by which the poorest villagers are left without alternatives and are most vulnerable to adverse economic and geologic incidents. Sadly, the team also heard numerous accounts of the

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<sup>33</sup> Nathan, Dev (2008), *Overcoming Exclusion in Achieving the MDGs: Scheduled Tribes in India*. Institute for Human Development, New Delhi

lives of cattle being valued equal to the lives of their own children.

**Chart 1: Distribution of asset ownership amongst *chapor* residents.**



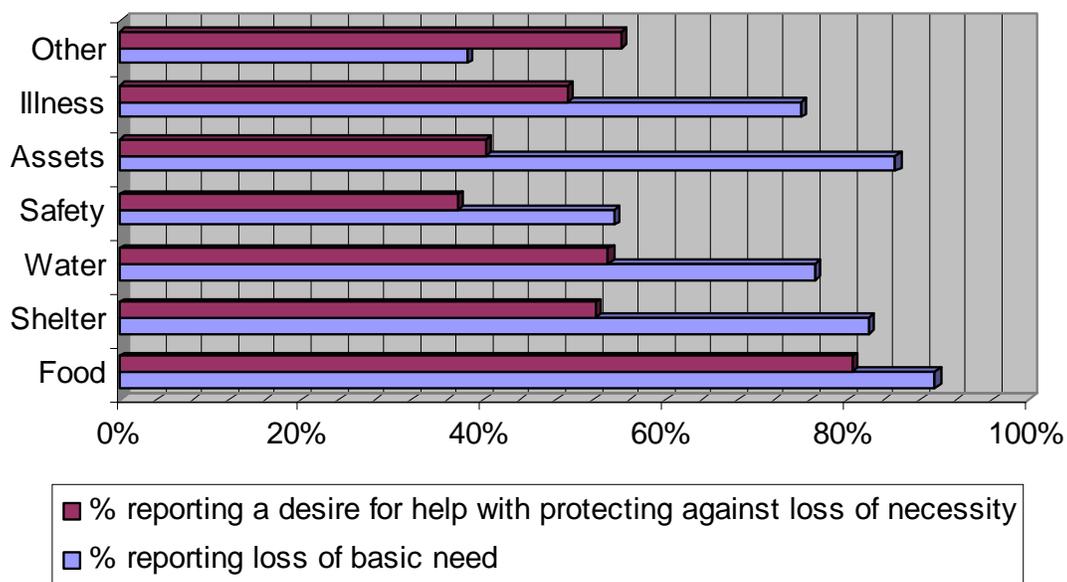
The housing construction of both communities was observed to be distinctly different despite close island proximity. UP and Bihari migrants build homes on mud bases while the Mishings build on elevated timber platforms often more than a meter off the ground. This basic social difference displays the existence of unique community identities. Furthermore, this home building difference indicated a different attitude towards leaving during times of flooding. Migrant people were more likely to leave their homes earlier than were the Mishings as the latter was able to sustain their living standards despite the existence of ubiquitous flooding. This difference was also reflected in their coping strategies (e.g. food storage, survival techniques, preparations). However, a storage mechanism for prolonged periods does not exist within either community, thus food that is stored is never enough. As a result, *chapor* occupants voluntarily starve themselves in order to conserve food supplies through one-meal-a-day rationing as flood durations are unknown.

#### *Coping Strategies during Flooding*

Qualitative anecdotal data demonstrated that a notable percentage of both populations eventually move to higher land, to government sponsored relief camps, or stay on boats in order to cope with the most severe increases in water level. Nevertheless, 66% of households on Charikholia and Chokia islands and 83% on Dodhia and Aichung remain occupied even during the most critical times. Therefore, those who remain on the

*chaporis* find themselves in need of emergency relief services at some point during the monsoon season. It was also found that governmental relief efforts are frequently provided, although the timing is usually after the critical period of need has passed. The respondents who live away generally shift for 10 to 15 days or until the floods recede. Moreover, all are forced to temporarily relocate when water enters their homes, which happens every year or every other year. The most common ways in which flooding complicates villagers' lives is through the loss of basic necessities like food and shelter as well as assets (Chart 2). Additionally, hardships are exacerbated due to a shift in focus from daily needs and livelihoods to solely sustenance and safety. Amelioration of these hardships would be best accomplished through provision of food according to the villagers. Interestingly, the second most desired service was "other" which mostly consisted of a request for veterinary care.

**Chart 2: Effect of Floods on *Chapori* Inhabitants**



*Villager Discontent*

Box X: Quote

*“During floods, we are totally isolated. We live and even sometimes die like animals. Nobody even comes and enquires from the government side whether we need anything during times of crisis. We are jangli people so maybe the government considers us also animals...” – A chapori villager*

An obvious feeling of alienation from uneven development and flawed execution of policies and programs exists among the *chaporis* residents. They feel powerless. They feel

voiceless. And, most importantly, they feel perpetually vulnerable to sudden social and environmental changes. It was found that chapori inhabitants are indirectly marginalized through a lack of available resources and services despite the existence of policies designed to combat this deficiency. Their feedback was that this issue can be overcome only by actively addressing their needs through recognizable improvements.

## **Maternal Health**

### *Perinatal care*

Almost half of mothers interviewed have sought some form of antenatal care during their last pregnancy. 41% of the time it was at the Akha, 12% of from private doctors and 6% from government hospitals. Of the mothers who did not seek any antenatal care, the vast majority was unaware of the need. In addition, respondents stated they required additional income and a means of transportation. This indicates either a lack of knowledge about services provided by the Akha or a lack of interest in seeking service. Although 63% of mothers were given TT shots and IFA tablets at the appropriate time, more than half were unaware of the benefits. Finally, the majority of mothers have received information about nutrition, possible complications during pregnancy and importance of vitamins from care providers.

### *Delivery practices*

86% of 44 respondents have not delivered institutionally. The main reasons were due to unavailability of proximate facilities (57%) and a high cost of travel (29%) – almost identical to the reasons for not seeking perinatal care. Those mothers who have delivered institutionally believe it is safer and have done so by advice of ASHA.

#### *Inspirational ASHAs*

*While administering questionnaires a fascinating trend emerged regarding young women who aspire to become ASHAs. A husband informed us that his twenty-four year-old wife was away finishing 8<sup>th</sup> grade so she could become an ASHA. On a different day, a young girl glowed as she spoke about the village ASHA and how she too would one day be just like her. Overall, villager testimony and FGDs illustrated how ASHAs play an instrumental role in encouraging institutional deliveries and improving health seeking behavior. Amazingly, they command a tremendous amount of community respect and exert a significant amount of influence.*

In half of the home delivery cases the newborns were visited within the first few days mostly by ANMs and only 3% of babies were underweight when weighed.

