

Chapter I

A Report on Kaziranga National Park Study Area

This special report dwelt upon the actual state of affairs relating to the living conditions of the rural poor and the factors responsible for their behavioural change and relevant issues.

Study Team:

Manijyoti Baruah(Planning & Development Department, Government of Assam)

Anuradha Saikia(Economics Department, Benares Hindu University)

Bhaswati Kalita (School of Social Work, Delhi University)

KAZIRANGA: Basic Abstract

Kaziranga is located between latitudes 26°30' N and 26°45' N, and longitudes 93°08' E to 93°36' E within two districts of Assam viz. the Kaliabor subdivision of Nagaon district and the Bokakhat subdivision of Golaghat district in India.

It is the refuge for the world's largest population of Great One-horned Rhinoceros. Kaziranga has the highest density of tigers in the World and is declared a Tiger Reserve in 2006. The park has many Elephants, Water Buffalos and Swamp Deers. It is recognized as an Important Bird Area by Birdlife International for conservation of avifaunal species. The park has achieved notable progress in wildlife conservation despite several constraints.

Its landscape dotted with large and small water bodies of dense tropical moist broadleaf forests characterized by vast stretches of tall elephant grasses, marshland is interspersed by four rivers viz. Brahmaputra, Dipholu, Mora Dipholu and Mori Dhansiri and

A Chronology of events leading to its gaining status of a national park and a world heritage site may be summarized in the following points.

The park formally became a Reserve Forest in 1908, a game sanctuary in 1916, and it was closed officially for shooting in 1926.

- Kaziranga was thrown open to visitors in 1938.
- After the independence of India, Kaziranga was declared a Wildlife Sanctuary in 1950.
- In 1974 it was designated a National Park, the first national park in the state of Assam.
- UNESCO declared Kaziranga a **World Heritage Site in 1985**.



The landscape formed by complex of sprawling grasslands, numerous water bodies and woodlands provide an ideal mix of habitats for a variety of flora and fauna. It is one of the largest legally protected areas under the Burma Monsoon Biogeographical province in India that supports the wide range of flora from microscopic aquatic plants to lofty moist deciduous trees and fauna ranging from the soil invertebrates to mega fauna such as the Rhino and the elephant. With adequate protection and in-situ conservation efforts that date back to almost a century, the grasslands and the mega fauna have been able to

sustain in such a manner that one of the largest assemblages of these can be seen today in the wild. Prominent among them are the charismatic 'BIG FIVE'-**The Great Indian One horned Rhinoceros (*Rhinoceros unicornis*) The Asiatic Wild Buffalo (*Bubalus bubalis*) The Asiatic Elephant (*Elephas maximus*), The Swamp deer, (*Cervus duvauvceli ranjitsinghi*),The Tiger (*Panthera tigris*).**

Species	Count
Greater One horned Rhinoceros	2290
Royal Bengal Tiger	106
Asian Elephant	1165
Asiatic Wild Buffalo	1937
Eastern Swamp Deer	1168

The park contains significant breeding populations of 35 mammalian species, out of which 15 are threatened mammals according to the IUCN Red List. It has 60 species of reptiles, 24 species of amphibians, 42 species of fishes, 440 species of plants and 491 species of butterflies. The area also falls at the junction of the Australasia and Indo-Asian flyway thus providing an important migrating, breeding and nesting site for over 550 species of Avifauna and is considered a birding paradise.. Significant diversity in Herpetofauna and other lesser-known life forms thus provide considerable Conservation, Research, Education and Recreation values.

There are three main types of vegetation: alluvial inundated grasslands, tropical wet evergreen forests and tropical semi ever green forests. Grasslands predominate the west with tall elephant grasses on the higher ground and short grasses on the lower ground surrounding the bheels.They have been maintained by annual flooding and burning over thousands of years.Tropical semi evergreen forests occur near Baguri , Haldibari , Bimali.The park carries a significant conservation value as it is the largest undisturbed and representative area of the Brahmaputra valley flood plain grassland and forest with associated large herbivores, avifauna and wetland values (including turtles, dolphins, etc)



The present focal management targets of KNP are listed below in the form of a table.

Table 1

Value Component	Focal Management Targets	World Heritage Values	Addition Attributes	Information on Status
Biodiversity Values	One-horned Indian Rhinoceros	World's largest population	A 'keystone' species of the wet grassland habitat in mainly the Brahmaputra river plains.	Very Good
	Wild Buffalo, Eastern Swamp Deer	World's largest population	Two obligate species mainly confined to the	Very Good
	Asian Elephant,	Large population	Approximately 30% of north east Indian population confined to the site	Very Good
	Tiger	Highest density in any protected area	The site is under consideration to be given at tiger site	Very Good
	Raptors, Turtles,	High Density	Significant breeding habitat of 13 species of turtle and several species of Raptors	Good
	Resident and migratory waterfowl	High Density	Already identified as IBA site	Good
	River floodplains and wetlands	Large diversity of aquatic fauna, Important Bird Area (IBA), important waterfowl flyway and wintering ground	Breeding habitat for a large number of species and Gangetic river Dolphins (30% of the Indian river dolphin population)	Good
Other Natural Values	Mosaic of tall and short grassland habitat	Unique diversity of wetlands (beels), grasslands and forests	Highly dynamic river system	Good
Cultural and Social Values	Tourism	A natural heritage site of immense diversity and close to a proposed cultural heritage site – Majuli.	Famous and popular wildlife tourism site not only for the region but nationally and globally.	Good
	Ethno botanical values	Rich diversity of medicinal and culinary plants with continued traditional use by local community from the surrounding landscape.	Genetic reservoir for economically important plants	Fair

*source : whc.unesco.org/document/6954

The park comprises of four ranges -- Central Kaziranga (Kohora), Western (Baguri), Eastern (Agoratuli), and Burhapahar. The most accessible, popular and tourist infested range is the Central one, at Kohora. There are no villages within the boundary of the park. However, the area outside the boundary of the park is very densely populated. There were 39 villages within a 10 kilometres (6 mi) radius of the park. A few new settlements have come up along the national highway adjacent to the park borders and for servicing the booming eco-tourism industry. The **fringe villages** of the park are spread across **Bagori i.e. Western Kaziranga to Agoratoli Range (Dhansirimukh)**. There are more than forty villages spread across the park under five GPs (Gaon Panchayats) which consist of both tribals and non tribal population. They fall common victims of poverty, scarcity of food, lack of income source and flash floods which destroy habitations as well as farm lands.

Background of the Project :

Socio-economic status (SES) is often measured as a combination of education, income and occupation. It is commonly conceptualized as the social standing or class of an individual or group. When viewed through a social class lens, privilege, power and control are emphasized socio economic status affects overall human functioning, including physical and mental health. Low socio economic status and its correlates, such as lower education, poverty and poor health, ultimately affect our society as a whole. Persons with disability have limited access to earn income and have increased medical expenses. Socio - Economic survey is an important part of education to know the status of the people of various society. The sole aim of this project is to transform the socio -economic condition of the people living in the rural areas. This project specifically aims at examining the socio economic sector of the families inhabiting the fringe villages of KNP. Poverty is considered a great influence on environmental degradation. Regional overgrazing leads to destruction of grazing lands, forests and soil. This puts pressure on the grazing space of the park. As people become poorer they destroy the resources faster. They tend to overuse the natural resources because they don't have anything to eat or any means of getting money except through natural resources. Moreover, rhino poaching for illegal rhino horn trade has been the main problem in protected areas of Assam due to high value of the horn in Asian traditional medicine market. The poor people of these villages easily fall in the network trap of poachers in lure of money. If something can be done to improve the poor and deplorable living conditions of these people, it can indirectly have a positive impact on the health of the park and encourage more tourists. With tourism gaining more importance over the years, we can see more revenue for the state and overall economic development of the people at KNP.

