



**Indian Institute of Technology Guwahati**

## **Report 2015-16**



**Unnat Bharat Abhiyan**



## Unnat Bharat Abhiyan উন্নত ভারত অভিযান



Indian Institute of Technology Guwahati

ভাৰতীয় প্রযুক্তিবিদ্যা প্রতিষ্ঠান গুৱাহাটী

Unnat Bharat Abhiyan is inspired by the vision of transformational change in rural development processes by leveraging knowledge institutions to help build the architecture of an Inclusive India. Their mission is conceptualised as a movement to enable processes that connect institutes of higher education with local communities to address the development challenges of rural India through participatory processes and appropriate technologies for accelerating sustainable growth. It also aims to create a virtuous cycle between the society and an inclusive university system by providing knowledge and practices for emerging professions and to upgrade the capabilities of both the public and the private sectors.

**1. Vision:** Unnat Bharat Abhiyan is inspired by the vision of transformational change in rural development processes by leveraging knowledge institutions to help build the architecture of an Inclusive India.

**2. Mission:** The Mission of Unnat Bharat Abhiyan is to enable higher educational institutions to work with the people of rural India in identifying development challenges and evolving appropriate solutions for accelerating sustainable growth. It also aims to create a virtuous cycle between society and an inclusive academic system by providing knowledge and practices for emerging professions and to upgrade the capabilities of both the public and the private sectors in responding to the development needs of rural India.

### स्वच्छ भारत की गीत

अरूप कुमार शर्मा  
भारतीय प्रौद्योगिकी संस्थान गुवाहाटी

हर एक दिल में ये है चाहत  
सुंदर और स्वच्छ होगा भारत,  
गंदगी के ज़जीरों से  
देश को अब मिलेगी राहत ॥

चलो चलें .....चलो चलें .....

हर गली हर मोहल्ले में  
बसाएँगे ऐसा स्वच्छ भारत,  
दिल से सुनो तो सुन पाओगे  
बापू के आने की आहट,  
इतना सुंदर देश हमारा  
देश नहीं देवी की मूरत ॥

चलो चलें .....चलो चलें .....

गंदगी न फैलाएँगे  
न आने देंगे ये आफत,  
जल मिट्टी वायु हो निर्मल  
दिल से आज तू ले ले शपथ,  
देश हमारा और सजेगा  
स्वच्छ रहने की कर ले आदत ॥

(प्रोफेसर अरूप कुमार शर्मा, भारतीय प्रौद्योगिकी संस्थान गुवाहाटी के सिविल अभियांत्रिकी विभाग के विभागाध्यक्ष हैं।)

### IITG UNNAT BHARAT ABHIYAN

A committee has been formed for implementation of 'Unnat Bharat Abhiyan' with Prof. S. K. Kakoty as coordinator.

Committee in its first meeting held on 27th October, 2014 shortlisted 10 nearby villages to be adopted by IIT Guwahati.

Health and Sanitation will be main agenda of the program.

Sl. No.	Name of the Village	State	Description of Work	Remarks
1.	Rajaduar	Assam	Heritage	Health and Hygiene will be for all the villages
2.	Kating Pahar	Assam	Education, Sanitation	
3.	Purankhundum	Assam	Pottery, Education	We have been working for improvising skills for Pottery
4.	Lumpi, Boko	Assam	Nature and Rural Tourism, Education	Snow fall starts around January
5.	Amtola	Assam	Renewable Energy, Education, Tourism	We have started Working in the village
6.	Bodo Gaon	Assam	Education, Sanitation	
7.	Tiling Gaon	Assam	Education, Sanitation	
8.	Ananda Nagar	Assam	Education, Sanitation	
9.	Baka Gaon	Assam	Education, Sanitation	
10.	Mawlynnong	Meghalaya	Biogas Plant	



## Veterinary Camp

Date : 27.03.16

Venue : Kating Pahar Primary School, Kating Pahar, Amingaon,  
North Guwahati, Assam.  
Time : 8 a.m – 12.30 p.m.  
No. of Beneficiaries : 45 persons, total 183 animal including Cattle, Goat, Dog,  
Pig, Poultry birds (Chicken, and duck)

Animal Health Check-up Camp, some snaps.....