**Box 1: Birth Registration (WORK IN PROGRESS → moving box to other sections: 1<sup>st</sup> paragraph in background, 2<sup>nd</sup> should be worked into findings)**

*Birth Registration is a fundamental right of every child and the first legal acknowledgement of a child's identity and existence. India is a signatory to the Convention on the Rights of the Child, which obligates the state to ensure that every child's right to Birth Registration is fulfilled (Art. 7 and 8 of the CRC, 1989). Birth registration and access to health care in particular are closely linked, especially for children under five.*

*Our findings show extremely low figures of child birth registration (17%) on the islands. According to the villagers main reasons for such a low birth registration rates are lack of awareness and demand for birth certificates as well as inconvenience due to the remoteness of appropriate administrative offices.*

Although 53% of women on the islands execute light work during pregnancy, 47% continue with their routine labor which often means engagement in agricultural and dairying activities in addition to their household chores until the last days of their pregnancy.

Breastfeeding: The majority of mothers belonging to Bihari migrants feed their children with cow's milk within the first hours after delivery, whereas the first thing given to newborns among Mishing tribes is breast milk. In total, slightly less than half of the mothers interviewed fed their infants with colostrum during the first hours after delivery. However, 54% had not done so as they were not aware of the need and 21% had wrong misconceptions. The following chart illustrates exclusive breastfeeding practices among the *chapor*i mothers (chart 3).

The data demonstrates that almost 1/3 of mothers on the islands rely exclusively on breast milk as their children's source of nutrition for up to 24 months and only 25% feed

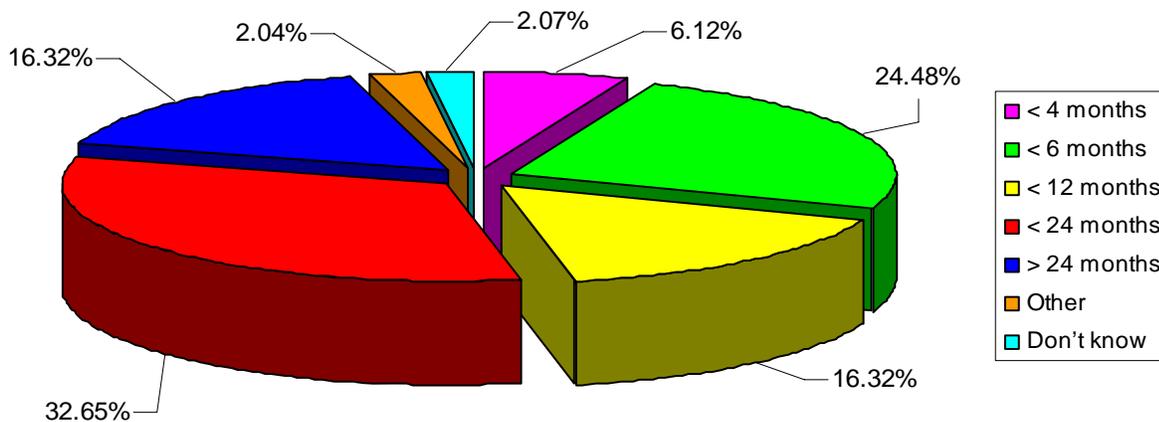
exclusively up to 6 months. There was no complementary feeding reported, often up to 24 months, unless mothers had difficulty lactating. This fact demonstrates the lack of knowledge among mothers about the importance of complementary breast feeding practices after 6 months.

## Immunizations

### *Definition and Findings*

Respondents were asked about immunizations received by each of their eligible children, and, when possible, this information was verified by cross-checking the child’s immunization card as well as upper-left arm scar for tuberculosis vaccination (BCG scar). Data on 191 children were collected with 6 being below the age of 1. Children were classified as being not immunized, partially immunized, or fully immunized according to the

**Chart X: Exclusive Breastfeeding Time**



Gol's recommended immunization schedule.<sup>34</sup> Specifically, the survey asked whether the child had received BCG, DPT (all doses), polio (all doses), measles vaccinations, and at least one dose of vitamin A. Fully immunized meant that children during their first year of life were administered 5 injections (BCG, 3 DPT and measles) in addition to 3 oral doses of the polio vaccine (OPV) and 1 dose of vitamin A. Partially immunized meant that the child had received some level of vaccination albeit incomplete, possible age-inappropriate, and included infants not yet one year of age. (We encountered 3 homes with a newborn child in each. These children were not counted as part of the sample.) Not immunized meant that the child had never received any immunizations. All of these categories were broken down further into all respondents and only those able to provide an immunization card for review. Lastly, immunization rates were also broken down by island group as a predominantly migrant population resided on Charkholia and Chokia whereas mostly Mishings reside on Dodhia and Aichung (Table 8).

**Table 8: Immunization coverage by islands, type of immunization, age, and card status**

	Charikholia & Chokia		Aichung & Dodhia		Total	
	Number	Percent	Number	Percent	Number	Percent
<b>IMMUNIZATION RATES</b>						
<b>Eligible Children</b>	112	58.6	79	41.4	191	100
<b>Card Available</b>	26	24.1	15	19.7	41	22.4
<b>Fully Immunized</b>						
<b>Ages &gt;1</b>	29	27.1	22	28.6	51	27.7
<b>Ages &gt;1 (with card)</b>	3	13.0	7	53.8	10	27.8
<b>Ages 1 to 4</b>	6	35.3	10	43.5	16	40.0
<b>Ages 1 to 4 (with card)</b>	2	33.3	4	50.0	6	42.9

<sup>34</sup> Universal Immunization Program Division, Department of Family Welfare, Ministry of Health & Family Welfare, <http://cbhidghs.nic.in/hii2003/12.01.htm> [Accessed July 21, 2004]

<b>Ages 4 to 18</b>	20	23.3	12	23.5	32	23.4
<b>Ages 4 to 18 (with card)</b>	1	5.9	3	60.0	4	18.2
<b>Partially Immunized</b>	80	69.6	46	60.5	126	66.0
<b>(with card)</b>	25	62.5	15	37.5	40	97.6
<b>Not Immunized</b>	34	30.4	30	38.0	64	33.5
<b>(with card)</b>	0	0	1	3.3	1	2.4
<b>BCG</b>	71	73.2	37	42.0	108	58.7

It was found that very few of children's parents were able to produce an immunization card for reference. The most frequent reasons parents did not have cards to produce were: they had discarded them after their child completed his/her series of immunizations; the card kept by the Akha boat since their child was currently undergoing the immunization process; and their child never participated in the immunization process. Most parents whose children were beyond the traditional age of immunization expressed a perplexed response when asked about saving the card. The impression that resulted from conversations was that they did not see a reason why the card should be kept if their child had already completed his or her series of vaccinations. Therefore, considering all of the reasons parents did not retain the immunization card, the practice of deciphering immunization prevalence exclusively through card confirmation was considered to possibly underestimate the true rate of immunization.