As already mentioned, the fringe villages of the park spreads across Bagori in the western Kaziranga to Bokakhat (Dhansirimukh) in the east. There are more than forty villages spread across the park under five GPs (Gaon Panchayats) which consist of both tribals and non tribals. They fall common victims of poverty, scarcity of food, lack of adequate income source perenielly and flash floods which destroy habitations as well as farms. We have focused our study on the villages of Sildubi, Kohora No 1 , Kohora no 2. The basic objective is to analyse the living conditions of these inhabitants of the villages and to come out with a way of self sustaining them by promotion of eco friendly activities and selective landscaping through community participation. This can be done by initiating formation of Self Help Groups (SHG's) and respective training, capacity and skill building by creation of

a resource centre with the help of State Institute of Rural Development (SIRD) , Govt. of Assam which can take up training programmes and techniques of farm mechanisation, vermicomposting ,poultry , goatry and duck rearing by the households. The overall emphasis lies on strengthening the current tourism potential of the Naional Park which can benefit the entire region and uplift the standard of living of the people at these villages. This survey report is a modest attempt to develop an awareness and insight to Socio –Economic study of the various social, cultural and economic aspects of the population residing at the fringe villages of Kaziranga..and it addresses the key Challenges of unemployment, illiteracy among the youth , poor health and sanitation conditions.

Data Collection :

The study is based on primary sources of data. For the collection and analysis of data we accorded priority on socio economic conditions based on livelihood options and practices, status of health and sanitation, women and youth empowerment as our key variables. Out of these three areas socio economic condition of the community have been studied taking into consideration the local facors affecting the same in its entirety. A convenient sample survey was conducted among 120 families from 5 villages inhabited by mostly poor families. The focus area had been the central range in and around Kohora which covered three villages viz .**Sildubi, Kohora 2, Bamungaon, Agoratoli and Bohikhuwa**. Out of the 3 (three) major ranges at KNP viz. western, central and eastern, we have observed that **Kohora in the central range** is receiving the maximum number of tourists. In order to study the impact of the above key variables we interviewed about 120 individuals from each of the families of the villages of KNP. The study group data was directly collected from the individuals/families. The tools of data collection that we used were questionnaires schedules and through focussed group discussions. The basic aim was to examine how the poor living conditions of the people can affect the health of the park. As the poor people become more dependent on natural resources which can have direct impact on tourism and other related activities at the park. Thus this whole aspect of socio economic conditions and impact on the environment forms a chain are are directly and indirectly related to each other. Their well being can benefit the national park, boost tourism than before which can serve as a increased revenue source and can thus make the people well off than before(for those engaged in the tourism sector).

The table below summaries how our survey addresses the question of the life and livelihood among households, individuals and at the community level.

Households	Individuals	Links to major Government Schemes
<p>To have at least a minimum standard of living, a household must have access to some of the following-</p> <ul style="list-style-type: none"> • House, fuel, food: • Household possessions. 	<p>Apart from productive assets, livelihoods also depend on work/employment that individual are engaged in.</p> <ul style="list-style-type: none"> • Primary type of work; • Estimated number of days of work in primary activity ; • Migration outside the village for work 	<p>Major programmes of the central government related to food security and employment guarantee are tracked here.</p> <p>The link of households to the two major social protection mechanisms is assessed.</p> <ul style="list-style-type: none"> • PDS/Ration shop. • MGNREGS.

Findings:

This section describes the main findings of the domain called life and livelihoods based on the core indicators that had been selected.

A. ife	B. Livelihood	C. Links to schemes
At household level <ul style="list-style-type: none"> • Type of house • Cooking fuel • Land ownership • Livestock • Household possessions 	At household level <ul style="list-style-type: none"> • Type of house • Primary work activity • Financial inclusion of women • PDS • MGNREGS • Bank Account 	At facility level <ul style="list-style-type: none"> • PDS/ration shop • MGNREGS work site

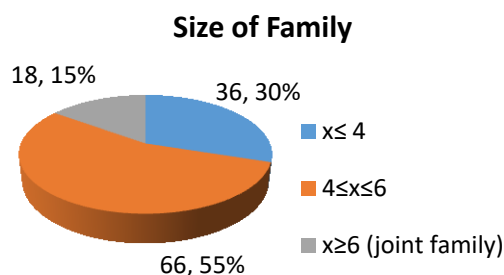
Empirical results and analysis

The survey covered various aspects such as the **family background and education , socio economic living conditions and women empowerment**. We also enquired on their role of conservation of the National Park by the various village communities.

Family Background/ Education : Members in each family :

Let x define the number of members in each family.

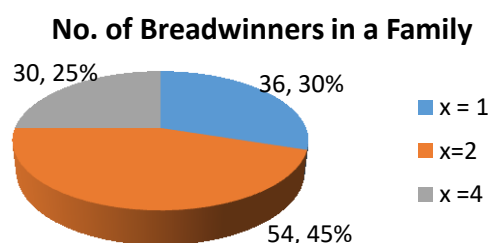
Category (in Nos.)	Respondents
$x \leq 4$	36
$4 \leq x \leq 6$	66
$x \geq 6$ (joint family)	18



Majority of the population have four to six members in the family. Some of the families have at most four members and very few come under joint families. So a large family norm does not seem to be a common problem. Joint families are seen as different houses in the same compound.

Bread Winners of the family: Let x define the number of breadwinners in each family

No. of breadwinners	No. of respondents
$x = 1$	36
$x = 2$	54
$x = 4$	30
Grand total	120



Majority of the families have both the husband and wife as bread winners either being engaged as daily wage earners, engaged as cooks/grade IV employee in nearby schools or in some sort of business (grocery shops, selling handicraft/handloom and wood products in the market).

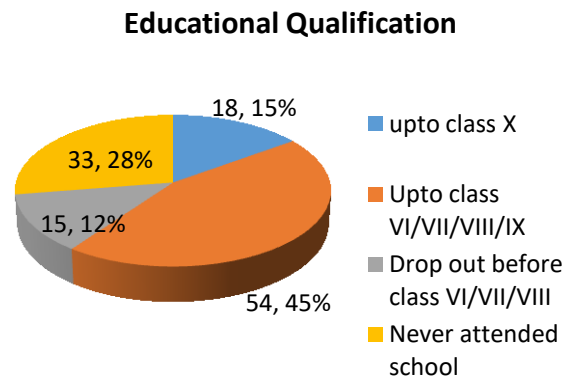
Some families only have the man of the house working to fulfil family’s daily needs and sustain his family. He either may be engaged as an agricultural labour engaged, or as a tour guide or might own a business. The least percentage might have four members as earners (both in case of joint families and single family).

How many children in each family and how many of them go to school?

Most of the families have three- four children(both boys and girls) and all of them attend the nearby government schools situated across the locality. The younger ones also attend the Anganwadi schools nearby as told by the respondents. Some families even provide their children with tutorial classes after school. So while some lay high emphasis on educating their children, we have also come across some families with children who are not willing to attend schools or some may attend Anganwadi schools just for the free meal provided.

Educational qualification of the Respondent:

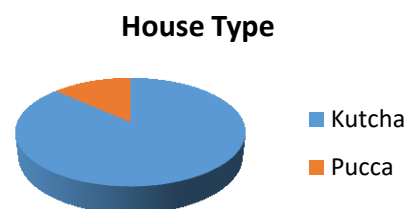
Educational Qualification	Total No of Respondents
upto class X	18
Upto class VI/VII/VIII	54
Drop out before Class VI	15
Never attended school	33
Grand Total	120



In our survey we mostly interviewed women of the households and obtained the above data. Majority seemed to have attended junior school till standard VI. Some of them have attended till class Xth. and are matriculate. About 40% never attended school.

Socio-Economic Living Condition : House Type

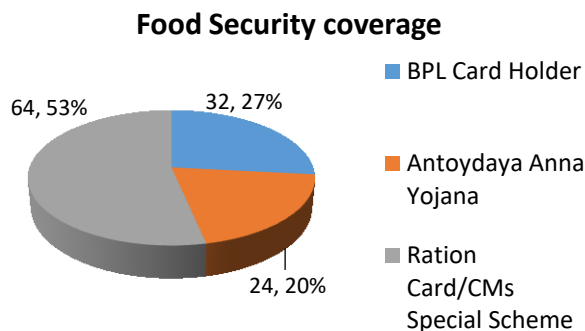
Category	Respondents
Kutchha	104
Pucca	16
Grand Total	120



We see that almost 95 percent of the total population surveyed live in **Kutchha houses** where as only 5 percent live in **Pucca houses**. We can thus opine from the above that a very few people are well off (families who own agricultural farms, those who are engaged as tour guides,/ employees in the hotels/lodges nearby) to be sheltered in such concrete buildings whereas majority who do not earn daily /have a poor income source , dwell in thatched roof shelters.

BPL Card Holder :

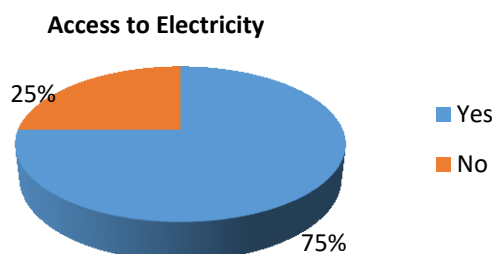
Card Type	Household
BPL Card Holder	32
Antoydaya Anna Yojana	24
Ration Card/CMs Special Scheme	64
Grand Total	120



The majority of the population (about 50 %) seemed to have not received any BPL card and may be are not even aware of it. Next comes the section of people (25%) who have applied but they didn't receive. They claim negligence on the part of the government not to address their grievances. An equal share (25%) seemed to have applied and received the BPL cards.

Access to Electricity:

Electricity Connection	Families
Yes	90
No	30
Total	120



Majority seemed to have access to electricity given under government scheme **Rajiv Gandhi Grameen Viduyutikaran Yojana (RGGVY)* a central sector scheme**. Its major goals were :

- Provision of access to electricity to all households by year 2012.
- Quality and reliable power supply at reasonable rates.
- Minimum lifeline consumption of 1 unit per household per day as a merit good by year 2012.

Since Kohora falls under district of Golaghat which covers this scheme the villages are benefitted. The policy also envisages that for the purpose of rural electrification, a village would mean a census village. Accordingly, the plan is prepared based on available data of 2001 census and only the villages/habitations having more than 100 households have been included. The plan required update after publishing of the 2011 census data. Further, there is frequent migration among the population in Assam because of river erosion, jhum cultivation etc. As such the RE also needs updation periodically.

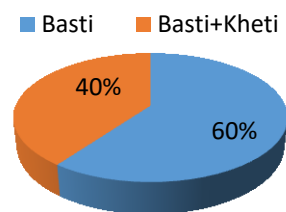
But some of the of poor families have not yet received any assistance and have to light up their homes either with candles or with kerosene lamps at dusk.

****RGGVY scheme has since been replaced by a new scheme 'Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) by the Government of India in 2015 and is designed to provide continuous power supply to rural India***

Type of Land:

Category	Total No of Respondents
Basti	72
Basti+Kheti	48
Grand Total	120

Land Ownership

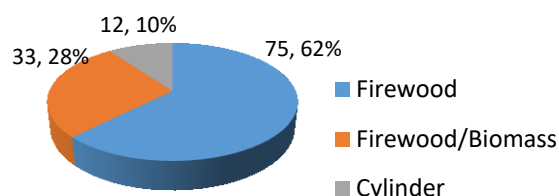


It is observed maximum people own both kheti and basti each land approximately covering 3- 4 bighas of land.. 40% of them have only basti land and put up farms on land owned by others. .But even then there is less agricultural production due to seasonal floods and destruction of farm lands by wild animals from the park such as elephant , deer and tiger.

Fuel Used :

Type of Fuel	Family
Firewood	75
Firewood/Biomass	33
Cylinder	12
Grand Total	120

Fuel Used for Cooking



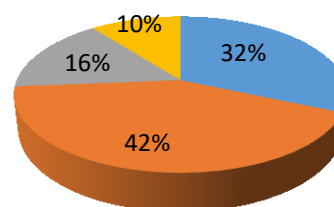
Majority of the people go for firewood which is abundantly available owing to the presence of vegetation and trees. The households also go for gobar gas using dried dung cakes as fuel. Only 10 % who are well off than others have access to LPG cylinders.

Asset Ownership:

Combinations	Total No of Respondents
TV, Mobile phone and Bicycle	36
Mobile Phone and Bicycle	48
Motor Cycle/Scooter, Jeep, TV and Mobile phone	18
Only Mobile phone	12
None	6
Grand Total	120

Asset Ownership : percentage of Respondents

- 1. Tv, mobile phone and cycle
- 2. Mobile Phone and cycle
- 3. Cycle , Jeep , Tv and mobile phone
- 4. Only Mobile phone

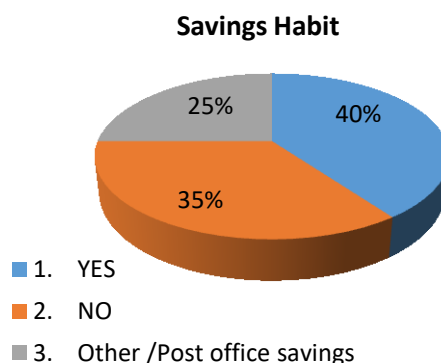


Here we have a comparatively mixed percentage of people owning different assets such as mobile phone, cycle, tv, jeep(for tourists safari) . Around 42% of the total no of people surveyed own mobile phone and Bicycle Next slot of 32% own TV, mobile phone , and Bicycle. 16% own Motorcycle/Scooter, jeep, TV and mobile phone and the remaining 10% own only a mobile phone. It is observed that mobile phone is a common asset found in

almost every household as mobile handsets are cheaply available and is the most commonly used method of telecommunication today.

How many have an individual bank account ?

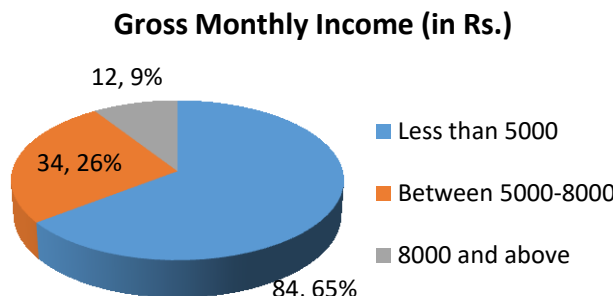
Bank/Post Office savings account	Respondents
Yes	48
No	42
Other /Post office savings	30
Grand total	120



It is observed here that majority have a bank account usually in a nearby Assam Gramin Bikash Bank whereby they save from the money earned through self help groups .or their individual savings. Some of them have post office savings. While others earn but no money can be saved which can occur due to various reasons such as only one individual earner in the family , a large family , low agricultural productivity for those who depend on only their farmlands .Even though a conscious saving habit of the people are seen owing to the inflated price scenario and awareness towards educating the children of the family and giving them access to better English medium schools.