A double-digit proportion of *chapor* children, even those born in temporal proximity to the start of Akha boat services, had no immunization coverage. This percentage, while a minority, is of concern and warranted further investigation as a goal of the Akha intervention and Gol is to fully immunize 80% of children. Furthermore, it is well known that in order for immunizations to have a preventative health effect in a population, greater than 70% of those susceptible to a disease must receive vaccination. Analysis of the delivery system from the supply side showed no problems with availability of vaccines, lack of qualified health professionals or time available to administer injections. Surprisingly, we discovered from historical accounts given by Akha boat workers as well as from SSIs of

members of C-NES and UNICEF Assam that the initial reception to immunizations by the villagers was markedly circumspect. The villagers believed that immunizing their children would lead to sterility. While the genesis behind this was not researched, the misconception was dispelled by educational meetings shortly after C-NES began running regular health camp campaigns. The majority of children had received at least some immunizations. Also, full immunization (27.7%) was lower than that of India on average but higher than the rate for the state of Assam (Table 1).

We were also able to confirm tuberculosis vaccination by examining the upper portion of the children's left arms. The BCG finding was considerably higher than that of full immunization rate with card. This prompted closer examination of the data, and it was found that the limiting factor to full immunization was a very low rate of the third confirmed DPT dose. Therefore, the full immunization rate was analyzed to see if, in fact, the reported total immunization rate greatly differed from that of the confirmed (card available) total immunization rate when the limiting factor (immunization card confirmation) was removed. Surprisingly, it was found that the total immunization rate was identical, regardless. The reasons for this result could likely be attributed to several statistical biases resulting from the study design and participant bias, but what it is likely the case is simply chance playing a role in very small sample sizes. Since each population, even the overall pool of children who were immunized, is very small, the rates should be interpreted as signals rather than prevalence rates.

#### **Box 4: Immunization**

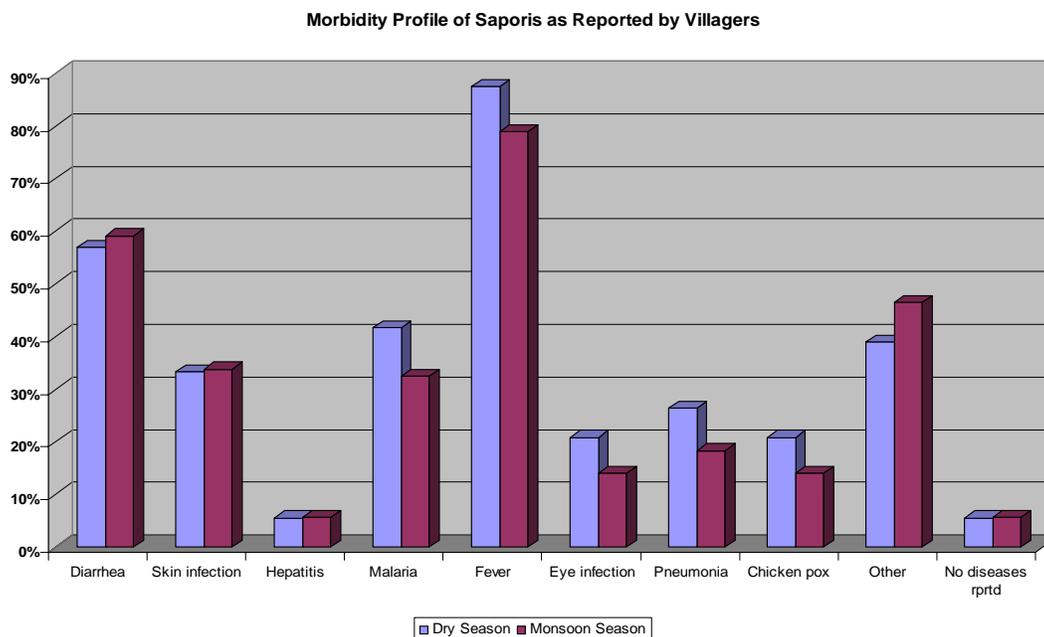
*Importance of Immunization*

A man, woman, and their small child traveled more than three hours by foot crossing river channels in the pouring rain one morning to seek immunizations for their young infant who could not have been even a year old. The team learned of this from one of the community workers and searched out the young family. All three appeared to be in good health, so we asked why they had come so far. Their reply was simple and direct. They had come because their child needed to be immunized, and the *sapori* on which they lived was not serviced by the Akha boat. This seemingly modest act of bringing one's child for immunization instantly became a young husband and wife's dramatically humble act of commitment to ensuring their child has every possible chance of a healthy childhood. Their determination and actions memorably demonstrated how highly some villagers value immunizations provided by the Akha.

Other notable findings in the data included a marked difference – almost double the percentage - between children who would likely have been fully immunized by Akha services and those children that would not have been due to their age being above the 12 to 23 months. GoI prescribed window of time for immunizations at the time the boat intervention started. Children up to, but including, age 4 were included as part of those who could have been seen at the health camps. This sent a clear signal that while the percentages may not be reliable, an impact on the numbers of children immunized over the past few years.

Data also established that immunization rates between islands populated by migrant populations (Charikholia and Chokia) hardly changed from islands populated by indigenous peoples (Aichung and Dodhia). The only noticeable difference occurred between rates of tuberculosis (BCG) vaccination. Rates between the two were examined for the purpose of elucidating health-seeking behavior differences or other health preference nuances. While it is not possible to conclude there are no differences between how the two populations go about seeking out immunization, it does appear that neither population is especially averse to having their children immunized.

*Morbidity Profile*



### Limitations of the Data

C-NES had conducted a comprehensive data collection campaign just before the team arrived, so the data were not available for comparison. Data on immunizations were collected by the research team in as much detail as possible; however, there were obvious limitations to our collection methods due to weather and time constraints. Also, there was not an immunization status baseline dataset available. Consequently, we were unable to make a quantitative assessment regarding the intervention's influence on immunization rates. Also, details on the cards themselves such as conflicting dates and incorrect timing of immunizations were present to some degree. However, of greater concern, was the inability of parents to recall specific birthdates, which may have resulted in children listed with the wrong age and thus incorrectly categorized. Furthermore, the records of the Akha boat were not cross-referenced to determine to what degree parental recall skewed the results. The finding of identical rates of full immunization may have been untrue due to this recall bias.

### *Akha's Influence on Immunizations*

87% of respondents stated that immunization of their child is important. An overwhelming majority of respondents (81%) said they prefer to immunize their children at the Akha Boat. Villagers often commented when asked about preference of immunization site that they were glad the boat came to their village rather than them having to go to a health

clinic. Some went so far as to acknowledge that the Akha did not have to come, and they were thankful that it did. Upon further probing, it was found that more than 70% of respondents said that they previously had taken their children to various health care facilities located on the mainland, which meant a significant added expense, lost earnings due to much time spent traveling, and, consequently, a reduced interest in having their children immunized. Evidence for this appears in Table X. Immunization rates between children of ages 1 to 4 are almost double that of the 4 to 18 age range. Half of the Parents that reported they did not immunize their child stated that it was a result of a lack of knowledge about place and time immunizations were administered as well as the same percentage saying that the site was too far. Comparatively, only 1 out of every 5 respondents stated that they were unaware of the need for immunizations, which roughly correlated with the percentage who confirmed immunization is important.