Gross Monthly Income:

Income	No of Respondents
Less than 5000	84
Between 5000-8000	34
8000 and above	12
Grand Total	120



Majority of the people (85%) , who happen to be the only breadwinners of the family and are engaged as daily wage workers earn less than 5000 a month. The people who happen to have their own farm lands and engage in agricultural activities, fall in the income slot of 5000-8000. The section of people who happen to have farm land with more than one family members engaged as employees at resorts/ hotels at Kaziranga or as tour guides earn 8000 and above. This category includes very few families having members working in lower category government/semi government jobs.

Are there instances of natural calamities in the area ?

Here we have a unanimous population going for flash floods consistent in the area specially during monsoons. They destroy life, property and even are a major reason for the poor economic condition. The last time major floods were seen during 2012.

What are the main reasons of economic backwardness in the area?

The main reasons of economic backwardness as acquired from the inhabitants of the villages themselves are :

- No proper infrastructure, the roads become muddy during the rainy season.
- No proper healthcare facilities provided by the government. There is only one dispensary nearby and one civil hospital at **Bokakhat** which is about 25 kms from **Kohora** (central range) where some of the fringe villages are located.
- Frequent destruction of life and property due to flash floods during monsoons.
- No source of income for most of the families during off season at Kaziranga National Park (from May to October every year).
- Shift from the traditional mode of occupation i.e agriculture to other modes of livelihood such as working in resorts , driving tourist gypsy cars ,etc which flourishes only during the season time (from November- April every year).

Health and sanitation

Health and sanitation is one of the important indexes to measure the socio- economic conditions of people. As someone said “The greatest wealth is Health”. So it is vital to keep track of the health of people as the working capacity of an individual depends upon the physical fitness of people. “Time and health are two precious assets that we don’t recognize and appreciate until they have been depleted.” ~Denis Waitley. Therefore this precious asset as described by Waitley must be taken care of properly.

From the survey conducted on socio economic conditions of the people living in the fringe villages of Kaziranga, we tried to look at a number of things for instance, facilities available such as hospitals, dispensaries, doctors, mobile dispensaries, the role of National Rural Health Mission, sanitation facilities etc. The nearest government hospital is located at Bokaghat which is nearly 15-20 km from Kaziranga’s fringe villages. Other than that there are government dispensaries which do not allow patients to stay at night. Doctors are available during day time along with ASHA (ASHA (Accredited Social Health Activist)) workers. Selected from the village itself and accountable to it, the ASHA workers are trained to work as an interface between the community and the public health system.

ASHA worker and the services rendered by her :

- ASHA must be primarily be a woman resident of the village preferably in the age group of 25 to 45 years. She can be either married/divorced or widowed, does not matter.
- She should be a literate woman with formal education at least up to class VIII.
- Capacity building of ASHA is being seen as a continuous process. They will have to undergo series of training episodes to acquire knowledge, skills and confidence for performing her spelled out roles.
- Their primary task is to promote universal immunization, referral and escort services for Reproductive and Child health (RCH). They also see to the construction of household toilets.

- ASHA workers will be a first port of call for any health related demands of deprived sections of the population, especially women and children, who find it difficult to access health services. They are expected to be a fountainhead of community participation in public health programmes.
- ASHAs are responsible for creating awareness on health and its social determinants and mobilize the community towards local health planning and increased utilization and accountability of the existing health services. (www.nrhm.org)

On interviewing the locals of Kaziranga it was confirmed that ASHA workers do visit the villages on every Wednesday and Saturday. They give priority to pregnant women and also give advice on prenatal and post natal care. The media expert of Bokaghat NRHM informed us that there are 5 sub centres of NRHM in the region which also covers our study area i.e. Kaziranga and its fringe villages. The sub centres are located at Kohora, Siljuri, Halodhibari, Dhansiri and Difolu. Local people call these sub centers as dispensaries. Each one of have doctor have particular timings to see patients and each of the sub centers have two ASHA workers who visits the villages under their area on alternate service days. They also take sessions on health issues, visit ill patients, pregnant women, and take blood samples etc.

Questions asked:

Which is the nearest hospital (distance from your place)?

Out of the 120 respondents surveyed, most of them (residing in the villages between bagori and Dhansirimukh) told that the nearest hospital for them is located at Bokakhat some 15 to 20 km from their places. There are dispensaries nearby which is 2 – 3 km far from their villages, but those dispensaries are not meant for major diseases and there is no facility of night stay and therefore patients are recommended to the Bokakhat civil hospital.

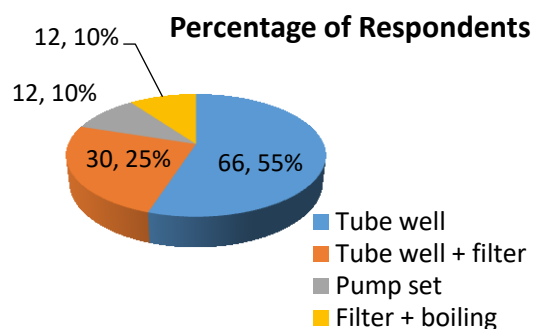
What are the annual diseases that people suffer from?

The annual diseases that the people of the area suffer are dysentery mostly after flood, pneumonia, cough, cold, skin diseases, measles and malaria. The survey conducted reveals that although people do not face death due to such diseases but it makes them weak as these diseases affects them every year.

Do you have access to safe drinking water?

The 120 respondents answered the following way:-

Water sources	Respondents
Tube well	66
Tube well + filter	30
Pump set	12
Filter + boiling	12
Total	120

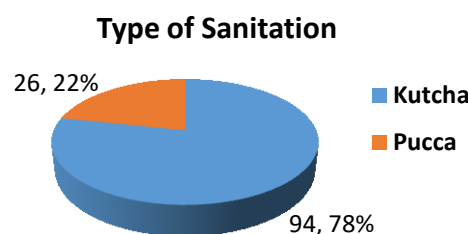


This data shows that more than half the population surveyed uses hand pump or tube well as their water sources while only 10% of the population surveyed are aware that boiling water is free from germs. Others drink water directly from tube well.

The next question asked was, what kind of sanitation facility do people avail?

The 20 respondents answered the following way:-

Type of sanitation	Respondents
Kutchha	94
Pucca	26
Total	120



The data above shows that 85 % of the total surveyed use kutchcha toilets while only 15% use pucca toilets. It is noteworthy to mention a portion of the 15% people who uses pucca toilets received plates for toilets from village panchayat under the scheme Nirmal Bharat.

The vision of this scheme is to:

- Completely eliminate the traditional habit of open defecation.
- Operationalising of systems for the safe management of solid and liquid waste at scale.
- Promoting the adoption of improved hygiene behaviours
- Addressing inequalities in access with special attention to vulnerable groups.
- Ensuring that providers have the capacity and resources to deliver services at such scale.
- Stimulating and enabling cooperation across public sector agencies concerned with rural development, health, environment and vulnerable sections.
- Working with business, academic and voluntary partners to achieve the goals of the Strategy (indiasanitatiportal.org).

Goals:

Nirmal Bharat has 3 goals:

Creation of Totally Sanitized Environments – By 2017: The end of open defecation and achievement of a clean environment where human faecal waste is safely contained and disposed.

Adoption of Improved Hygiene Practices – By 2020: All people in the rural areas, especially children and caregivers, practice safe hygiene practices during all times.

Safe Disposal of Solid and Liquid Waste – By 2022: Effective management of solid and liquid waste such that the village environment is kept clean at all times.(indiasanitationportal.org).

Besides the survey conducted, we also took an interview with the media expert of NRHM (National Rural Health Mission) and got to know about the role of NRHM in the vicinity of

Kaziranga. The NRHM was launched on 12th April 2005 to provide accessible, affordable and quality health care to the rural population, especially the vulnerable group.

The Mobile Medical Unit (MMU) is another feature of NRHM which needs to be mentioned. These MMUs were launched on November 11, 2007. It is also known as hospital on wheels. Equipped with all types of modern facilities, these MMUs help the travelling doctors and paramedical staff to provide preventive as well as curative health care at the doorstep of the rural people. MMUs operate through a decentralized approach under which the district health society prepares a work plan to decide the camp sites on monthly basis. The schedule is shared with the local health department, and the villagers are informed through Accredited Social Health Activists (ASHA) and NGOs. The medical team stays on the camp location for 4-5 hours, conducts the tests and provides medicines to the patients. All services are provided free of cost to people under the NRHM initiative. (www.oneworld.net)

The overall responsibility for the operationalization of MMUs rests with the Deputy Commissioner, who is the chairperson of the District Health Society. The District Health Society prepare monthly camp plan with higher priority to hilly and remote areas in the beginning of every month. The objective is to organize at least 20 – 25 camps each month, and visit the same location once in three months in large district and once every month in smaller district. During emergencies like Malaria and floods, the MMU Camp schedule get rescheduled as per need. Overall 22/25 camps are held in a month and the MMU stays in one location only for a day.

Every MMU provides the following services.

Curative services include referral of complicated cases, early detection of TB, Malaria, leprosy, kala azar and other locally endemic communicable diseases and non-communicable diseases such as hypertension, diabetes, and cataract.

Reproductive and child health related services include antenatal checkups, referral for complicated pregnancies, promotion of institutional delivery, postnatal checkups, running immunization clinics

Diagnostic facilities include regular blood testing, urine examination, smear tests, clinical detection of leprosy, TB and locally endemic diseases, and screening for different types of cancer.

Specialised facilities and services include X-ray, ECG, ultrasound tests, emergency services and care in times of epidemics, disasters, public health emergencies, accidents etc, and provision of IEC materials on health including personal hygiene, proper nutrition, use of tobacco, diseases, PNDT Act, STI, HIV/AIDS etc.

Though the launching of MMU is a noble idea however there are two major challenges in the operation. Firstly, there is absence of proper roads in remote areas, which makes the travel difficult, and to some extent impossible. Second, the poor road conditions break down the equipments and vehicle very frequently, increasing the maintenance cost of the operations.

It can be concluded that in comparison the earlier days, the situation of health and sanitation at Kaziranga has improved tremendously. The government schemes of providing plates for toilets under Nirmal Bharat project has helped in resisting a number of diseases which could have been caused through open defecation or use of kutchha toilets, yet still a majority of population use kutchha toilets which needs to be improved. Rainy season is the time for worrying as flood causes not only loss of livelihood but also causes a number of diseases such as dysentery, cough, cold, pneumonia and malaria. However with the fast and rapid action of the services of NRHM people get fast relief and as a result people and particularly are less prone to such diseases. Things will get much better if people are more aware of their health and stay aware of the number of government schemes that flow to the villages under NRHM.

References : indiasanitationportal.org , www.nrhm.org

Women Empowerment

In the simplest of words it is basically the creation of an environment where women can make independent decisions on their personal development as well as shine as equals in society.

Women want to be treated as equals so much so that if a woman rises to the top of her field it should be a commonplace occurrence that draws nothing more than a raised eyebrow at the gender. This can only happen if there is a channelized route for the empowerment of women. (www.womenempowermentinindia.com). Empowering women in developing countries is essential to reduce global poverty since women represent most of the world's poor population. According to Sen and Batliwala (2000) "Empowerment is the process by which the powerless gain greater control over the circumstances of their lives. It includes both controls over resources and over ideology ... [Includes, in addition to extrinsic control] a growing intrinsic capability- greater self confidence, and an inner transformation of one's consciousness that enables one to overcome external barriers.(NEHU 2008). Human development and women empowerment are both sides of the same coin. Empowered women can contribute to human development through household and community activity and at the same time progress in human development is expected to promote women empowerment through improved health, nutrition, education, social security , political freedom and a decent standard of living.

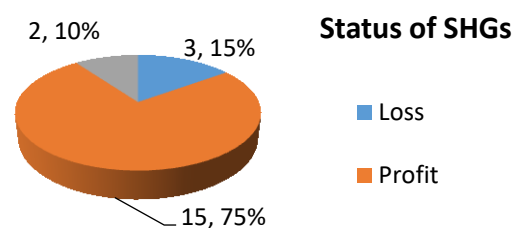
At present the female population of Assam counts to one crore, fifty two lakhs , fourteen thousand three hundred and forty five.(1,52,14,35).The female sex ratio is 958 females per 1000 males. Despite these great efforts to tackle illiteracy, the statistics produced by National Family Health Survey, India, 2008 suggests that in Assam still 30% women within the age-group 15-49 have never attended school, while, only 19% women have completed at least 10 years of schooling. Even unemployment remains a major problem. According to the latest figures, the registered unemployed stand at 2.1 million, which undoubtedly exacerbate poverty. Importantly, educated unemployment is increasing alarmingly- graduates account for 20%, and school leavers account for 57% of the registered unemployed persons. (www.assamchronicle.com).During 1991-2001, women's enrolment in higher education was less than 33 %.Therefore if nothing is done the future of women in the state appears bleak.

Questions asked:

Is the SHG running at a profit or loss?

There are more than 500 self help groups (SHGs) under Grasshopper Assam’s livelihood program. This question was asked to the presidents/Secretaries and members of most of the groups whom we met at different Gao Panchayats in KNP area. Various groups of women beneficiaries we met at government schools at Kohora and Dhansirimukh. We also checked their passbook of banks and found that most of the SHGs are running at **profit**. Different groups have different ways of accumulating money in their collective bank accounts. Groups whose members are well off save 100 to 150 rupees per month while groups which are not well off save 30 to 50 rupees each month. While some groups in order to curb the monetary pressure on them keep 10 rupees per week which gets accumulated to rupees 50 or 40 at the end of the month. So it can be said that the average money accumulated by each women in SHGs range from a minimum of 40 to maximum of 150 rupees per month. They not only accumulate money but also give loans to members of SHGs in times of need. However, the loan giving system is restricted to members only as it is difficult to trust outsiders as the money loaned out to non members may be difficult to get back on time. We also found that some groups have some interesting ways of accumulating money. One of them is known as *hundi khel*. This is one type of a lottery game where all the women of SHG groups participate. An amount is decided beforehand and each member of the group has to submit the money. Names of members are written on chits of paper which are shuffled in a bowl and the lucky one gets the decided amount. Each of the members in the group gets her turn to win in one or the other month. The member, who already gets her due amount, gets her name strike off from the winning list yet she has to pay the individual amount to the group for the continuation of the game. In case any member falls under financial crisis, the group decides to give that member the winning prize deliberately. We got to know about another method of money collection for the SHG. In this method, a particular amount is decided which every women has to pay to the group weekly; thereafter the whole group goes to one of the members house and performs all the household chores such as winnowing (separation of grain from husk), preparation of local items *chira, komal chaul, pithas* etc. Once all the tasks of a household is completed, the owner of the household/that particular SHG member pay the predetermined amount to the group which goes to the specific bank account of the group. In this manner multiple tasks of a household gets performed and at the same time the member too feels that she is paying the amount out of a service rendered to her. In rural households this kind of collective work is of much importance as we get no particular people to work for us as against a fee (which is not the case in urban areas where we get maids to work in households).Henceforth in our survey we came up with the following data.