#### *Vaccine Knowledge and Access*

A second tier of questions was targeted at acquiring information about parental knowledge regarding their understanding about the importance immunizations as well as their perceptions surrounding side effects, quality vaccines, and provider interaction. Over 70% of parents knew that the reason their child was immunized was to prevent disease. However, when they were asked against which diseases their children had been immunized, only 44% knew. And most often the only disease they were able to recall was polio. In fact, it was common when asking to see the immunization card to refer to it as the "polio card." Most parents (72%) said that they had saved the card, but only 22% were able to produce it when asked. Overall, few people believe that vaccines are dangerous (3%), while a majority do understand that vaccines have some side-effects (65%). About 7% of parents had sought medical attention as a result of illness from a vaccine. Only a third of respondents stated they had expressed concern regarding immunizations to the vaccinator, and, when this question was further probed, the parents said concerns were usually expressed after their child had experienced an adverse effect. This likely indicates an *ex post facto* understanding about the side-effects of immunizations as well as a lack of assertive behavior about ensuring child health safety prior to accepting medical services about which little is understood. While vaccines are known to be generally safe, the underlying concern is that village parents may not be able to discriminate between safe efficacious care and harmful low-quality care, which could endanger them and their children. This scenario was seen in multiple instances. For example, about half of

respondents answered that they had been informed about the purpose of the vaccine; however, information beyond that the purpose of immunization is to protect their child from disease was rarely, if ever, known.

## **Health seeking behaviors**

### *Child health*

55% of the interviewed mothers did not know what actions to take when their child gets diarrhea. Only 24% of total respondents reported the usage of ORS and 16% have resorted to specific diet restrictions. Yet, our findings indicate that almost half of the mothers who had used ORS did not know how to administer it properly. The sizeable part of the respondents was not aware of the factors causing diarrhea and some of them even had misconceptions such as blaming the occurrence of the disease on sins. 33% saw the necessity of visiting a doctor after 4 or more days of continuous loose movement. With regard to possible impact of diarrhea on child's health if untreated, more than half of the interviewed mothers responded that it could lead to death in the worst case scenario. All these findings in combination with the fact that the majority of respondents could barely identify signs of dehydration and had no information on ways of preventing it demonstrate the general lack of knowledge on health seeking behavior among our target populations.

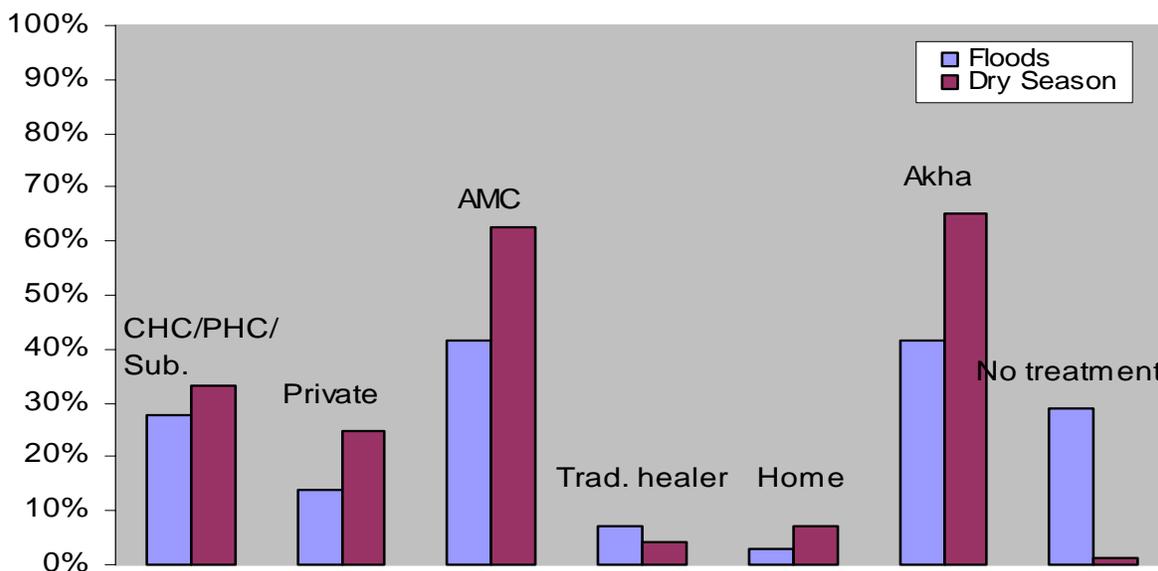
### *Malaria*

57% of the respondents considered mosquitoes as main disease transmitters and 34% stated that malaria spreads by having dirty standing water near their houses. However, 49% did not know what the main breeding source for mosquitoes is and though all the interviewees reported using mosquito nets, 33% were not aware of the main purpose of using nets and had no information on the exact reasons of malaria transmission. 3% blamed the incidence of the disease on abrupt changes in weather, such as extreme heat or rainfalls. According to 41% of the respondents malaria is always a grave disease and the majority of them identified fever, shivering, convulsions and sweating as its main symptoms. 23% were not aware of the malaria symptoms and 79% did not know how to treat it.

*Health services*

The following chart illustrates the fraction of health care services accessed by our sample population during dry season and floods.

**Chart X: Health Services Accessed**



As we can see from the chart, the percentage of all types of health care facilities attended drops dramatically during floods, whereas dependence on traditional healers increases. According to the qualitative data obtained through various in-depth interviews and discussions with the villagers it became obvious that while the majority of interviewees prefer to go to government health care facilities or private hospitals, frequently they continue receiving treatment from traditional healers. Access to health services is an enduring concern during times of flooding. However, the majority of people do not seek non-emergency health services as it is logistically too difficult and transportation costs are high. Villagers turn instead to traditional healers and greatly reduce their consumption of primary health care services outside the islands. Furthermore, the team found that the boat does not deliver services during conditions of peak flooding due problems with accessing the islands. Thus, the islands return to a state of almost total geographic isolation with no accessibility or availability of health services. The main reason for this is that in exceptionally critical flood times it becomes practically impossible for the villagers to seek cure outside the islands and traditional healers become the only service deliverers available in the village. In some cases Akha boat has also faced technical difficulties

reaching the chaporis and delivering health care to vulnerable groups. However, when the boat services are available, the great majority of respondents informed using them, primarily for health check ups (75%) and curative care (62.50%). Other types of services sought are preventive and ante-natal care. Correspondingly, almost 80% of people benefiting from Akha services demonstrated high trust levels toward the boat medical staff.