Status of SHGs	No. of Respondent Groups
Loss	3
Profit	15
No loss no profit	2
Total	20

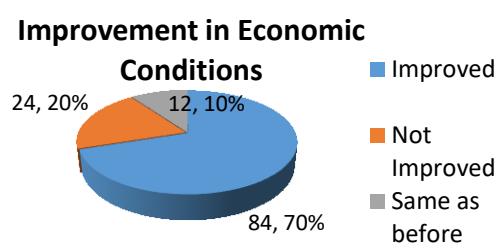


From the above data it can be concluded that, most of the SHG’s are presently running at a profit either by selling the products in the market or by regular saving, the amount of which

gets accumulated in the collective bank accounts. However, the respondents who answered loss does not mean that their accounts got inoperative but remain active with savings. Some of these groups are yet to receive any kind assistance from government agency/NGO in the form of income yielding assets like poultry/ducks/goats/pig or the like. while some others have received such assets under numerous government schemes but income generation has not been taking place either due to early death of these livestock or these livestock need to grow up to yield income. Those who replied that they incurred neither loss nor profit actually meant that they were either a newly formed SHG or they did not avail any benefit out of the assistance provided.

Have your economic condition improved than before?

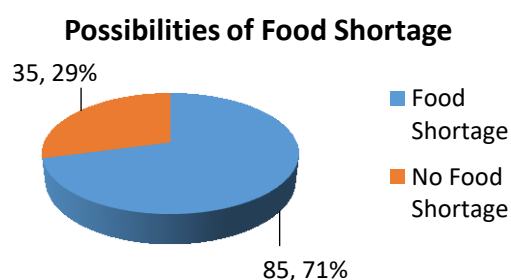
Improvement in Economic Conditions	Respondent (individual group member)
Yes	84
No	24
Same as before	12
Total	120



From the above table we can conclude that majority of the SHGs are well off than before either by being members of SHG’s wherein they can sell the own (with or without external support) products in the market or are engaged in the nearby resorts/lodges/dhabas as part time or full time workers like cleaners, cook, housekeeping staff etc and belong to families having atleast two earning members. Respondents whose economic conditions neither improved nor changed are mostly from the families without SHG membership and are daily wage earners, or members who did not benefit from the SHG formed due to early death of poultry/because of their illness in the initial days owing to poor management of their livestock’s (such as not well built shelters, no timely vaccination), attack by other wild animals (such as *hepah* or snakes or wild boar) or during annual flood which destroys life and property incurring losses .

Do the inhabitants of the villages suffer from food shortage?

Possibilities	Total No. of Respondents
Yes	35
No	85
Grand Total	120



From the above diagram we can see that while 71% of households interviewed did not experience food shortage the rest 29% suffer from food shortage specially during the floods or slack seasons. Those who suffer from food shortage narrated their plight as given below

Loss and destruction of farm lands owing to seasonal floods and animal attack mostly elephants, wild boar, rhinos and deers who invade the villages frequently.

Those who depend on daily wage for their subsistence find it difficult to make both ends meet on off days, holidays or locally declared bandhs.

Single breadwinner of a large family who cannot save enough to sustain the entire family. Some of them do not even have access to PDS.

In such cases they either borrow food from the other neighbors or shops nearby or sometimes even have to sleep empty stomach.

The 71% hardly face a food crisis situation as they are well off to purchase food items (cereals, rice, wheat) and even receive rice and kerosene oil from the government under PDS.

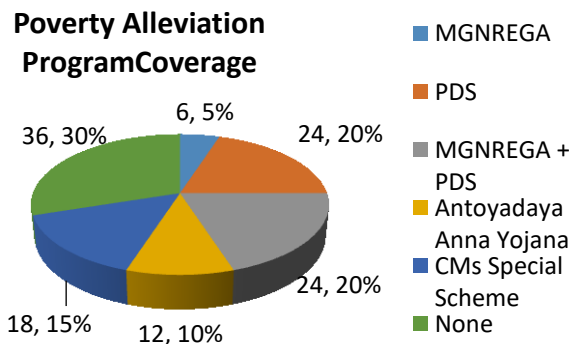
Do you sell SHG products in the market? What are those?

Some of the group members who have benefitted from their livestock rearing sell the following products- eggs of poultry/ducks, meat of pigs/goats/poultry/ducks.

Do you avail any flagship programs provided by the government such as MGNREGA, NRLM, and PDS etc?

The response we received from interviews are as under:

Schemes	Beneficiaries
MGNREGA	6
PDS	24
MGNREGA + PDS	24
Antoyadaya Anna Yojana	12
CMs Special Scheme	18
None	36
Total	120



Majority of the people are aware of flagship programs and try to avail the benefits provided by the government such as **under PDS**. In Assam the Public Distribution System (PDS) is a major instrument of the Government’s poverty eradication programme which is regulated under the provisions of “Assam Public Distribution of Articles Order, 1982”. The main task of the State Food and Civil Supplies Department is to maintain smooth functioning of Public Distribution System in the State and overall stability of general price level as well as to ensure adequate availability of commodities essential to the society. The Food and Civil Supplies Department has been implementing some welfare schemes sponsored by the Government of India such as schemes for Below Poverty line (BPL), Above Poverty Line (APL),

The present status of these schemes as made available by the state Directorate of Food and Civil Supplies are narrated below.

I. Below Poverty Line (BPL):

The scheme has been in implementation in the State since June, 1997 covering 14,76,433 nos. of families till date. Under the scheme, the families have been provided with Rice at the rate of 35 Kgs. per family in a month. In addition to BPL Rice, these families are also provided with Wheat or its products, S. K. Oil, Levy Sugar, Salt (Zonal) through Public Distribution System at subsidised prices.

II. Above Poverty Line (APL):

The Above Poverty Line scheme normally covers the middle class people of the society. It is estimated that there are about 38.3 lakh families living Above Poverty Line in the State. These families have been provided with APL Rice, Wheat and its products, Levy Sugar, S. K. Oil and Salt (Zonal) etc. in every month at Government fixed price through Family Identity Cards (FIC).

III. Antodyoya Anna Yojana (AAY):

As per the guidelines of the Government of India, the Antyodyoya Anna Yojana Scheme has been implemented since November, 2001 in the State. Under this Scheme, the State Government has been providing 35 Kgs. Rice per family per month at a price of Rs.3.00 per Kg. to each of 4,16,283 nos. families selected from the poorest of the poor BPL families. The State Government has been providing 35 Kgs. Rice per family per month at a price of Rs.3.00 per Kg. to each of 4,16,283 nos. families selected from the poorest of the poor BPL families. In addition to Rice, the families also get Wheat and its product, Levy Sugar, S. K. Oil and Salt (Zon) .Though there are flagship programs like MGNREGA, but it is not on regular basis as roads and other construction is seasonal. The main objectives of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) are rural development and employment. But so far as Assam is concerned, these objectives have hardly been achieved .Besides we got to know from the survey that some proportion of people categorised as poor has not yet received their ration cards or BPL cards whereas relatively well to do families have ration cards and therefore can avail PDS to its fullest limit. Some category of people around 20% of total interviewed, are aware of the government schemes and hence they avail both PDS and MGNREGA. This shows low success rate of the government flagship programmes at the villages .

The Key Challenges:

Kaziranga National Park is now a protected area of huge significance. While some issues need to be addressed within the protected area, particularly with respect to a constant poaching pressure, the main challenges in the future will come from outside, particularly regional pressures at a landscape scale and more diffuse pressures caused by rising population and higher economic expectations. To promote the socio economic condition of these fringe population we need to adopt an approach of reforms initiatives for development of alternative livelihood means to correct the imbalance that might have taken place over the years. If the eco friendly traditional livelihood options available to these villagers are sustained and promoted through innovative measures, a positive impact on the health of the National Park can be expected leading to reduced poaching, improvement in conservation efforts, generation of self employment opportunities among youth and women for their economic empowerment. We now briefly state the challenges being faced :

Poaching:

The park is home to the mighty one horned rhinoceros which has been facing constant threat. Over 40 one-horned rhinos were killed in 2012 in Assam. While close to 30 rhinos were killed in various protected areas due to devastating floods, more than 12 were killed by poachers, including seven of them killed inside the high security Kaziranga National Park bringing down the rhino count at present too 2290. The poachers kill the rare, one horned rhinoceros for its prized horn, whose price in the International market varies from Rs 40 Lakhs to Rs 90 Lakhs. As a result of which, voracious poachers who are always on the look-out for a God-sent opportunity becoming active to make the most of the emerging situation resulting from hundreds of distressed animals .The common methods used for killing them are are :

- Shooting is by far the most common method used; rhino horn traders hire sharpshooters and often supply them with rifles and ammunition.
- Trapping in a pit depends largely on the terrain and availability of grass to cover it; pits are dug out in such a way that a fallen animal has little room to manoeuvre with its head slightly above the pit, so that it is easy to saw off the horn.
- Electrocuting is used where high voltage powerlines pass through or near a protected area, to which poachers hook a long insulated rod connected to a wire, which is suspended above a rhino path.
- Poisoning by smearing zinc phosphide rat poison or pesticides on salt licks frequently used by rhinos.
- With a noose, this cuts through the rhino's skin and kills it by strangulation.

Poaching gangs usually consist of three to five people. According to several sources, generally one helper is local and familiar with the area; another, also usually local, carries the provisions; and one or two others are from Nagaland, but occasionally from Karbi Anglong area situated towards the south of the park. The poachers usually target young

unemployed youth and promise to pay them a huge amount to shoot the rhinos. Apart from the horn some other parts like nails, skins have very high value in the Asian traditional market. **One such instance in 2008** revealed that four Nagas who had come from Dimapur caught hold of an eighteen year old boy selling firewood and agreed to pay him ₹ 9000 in advance claiming they would pay more later. This is equivalent to about 3months' earnings for collecting firewood at the time. They also employed three poachers from the Karbi Anglong region to shoot the rhinos with .303s brought from Dimapur. The gang entered the Park in January, May and July 2007 and shot a rhino on each visit. They brought with them water, dried food, knives and an axe and arrived and stayed for up to 24 hours. The first two rhinos were killed with one bullet each and the last took three bullets. They removed the horn in less than five minutes using their knives and axe. On all three occasions they handed the horn over to a Naga trader outside the Park, who then took two or three days to walk to Dimapur with the horn. Rajan was told that the Naga gave the shooters INR 200,000–300,000 per kg for the horn. Rajan hid in the forest during these months to avoid detection. He returned for a fourth and last trip into the Park, but Park staff shot dead one of the shooters in the gang and caught two others while Rajan escaped. In August 2008, Rajan's parents brought their son to the Forest Department to surrender.

(source : pachydermjournals.org/index.php/pachy/article/viewFile/136/88)

The following table gives the no's of rhino poached at Kaziranga since 1962.

Year	No of rhinos poached
1962	1
1963	1
1964	0
1965	18
1966	6
1967	12
1968	9
1969	8
1970	2
1971	8
1972	0
1973	3
1974	3
1975	5
1976	1
1977	0
1978	5
1979	2
1980	11
1981	24
1982	25
1983	37
1984	28

1985	44
1986	45
1987	23
1988	24
1989	44
1990	35
1991	23
1992	49
1993	40
1994	Not known
1995	Not known
1996	Not known
1997	Not known
1998	8
1999	4
2000	4
2001	Not known
2002	Not known
2003	Not known
2004	Not known
2005	Not known
2006	Not known
2007	Not known
2008	Not known
2009	Not known
2010	Not known
2011	Not known
2012	40
2013	NA
2014	NA

*The above table shows rhino killed by poachers and escape with horns as on January 2013.(source:<http://www.indiatvnews.com/crime/news/poachers-kill-two-rhinos-in-assam-escape-with-horns-2388.html>).

There is no element of doubt that the One horned rhino is the most important asset of the park and tourists (both Indian and Foreign) come from various nook and corners of the world just to have a glimpse of the horned creature .This has a huge scope for tourism related activity to boost up within or its periphery. But commercial exploitation of the Park at the expense of wild animals cannot be support-worthy. In Kaziranga, animals like leopards, rhinos, elephants desperately s hilly areas of the district of Karbi Anglong need natural corridors that are available in the Park to migrate temporarily to the contiguous areas during the rainy season every year when most of the Park remains inundated by the mighty Brahmaputra. These hills contribute immensely to the Park's well-being. But the animals are facing, constant threat of being killed of growing settlements, tourist's facilities

and industrialization which has in turn not only affected the traditional animal corridors but also degraded much of the contiguous areas.

Floods:

KNP being a floodplain ecosystem, annual flooding seems to be a common phenomenon. The Brahmaputra is also one of the most sediment-charged rivers of the world. The Brahmaputra region in India is highly prone to earthquakes and this causes landslides which disturb the drainage system. Bank erosion has become a serious problem following the 1950 Assam earthquake, which changed the course of the river, and contributed to heavy flooding in the following years. The deforestation and flood control methods, such as the construction of embankments, have also altered the riverine ecosystem. This has resulted in the river becoming heavily silted. As such the runoffs from this catchment area during the monsoons sometimes result in high intensity floods inside KNP. During the flood season the villages at the fringe are the ones that are affected the most as most of them are located in low lying areas. They have to leave their homes to take shelter in a nearby school or an elevated building which is built on a sufficient height. Moreover there is loss and destruction of agricultural lands which forms the main source of livelihood for many. During severe flash floods even life and property are damaged and even the domestic animals they rear (such as ducks, pigs, goats, etc), The last flood recorded was during 2012 when the villages had to suffer immensely. Even the animals inside the park are equally affected. During rainy season when flooding in Kaziranga National Park forces the wild animals to move southwards to elevated grounds, many wild animals are killed by vehicles while attempting to cross NH-3728. Hog deer, fishing cat, civet, swamp deer, hog badger suffer maximum mortality. Blocking of open spaces by development (land use change) and settlement has left little or no space for the animals to move out to the higher areas. As such they sometimes take shelter in the nearby fringe villages. Even though the villagers never make an attempt to kill them when they invade human habitations, animals such as elephant, tiger, deer might come under regular man-animal conflict and attack their farm lands and other domestic animals being reared at their homes. Floods also create communication gaps between the various camps and with the Range Headquarters. During such time patrolling is done mainly by boat. Many camps situated in strategic and low-lying areas of the park are submerged by floodwater during high floods forcing the inmates to vacate their posts.