The data also indicates that the number of people not seeking any form of health care boosts from 2% during dry season up to 29% in flood times, again due to unavailability of facilities and infrastructure.

56% of the respondents reported receiving health treatment before the Akha boat intervention at the AMC Dibrugarh. 32% went to private hospital/doctor, 29% - to CHC/PHC and 20% - to Sub-centers. 9% out of total interviewees did not seek any type of health care.

Respectively, the majority of respondents got their medicines from AMC Dibrugarh, PHC or Sub-centers. A sizeable part of the population was observed to be using several types of health services depending on the severity of ailment, 54% of whom preferred to go to AMC in case of life threatening disease. Primary reasons for seeking health care were fever, headaches, stomach ache and diarrhea. Although morbidity profile during dry and monsoon seasons appears to be more or less the same with slightly increased numbers of fever cases during flood villagers reported higher incidence of diseases immediately after floods.

General: in order to assess the knowledge of villagers with regards to general health practices the team tested out several **true/false** statements among the respondents. The results indicated that 60% of the interviewees perceived the statement: “a patient who feels better can stop taking his/her medicine even if the regimen prescribed has not been completed” as correct and 39% believed that “a good doctor should always give an injection to sick patients.”

## **Sanitation**

Drinking water: the chief source of drinking water was found to be hand pumps (97%) for all the people on chaporis (72 households) although 2.78% people used river water. Out of the total population, 17% of people boiled drinking water and 6% of people filtered it before consuming. A greater part of our sample population did not boil or filter water before drinking because they were unaware of its need. Those who practiced it were informed in some way by health camps. According to these people, water which seems clean to naked eyes requires no further treatment for drinking.

Sanitation patterns: Their site of defecation was observed as open fields (98%) and pit latrine (1.4%). None of the households had water seal latrine at home as well as bathrooms. For bathing they construct partitions out of bamboo and coconut leaves with a firm stone base. For drainage, channels are dug in soil. Washing hands before eating was practiced by 98.57% of sample population. Besides water, they used ash (7.14%), soap (31.42%) and soil (15.71%) to clean their hands. Prior to food preparation, 78.57% washed their hands. After defecation, washing of hands was followed by 100% population. In addition to water, they made use of soil (52.82%), soap (34.28%) and ash (15.71%). Reasons for developing the habit of washing hands prior to eating, food preparation and after defecation were cleanliness (78.57%), avoiding bad smell (18.57%), prevention of disease (8.57%) and socially encouraged (2.85%) respectively. Though majority of people washed their hands before eating, food preparation and defecation, they were not aware of the exact rationale behind it.

Use of hand-pump which is the major sources of drinking water during dry seasons becomes not feasible in course of flood as it gets covered with water and the only alternative is consumption of river water or flood water. Their defecation sites also experience the same degree of assault and in the utmost extreme cases they are compelled to control even the urge of defecation.

## Education

### Availability and Accessibility of Services

**Anganwadi enrolment** was only 14.28% out of the total number of children eligible for *anganwadi* admission. There is a dire lack of sufficient number of AWC<sup>35</sup>s in the river islands despite the policies<sup>36</sup> directed at the *chaporis* population. For instance, there are no AWCs in Chokia and Charikholia *chaporis*. The AWCs are restricted in the number of children they can enroll and in effect, the vast majority of the children between 2 to 5 years from the *chaporis* don't get the benefit of *Anganwadi* enrolment. The existing ones in Aichung and Dodhia don't have necessary infrastructure like utensils, furniture, etc. which practically nullifies the benefits of mid-day-meal schemes and other amenities of AWCs. The *anganwadis* in Aichung and Dodhia had never been able to provide mid-day-meals to the children enrolled. The remuneration which is to be given to the *Anganwadi* Workers is also often delayed which reduces their motivation to work effectively in an already disadvantaged situation. **Number of schools** in the *chaporis* as indicated in the table is limited and inadequate compared to the enrolment rate. The children in the *chaporis* are especially vulnerable as their **higher education** is concerned. Majority of them is deprived of it simply because there is no access of education and lack of quality service delivery mechanisms for them. There are no Middle Elementary (ME<sup>37</sup>) schools in any of these *chaporis* except one part of Dodhia. Thus the choice of education after 4<sup>th</sup> is limited to only opportune few whose parents have the financial means of getting education either from mainland schools or other ME schools. It is interesting to note that 77 and 72.1% of children among the respondents from the group of islands respectively were not studying in classes corresponding to their ages. Yet it was disappointing to note that there was not even one graduate student among the respondents. They often have to retreat back to their traditional occupations as the education they receive is not qualitatively and quantitatively adequate to give them social mobility towards a better life.

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<sup>35</sup> AWC refers to Anganwadi Centre

<sup>36</sup> Supreme Court of India; order dated November 28, 2001

<sup>37</sup> ME refers to Middle elementary class ( Standard 5 to 8)

*Aspirations of a village boy....*

*Raju is 21 years old. But unlike his peers in the mainland he is not working or completing his graduation. In fact he is just completing his Standard 9 education from a school in Sabua. He has to rent a house and stay there with other students to complete his education. He doesn't really know how it is going to help him get a job. He is often worried that he has to go back to the village and has to resort back to agriculture as his entire family does. But Raju likes to study and wants to make most out of the little education he is getting. He truly believes that had he been born in any other place than the saporis that he could have become a doctor. But for now, he is not sure of his chances.*

**Infrastructure** available in these schools is often poor or nonexistent. There are not even enough blackboards and benches as per requirement. During rainy season the leaking school classrooms is a familiar sight in the *chaporis*. There are no partitions in the classrooms which forces the students of different classes to sit together which starkly affects their quality of education.

The **physical distance covered by students** to reach school is phenomenal as they have to walk or travel by boat for a maximum of an hour to two and a half hour on an average to reach their schools. During monsoons, this is even complicated by internal water channels which restrict the journey of the students. Attendance as the teachers from the schools pointed out declines heavily during the rainy season as there is lack of proper roads or transport facilities which ensure the safe journey of children to their respective schools. Notwithstanding the free education guaranteed by the Constitution of India, most of the parents have to incur expenses in travel and other incremental expenses for the children which become an added burden especially in families which have more than 2 or 3 children.

The **teacher student ratio** was extremely low. Most of the schools as indicated above had a maximum of 2 teachers to instruct more than 100 children on an average while as a school in mainland will have a teacher student ratio of 1:40. The lack of adequate teachers exerts severe pressure on the existing teachers and the quality of education is affected. The dearth of sufficient incentives and the inaccessibility of the region accentuate the problem. The teaching learning material supplied for school often remains unused because of the work load and deficient training received by the teachers of the *chaporis*.