The present socio economic scenario:

There has been a common observation that majority of poor in the villages of No 1 Sildubi under West Kaziranga GP and Bamun Gaon under Moridhanshri GP on the other extreme fringe of the park do not have access to electricity and properly built roads, no access to BPL cards and fall common victims of floods which causes loss of life and property almost every year. Many of them own both basti and kheti land but agriculture is hardly possible during the monsoons where riverine floods become persistent. Only a few families show a successful saving habit at the nearby rural gram bank while others (specifically daily wage earners) earn little (2000-5000 a month) or nothing during days of locally declared bandh which is quite common in the state. They end up saving nothing in order to fulfil the needs of the entire family. Another important observation is that they are hardly benefitted from the self help groups being formed where they take up activities like animal rearing due to poor management of the livestock (pigs, ducks and goats). The village at Madhya

Kaziranga (No 1 Kohora and No 2 Kohora) seem to be better off but still are dependent only on activities of the self help group and on agriculture .

The present Health scenario:

Good health is an important attribute of an individual's growth and development. Even though the villages receive assistance from the nearby govt. dispensary in the form of ASHA (Accredited Social Health Activist) workers who create health awareness among rural poor specially women and children , still it holds a very poor stock of medicines which is not enough to combat all major diseases. Also it is seen people just filter the water from tube wells and motors. They need to be made aware of the importance of boiling the water before consumption as a minimum requisite to keep diseases at bay. The most common diseases amongst the villagers are malaria, dysentery and diarrhoea and are commonly recurrent during the flooding/rainy season. There is no access to proper healthcare facilities nearby and they usually have to travel far to the hospital situated at Bokakhat about 25 kms from Kohora. and the villagers can't afford medicines from privately owned pharmacies. Also the availability of free medicines and ORS packets etc are very limited in quantity which is not enough for a large family of the diseased. There is dearth of qualified doctors in the area.

The prevailing sanitation habits:

Cleanliness is next to godliness "only if practiced practically instead of just liping theoretically". Proper sanitation at home can only lead to a cleaner healthier society. From the survey Kutcha toilets seem to be prevalent in majority of the households. Such open defecation can trigger epidemics like Cholera , Dysentery and Diarrhoea which has an ill effect on the health of the families and even might be fatal in case it's not curable on time .Unsafe disposal of water sources risks the contamination of unprotected water sources. Water borne diseases are transmitted through contaminated and unsafe water .Increased frequency and intensity of flooding may expose sub surface sanitation system to greater leakage. Sanitation systems should be flood proofed such as by raising latrine slabs in those areas affected by frequent flood events. Improved sanitation system at the villages should at least contain pit latrine with slab / ventilated improved pit / composting toilet which should be well connected to a septic system. Even though the scheme under Nirmal Bharat from the village. Panchayat have given plates for pucca toilets in many homes it is yet to cover a major chunk of village population.

The Measures to be taken

According to statistics there are only 3,333 greater one horned rhinoceros in the world (as at 31st December 2012) with only 75% of them found in Assam. Measures should be taken to train the staff for anti poaching aspects. AT KNP it is observed that there are manpower and resource constraints for the department and acquisition and utilisation of funds need to be made more transparent. From October 27, 2010 to October 14, 2012, more than two dozen horns were served from rhinos from different areas in and around the national park. Significantly in some cases the use of high powered rifles and semi automatic assault weapons has been established raising the issue of militants being involved in poaching. The militants cannot carry on their rhino killing mission without the help of local inhabitants of the fringe villages who are well aware of the whereabouts of the park. The government of Assam need to take timely steps to bring competent officials in the helm of the Park to

improve the administration and launch counter attacks against the poachers. Of late some important decisions have been taken both at the state and national government level for protection of the wildlife. It is high time all concerned to track and root out the evil nexus between few corrupt agents/locals involved in various enforcement agencies and wildlife poachers. Besides the need to have better co-ordination among the various enforcement agencies with enhanced information sharing on poachers need to be stressed upon. Also anti poaching awareness programme should be implemented on a wider scale so that the local people are involved in furnishing information on the movement of poachers through implementation of eco friendly development activities as well as massive education and awareness drive in the fringe villages of the National park. In certain cases incentives in the form of cash or kind could help in preventing damage to wildlife or in apprehending culprits, middle men and poachers. In case the poachers have already entered the park, reactive action should be undertaken by the staff to track down and apprehend the poachers inside the park. The logistics of such track down operation is enormous and calls for radical improvement in the existing infrastructure for anti poaching operations viz. Improvement of surface communication and radio communication network, improvement in accommodation activities of field staff, greater mobility on land surface and water ways through procurement of vehicles and boats, augmentation of surveillance activities through construction of watch towers on suitable locations, etc. The phase after the poachers commit the crime and exit the park should consist of coordination with other law enforcing Departments. Use of satellite technology, installation of high end infrared cameras on important approaches, routes and corridors for round the clock monitoring in a coordinated online mechanism system could bring down the poaching activities to the minimum. It is not known whether the KNP authorities have done any massive planning in this regard. As the park attracts a large number of international and national NGOs of repute in different spheres of the park activities and action plans, such an elaborate protective approach should have already been adopted or implemented.

The park is flooded almost every year and due to its severity, causes great losses to the natural environment of the park, death of wild animals, and not to forget the fringe village habitations and to the protection structures present in the park. Flood causes many animals to migrate outside the park where they are susceptible to hunting and reprisal for crop damage. Absence of adequate high grounds within the park as places of refuge for the animals during high floods adds to mismanagement on the part of the park authorities. The control measures can be intensification of patrolling maintenance of existing and acquiring of new speed boats, construction and maintenance of highlands, setting up of signboards to control speed of vehicles along the route of NH 37 to prevent hitting of animals who tend to cross the roads during the flooding season, removal of water hyacinth and close coordination with concerned government departments and civil authority during the natural calamities and flood time.

Shifting of occupation from agriculture to other options over the years:

The crop pattern in respect of Kaziranga National Park of Golaghat District includes different crop areas such as sali paddy, boro paddy, early ahlu paddy, regular ahlu paddy, mustard, potato, lentil, pea, black gram, rabi vegetables and kharif vegetables. A total number of 32 villages are undertaken in this study.

Different mitigating measures are undertaken in order to develop the agricultural practices in these villages. Seeds, pesticides and fertilizers are distributed to the farmers under different Government schemes through F.M.C.

The natural calamities and other factors affecting the crops are situations like floods, droughts and damages done by wild animals. About 30-40% of the crop area gets damaged every year due to the factors mentioned above.

It is observed that people from the study area have shifted from agriculture to other occupations in order to attain a better living standards. During the last several years stone quarrying have become one of the important economic activities to which the villager particularly the village male in groups have shifted to. In the hills of Karbi Anglong District, stone quarrying is going on for multiple purposes. The youth of the villages have taken active participation in works like blasting, cutting and carrying, loading of stones for transportation to different destinations. Those engaged in such works as labour receive @ Rs. 200 as the daily wage, thus earning an income of 4000-5000/month. However, with the introduction of Bulldozer/ Excavators and Crane, in the last couple of years, the demand/requirement of daily wage labourers has decreased. These labours have now become unemployed. They have, therefore, migrated to places like Bangalore, Chennai and Hyderabad and got engaged in occupations like security guards/casual labours and such other professions in small business sectors.

On the other hand, with the opening of some star category tourist resorts, restaurants and hotels in the Kaziranga National Park area, many villagers both men and women – educated /semi literate have also got engaged in these places. They are mostly involved in cleaning, cooking, house-keeping, gardening, security and such other purposes.

Some people have also started their own small-scale businesses like a grocery shop, selling of the cane/wood products etc. In the schools, mid-day meal is cooked by village females who get paid by the Government.

Thus, the above mentioned factors stand rightly to point out the causes of shifting of the occupation from agriculture to other occupations by the village youth of the Kaziranga National Park area, Golaghat District, Assam.