**Table 9: Available Educational Infrastructure in the target areas**

Infrastructure	Charikholia	Chokia	Aichung	Dodhia
AWC	0	0	1	1
LP School	1	1	1	1
ME School	0	0	0	1
HS	0	0	0	0
No: of teachers	2	1	1	2
School building	RCC <sup>38</sup>	RCC/Semi pucca <sup>39</sup>	Pucca	Semi Pucca

### Enrollment Trends

**Differences within chaporis:** As the table 9 indicates, there is marginally higher perceived need for education in Chokia and Aichung *chaporis*. 71% of children from Charikholia and Chokia and 87% of children from Aichung and Dodhia amongst the school age respondent group were attending school. It might also be corresponding to the fact that the educational infrastructure available in Panitola block in which Aichung and Dodhia belongs to is higher compared to that of Chokia and Charikholia (Lahowal block). It was also found that mostly students from Chokia and Charikholia went to schools catering to only migrant population and did not access education facilities available in *chaporis* belonging to the Mishing population. The reasons cited by teachers and parents were differences in language of instruction and fear of security. This finding demonstrates trends of internal exclusion within the already excluded population.

**Gender disparities:** Table 10 indicates that there is lesser percentage of girls attending schools compared to the percentage of boys attending schools in all of the chaporis. However, due to the small sample size and asymmetrical composition of sexes in the sample size of children, the data is super sensitive and hence it might not be adequate to form any conclusive analysis.

**Table 10: Chapori Education Profile**

Percentage	Charikholia & Chokia	Aichung & Dodhia
Children in school (age 6 to 17)	71.05	87.75
Children out of school(drop outs and never attended)	28.94	12.24
Drop outs	14.47	6.12
Never attended	14.47	6.12
No. of non-traditional children in school (6 to 17 yrs)	77.77	72.09
Boys in school	80.64	92.85
Girls in school	64.44	80.95

<sup>38</sup> RCC refers to Reinforced cement concrete

<sup>39</sup> Even though the school building is RCC classes are taken in a semi pucca structure since the building is used by police personnel as accommodation because of the security concerns there.

### **Role of the community**

**Perception of parents:** The parents were mostly dissatisfied with the functioning of the schools in the chaporis. Majority of the parents keep track of the school activities and is aware of the lack of teachers and the resultant effect in the quality of education of their wards. But they feel incompetent to affect the system and gratify themselves with the little education which their children receive. But they recognized the need of educated individuals for the development of the village in whole. One of the parents commented, “In today’s world, education is essential. Even a farmer becomes a better farmer with more education.” This was also reiterated by the fact that many of the children in the chaporis were sent to the mainland or other chaporis which provided further education. This finding was contradictory to the view of officials, service deliverers and teachers of the schools as they regarded that there is definite lack of motivation from the side of parents.<sup>40</sup> However, majority of them were unaware of the existence of institutional support of School Management Committees and Village Education Committees for improving education which involved community participation. The acceptance of teachers by the community as one among them is also critical for increasing the schooling participation in these areas which is also agreeable with the policy mandate for selection of teachers for chapori schools. But this becomes increasingly difficult as there is hardly any number of qualified individuals from the community itself who are eligible to work as an Anganwadi worker or school teacher and hence the vicious circle of lack of quality education in the *chaporis* continues. The same applies for the school management committees formed in the chaporis. As the teachers and parents point out during FGD’s, they exist for namesake and do not function at all. The Lahowal block office (BMC<sup>41</sup>, SSA, Dibrugarh) showed the records of the school building grant allotted for the chaporis schools being surrendered as the school management committee decided that the amount is not going to suffice for any improvisation of the school.

### **Perspectives from policy level administrators: Issues and concerns**

*“Government seems to have no interest in expanding infrastructure for chaporis government schools, both in terms of human resources as well as tangibles. Unless there*

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<sup>40</sup> Project Proposal on *Upscaling school education with a focus on out of school children in the river islands of Brahmaputra in Dibrugarh district of Assam* (CNES) implies a lack of community demand for education. Semi structured interviews with officials and teachers also expounded this conclusion

<sup>41</sup> BMC refers to Block Management Committee

*is infrastructure available even best laid policy plans won't work well, let alone SSA".* This statement holds the summary of sentiments held by majority of the mid level administrators of education department. The officials identified **connectivity and infrastructure** as the biggest concerns in the chaporis which leads to uneven distribution of services thereby excluding the children from chaporis from the rest of the population. One of the SSA District level officials observed that in the mainland of Dibrugarh, illiteracy is a curtailed problem while as in the tea garden and chaporis population of Dibrugarh district suffers greatly from the throes of illiteracy. The physical isolation of marginalized groups makes the provision of infrastructure a priority if they are to benefit from the intended policies and programmes. It was illustrated by the officials by the sample of AWC's initiated in the chaporis. Out of the 127 AWC's which was started in Dibrugarh only 2 were in the chaporis. Even those were going to be discontinued because of lack of transportation facility to the workers as well as lack of qualified people to work in there. There were no new schools which were allotted for the chaporis since 1991 despite the clear demand and need of the chaporis inhabitants. The officials were also conscious of the fact that the grant money was the same for the mainland schools as well as chapori schools which in itself are a form of exclusion as the infrastructure development in chaporis need a better **budget allocation** and this might be one of the reasons of inadequate use of school grants currently. Even **monitoring** of teachers and training becomes a huge hurdle as the travel allowance for the officials are not enough to travel to and fro from the chaporis and conduct adequate evaluation. The officials also found the need of increasing **incentives** for the chapori children to attend AWC's and schools. But even the existing targeted programmes have generally served as a means of compensating for government weakness in delivering on universal services rather than as a means of addressing exclusion and hence the implementation of new schemes and programs has to be dealt delicately. There was unanimous consensus that capacity for community participation should be built by actively encouraging community members to engage in decision making and development projects at the local level. An SSA, Dibrugarh official opined, *"Most of the students in chapori schools are first generation learners. The lack of awareness among parents on the quality of education and rights is a big hindrance. There is no ground work done. We have to start from ground zero and community participation is the first measure"*. The key element of collective responsibility and participation will definitely offer extensive possibilities for reformed service delivery.

## **Bridging divides: Including the Excluded**

### **Akha Boat – Qualitative Data**

#### *Availability, Accessibility and Quality of Service*<sup>42</sup>

According to the response that the 72 households gave, each one has heard of the Akha boat and knows what services it offers; 92% of the household's use the service; and 78% said that they typically know about an upcoming health camp with at least one day advance notice. Additionally, close to 80% of respondents said that the Akha boat comes to their village at least once per month, sometimes more. Therefore, the health services provided by the boat appear to be on a regular basis, and the communities know when and how to access them when needed although about half of respondents said that the boat has canceled health camps at least once during the past year. When individually asked results about specific changes to boat service timing or frequency were compiled, there were not any remarkably alarming themes. They generally found the availability and accessibility of Akha services to be meeting their needs and expectations. However, their opinion of the quality of service received appears to be biased as 70% of respondents said that people on the mainland have access to higher quality vaccines. In addition, villagers expressed a preference toward medicines that had been purchased were of higher quality than those given free of charge by the Akha boat despite the two medicines being identical. The prevalence of this belief was not examined beyond personal anecdotes, thus no conclusions can be drawn. However, the team observed that the storage mechanisms available in the boat were not in lieu with the standards that should be observed in storing medicines due to lack of space and refrigeration facilities. Lastly, 88% reported that health camps were conveniently located. Additionally, villagers told us that received medical attention whenever they went to the boat for treatment and were rarely denied. Times when mothers were denied physician visitation due to missing the health camp and appearing at the Akha boat around the time of departure were observed.

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<sup>42</sup> Upcoming health camp information is disseminated by a community worker (CW) who is part of C-NES. The CWs use cell phones and word-of-mouth means to alert villagers that the boat would be coming as well as the health camp location. Additionally, they work in cooperation with ASHAs (Accredited Social Health Activist) to dissemination intervention-related information. Both the CWs and ASHAs were found to be well-known and high respected in their communities.

As a relatively new programme, *Akha* boats impact on education still remains in its infancy. The implementation has been carried out since mid February 2008. Eventhough it's too brief a period to examine the intervention efficacy it's nevertheless imperative to understand the progress of the initiatives undertaken. Preliminary yet most significant part of the intervention approach was the indicative baseline survey which was conducted in the islands. Despite the fact that it was not a comprehensive and precise survey the investigation assessed the existing educational status of the chaporis and constructed a pool of data which was non existent earlier. This had greatly helped in envisaging future interventions. Community level awareness is built up with the help of existing trust base from the health intervention which has enabled the formation of bridge schools and feeder schools in the chaporis. There are also health camps which are conducted for the children from the schools along with the regular health camps conducted by Akha. Reading enhancement program and teacher training initiatives are implemented simultaneously

A district education official commented that the Akha intervention is laudable as it will be complementing the government service delivery mechanism and especially attempting to eliminate the lacunae and set an example which can be replicated in the chaporis in the future. While the recent discourse on education reform in India has widened its scope both in quantitative and qualitative terms, the chapori children still face the additional obstructions in receiving education. This paradoxical situation emphasizes the importance of community oriented child centred approach which is the characteristic feature of the ongoing education services. The intervention initiated by Akha is an interesting experiment with government collaboration which can and should open up novel avenues for provision of education in the chaporis

## **Recommendations**

### **Service Delivery**

#### **IEC/BCC**

The expansion of the scope of IEC and BCC campaigns is one of the most efficient ways to ensure a sustained impact of the interventions in progress. After understanding the existing gaps in the implementation and approach of Akha's BCC campaign the study would recommend to increase the rigor and intensity of the IEC and BCC campaigns

envisaged by Akha. We propose to integrate visual demonstrations culturally appropriate and easily understandable documentaries as a part of the process. The campaigns should be for villagers as a whole at the same time targeting particular groups the following core areas:

- a. **Immunizations** – building awareness among villagers on the significance of vaccines and which diseases are the children getting immunized against. Ensuring adoption of a complete cradle of care practices for newborns
- b. **Sanitation** – importance and rationale behind hygiene practices, integrating hygiene practices as a life style habit
- c. **Maternal health** – importance and rationale behind correct breastfeeding practices, IFA, TT shots and mother's prenatal care practices
- d. **Child health** – strengthening the understanding of local food patterns thereby identifying best nutritional practices and educating the villagers about them, best coping strategies against common diseases found in children
- e. **General health seeking behavior** – misconceptions regarding general health seeking behavior should be assessed and addressed by simple advocacy campaigns on the *chaporis*
- f. **Family planning practices**-Continued family planning campaigns also including appropriate ages for first pregnancy and appropriate time between births.

### **Capacity building for better delivery of Education services**

There is a highly recognized need for strengthening resources and initiating capacity building measures for guaranteed delivery of quality and sustained education services. The following are some of the areas where immediate attention is required

- a. Scholarships to be introduced for students who want to pursue higher education
- b. Spreading awareness on government policies and programmes intended to help students from excluded groups eg: Residential bridge schools, feeder and bridge schools initiated by CNES and SSA etc
- c. Active collaboration with SSA to expand the range of services and extend non formal education centres in the *chaporis*

- d. Networking and advocacy to determine and access best practices in the field of education implemented in similar settings

### **Referral services**

The time of floods drastically increase the vulnerability of the *chaponi* population and hence it is imperative to have referral services with diversified functions for reaching them in times of need. Developing an accessible network of community based primary and referral level services becomes a necessity.

- a. Address need for timely outreach for healthcare during emergency situations
- b. Provide service/technology for rapid transport
- c. Incorporating efficient mechanisms for the community to notify community workers regarding emergency health situations

### **Quality of services**

We have identified several bottlenecks in functional delivery mechanism of services of the intervention:

- a. Incorporating efficient storage mechanisms for medicines in the boat
- b. Develop a check list of the necessary materials including medications for the health camps

## **Sustainability and Accountability**

### **Community partnership**

Empowering communities and households to participate in health care and nutrition of mothers, newborns and children is a logical way of enhancing of the provision of care especially in communities where basic primary health care and environmental services are lacking (REFERENCE The State of the World's Children 2008)

- a. Fostering cohesive and inclusive community participation through involvement of community or social associations like temple committees, *Panchayat*, Self-help groups, mothers' groups
- b. Encourage sustainable behavior change through discussion groups of women, mothers and children to accelerate dissemination of knowledge on right nutrition patterns and health seeking behaviour

- c. Involving ASHA's in establishing and ensuring the smooth functioning of community based initiatives in the *chaporis*
- d. Training support and stringent supervision of locally available resources by training traditional birth attendants and RMP's who has to be screened and trained adequately
- e. Establishing an effective feedback mechanism through which opinions of *chapori* inhabitants regarding service delivery can be collected regularly
- f. Establish proper communication channels for ensuring smooth functioning of an objective and fool proof feedback mechanism
- g. Strengthening the role of community workers as well as ASHA's to address apprehensions of the chapori inhabitants and to ascertain the role functions
- h. Introducing registration cards for families for health check ups with a nominal fee to collaborate shared responsibility from the community as well

### **Social Exclusion/Inclusion**

Mitigate the vulnerability of the *chapori* populations by provision of preempted flood relief assistance

- a. Efficient risk evaluation measures and disaster preparedness in the local context to be undertaken by the District Administration
- b. Birth registration: integration of the immunization campaigns as a strategy for ensuring birth registration in the *chaporis*

### **Prerequisites for Program up-scaling**

Efforts to strengthen the intervention approach should inevitably include scale up of activities and focus on upgradation of quality of services upgrading

- a. Collaborate/review/assess other programmatic successes and failures around India and world prior to project release in chaporis.
- b. Formulating benchmarks and outcome indicators for regular evaluation and sustainable development of the intervention.
- c. Demonstrating visible and tangible results within a specific time-frame
- d. Expanding the data, research and evidence base of the specific intervention approach in the *chaporis*

## Conclusions

- Identify lessons learned
- List the recommendations for different kinds of users in priority order.

(quote about acting today and that this is just the beginning.)

This case study is merely one snapshot among the infinite number of portrayals that could be made about the lives of the *chaponi* peoples and their needs. The people who call those islands home are just beginning to be reached with services that many of us take for granted or, at least, have come to expect to be available if even at a price. Moreover, while the study has its obvious limitations it serves to illuminate the challenges faced by these people. It must also be noted that, as with any group of people, there are certain social problems wherein responsibility for action lies within the reach of the people; therefore, those people should be expected to act on their own volition to remedy them. What was seen, however, was a myriad of issues over which the islanders have very little if any control. Therefore, the case study serves not as a tool to assess the impact of any one group among the actors who play an instrumental role in improving the riverine populations' lives. Rather, it simply demonstrates that an enormous amount of aid is needed and the current level of service is remarkable and worthy of praise.

The team's findings suggest that the last four years of service delivery have dramatically improved thousands of lives and afforded numerous children a brighter future. For example, immunization rate increases between younger and older groups of children indirectly indicate a significant improvement. Moreover, the first step to implementing an intervention such as this was recognizing obstacles and taking decisive action to positively change the situation. There is irrefutable evidence showing that the Akha boat and subsequent PPP between C-NES, NRHM, and UNICEF have done just that. An example of such is the fact that in order to improve the health status of *adivasi* and migrant populations, the gap between what we believe to be necessary beliefs and essential practices and what they accept as necessary and essential must be bridged. This was accomplished when their aversion to immunization was elucidated and an avenue of communication found through education by which their misconceptions were dissolved. In addition, success has been achieved through establishing liaisons between the *chaponi* inhabitants and what they see as the outside world via community workers and integration

of ASHA's. These individuals act as catalysts for change and will undoubtedly ensure continued success if the scope of their role is strengthened and maintained.

Change has also happened at a rapid pace over the past four years as new boats like the Shahnaz have come online and the program is now operating in five districts in Assam. As the PPP begins to upscale the intervention to reach lakhs and potentially millions, the amount of triumphs and tribulations will grow. The team found examples of this in the heterogeneous populations in the Dibrugarh district alone. Different groups have different expectations and needs, and that will likely be one of the greatest challenges this model PPP will face as it is used as a national model.

The team also found that a general awareness about the needs of the *chapori* inhabitants has permeated the thoughts and writings of those in positions of power. Collectively, the Joint Director of NRHM, the director of C-NES, the doctors from AMC, and the program officers from UNICEF are in agreement about what needs to be done. More impressively, each particular group seems to accept and understand each other's strengths and weaknesses insofar as they create a synergistic approach to tackling new obstacles and additional service delivery by asking for input and feedback from one another.

The challenge ahead for the PPP will not be financial or institutional as funds were reported to be close to unlimited and government interest as well; it will be combating social exclusion in ways that promote social integration of villagers through measures beyond mobile service delivery. Social integration must be manifested through an eventual establishment of dedicated services accessible at all times. While it was found that hundreds of people attend health camps and many more are aware of them, the team observed a paucity of feedback mechanisms by which the intervention coordinators could ascertain service gaps or additional community needs in order to continually improve the services. It was found that the PPP is taking the necessary steps to incorporate these mechanisms.

The PPP is also taking steps to provide their own feedback to the community regarding BCC and IEC campaigns. The team confirmed a lack of knowledge and behaviors surrounding general hygiene and sanitation practices, which will be addressed by the aforementioned campaigns. Another benefit of the campaigns will be to increase

community awareness about rights and empower them to take action. This would be a positive step towards reducing existential exclusion and creating an identifiable group-based identity that can engender a sense of rightful entitlement and belonging as well as appropriate representation in local government.

During the course of the study social exclusion was examined through the lens of the MDGs. The team found that the intervention is working towards the second, fourth, fifth, and six goals. In May of 2008, the intervention began working toward achieving the second goal of universal education in the *chaporis*. Education access lags behind the health service delivery, but action has been taken through implementation of bridge courses and feeder schools. Reduction of child mortality is one of the program's top priorities through the immunization campaign; however, a major component of child mortality is malnutrition, which was not observed as being a currently functioning aspect of the boat clinics. Maternal health improvement, the fifth MDG, was being accomplished through health checkups, IFA tablet distribution, and TT vaccinations. We could not make conclusions about the effect this has had on maternal health improvement, but it is certain more pregnant women and new mothers are receiving care than they did before. Goal six of the MDGs is being tackled through distribution of treated bed nets, malaria testing, and anti-malaria medication. In order to accomplish the MDG' goals and establish social parity, active measures must be added to the initiative's goals to assist with poverty reduction. Only then can villagers become independent and empowered social actors in all social matters.

With all that was observed in terms of lack of public services, access to variation in occupations, etc., leads us to conclude that those who live on the *chaporis* should not be discriminated against through an assumption that geographic location is a fact of life resulting from the choice to live in difficult to access areas. Rather, a shift in perspective is necessary that views locational disadvantages as challenges that must be overcome. In addition, the fact that the *chaporis* are temporary has been used as a reason against building infrastructure as opposed to a reason to find solutions. Lastly, villagers continually face the possibility of displacement as the islands become officially categorized as national parks or are destroyed by flooding and erosion. Sadly, there is little being done to ensure programs exist and operate efficiently to ameliorate the effects of

displacement aside from poorly delivered relief efforts often provided too late and not to the right people. Chaporis not officially recognized on maps, census, etc. Birth reg.

Therefore, the team concludes that the Akha boat and its counterparts are an exceptional intervention that has reduced geographic exclusion by bringing otherwise unattainable health and education services to the villagers on the *chaporis*. We also conclude that in order to properly address existential exclusion the following must be done: LIST. In conclusion, the Akha boat intervention has done what none before have by providing regular health and education services to the islands of the Brahmaputra. It aims to provide services to many more, and this is just the beginning of a wonderful story of success. However, success must be measured in relative terms within the proper context and on the right scale, for one could conclude that the intervention has missed the boat if they were to expect this intervention to have accomplished each necessary facet of social inclusion within such a short period of time.

**Lack of specific tailor made policies for chaporis** makes the implementation of the existent policies difficult. The perspective adopted for educational development in chaporis fails to adequately address specific disadvantages characterizing the population and does not operate as a culturally sensitive intervention. Their sparse population and sporadic residential patterns due to inclement weather conditions calls for a focused inclusive education system tailor made for them. The challenge is to be able to address the needs for access and quality education for each child. This will require strong rights orientation within any program or policy developed.

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## Annexures