On 27<sup>th</sup> March 2016 an animal health checkup camp was organized at Kating Pahar, Amingaon, North Guwahati and was conducted successfully under Unnat Bharat Abhiyan of the Indian Institute of Technology Guwahati. Early morning vaccines were given to cattle, pig, goat, dog and poultry. The vaccines were given for foot and mouth disease, hemorrhagic septicemia, black quarter rabies and NDV. The clinical cases were treated with antibiotics, anthelmintics, antihistamines and multivitamins. Animals include were goat, dogs and poultry which were also vaccinated and treated accordingly. A total of 45 owners were benefitted by treating 183 animals. We thank Dr. Amit, Dr. Basil KG, Dr Krishanu Kumar Bhagabati, Dr. Nilotpal Das, Dr Chandrashekhar Girish Bapat from veterinary college Khanapara for their assistance in the camp. We would like to extend our sincere thanks to Dr. Monika Koul, Nakul Yadav, Manash Singha, Manisha Shah, Vishnu Kumar, Barnali Nath for their help in organizing the event.



## Veterinary Camp

Date : 21.02.16

Venue : Tiling Gaon, North Guwahati (Rural), Assam.  
Time : 8 a.m – 12 p.m.  
No. of Beneficiaries : 35 persons, total 220 animal including Cattle, Goat, Dog Rabbits, Poultry birds (Chicken, parrot and duck)

Animal Health Check-up Camp, some snaps.....











On 21<sup>st</sup> February 2016 an animal health checkup camp was held at Tiling Gaon, North Guwahati (Rural) and was successfully conducted under Unnat Bharat Abhiyan of Indian Institute of Technology Guwahati. Early morning vaccination was given to cattle and goats. The vaccines are given for foot and mouth disease and hemorrhagic septicemia. The clinical cases were treated with antibiotics, anthelmintics, antihistamines and multivitamins. Other animals include goat, dogs and poultry which were also vaccinated and treated accordingly. A total of 35 owners were benefited by treating 220 animals. Dr Amit Pandey and his team for the Guwahati veterinary Hospital, Khanapara actively participated in the vaccination camp. We thank Dr. Amit, Dr. Basil KG and Dr. Nilotpal Das for their assistance in the camp. We would like to extend the sincere thanks to Dr. Monika Koul, Moushume Das, Manash Singha, Sudhir M R, Aditi Makhija, Navodit Kumar Singh and Amit Kumar for their help in organizing the event.



## Veterinary Camp

Date : 12.09.15

Venue : Rajaduar, Kamrup Rural, North Guwahati, Assam.  
Time : 10 a.m – 3 p.m.  
No. of Beneficiaries : 34 persons, total 223 animal including Cattle, Goat, Dog and Poultry











On 12th September 2015 an animal health camp checkup was held at Rajadur, Kamrup Rural, North Guwahati and was successfully conducted under Unnat Bharat Abhiyan of Indian Institute of Technology Guwahati. Early morning vaccination was given to cattle and goats. The vaccines are given for foot and mouth disease and hemorrhagic septicemia. The clinical cases were treated with antibiotics, anthelmintics, antihistamines and multivitamins. Other animals include goat, dogs and poultry which were also vaccinated and treated accordingly. A total of 34 owners were benefited by treating 234 animals. Dr Sameer Phukan and his team for the North Guwahati veterinary dispensary actively participated in the vaccination camp. We thank Dr. Amit, Dr. Krishanu, Dr. Sanghamitra and Dr. from Khanapara veterinary college for their assistance in the camp. We would like to extend the sincere thanks to Dr. Monika Koul for her help in organizing the event.



## Activities 2015-16

### Medical Camp

স্বাস্থ্য পরীক্ষা শিবির

Date : 30.05.15  
 Venue : Dirgheswari Middle School, Phulung Village  
 Time : 10 a.m – 3 p.m.  
 No. of Beneficiaries : 267



Free Health Camp was organized on 30th May 2015, at Dirgheswari Middle School; Phulung Village by IIT Guwahati under the aegis of 'Unnat Bharat Program' with the objective of providing free medical check-up and preventive measures and create awareness on the need for personal hygiene in prevention of serious disabling diseases to the local community. Team comprising of 30 members from IIT Guwahati including doctors, nurses, faculties, staff, and students were complemented by the Railway's medical team to make the event successful. The services that were provided at the medical camp were as follows but not limited to it only:

1. ENT
2. ORAL AND DENTAL HYGIENE
3. GENERAL MEDICAL FOR ALL AGE GROUPS
4. GYNAECOLOGY



## 5. CHILD CARE

## 6. DIABETIC

Apart from free medical check-up medicines were also distributed as per the need. About 13 local drug suppliers joined hands and provided medical supplies to the patients. In addition, medical questionnaires having some basic set of information's relating life style and health history were also gathered and are being analysed to get a holistic picture of health issues. The medical camp witness a steady flow of patients throughout the day and many were benefitted through this camp. More than 250 patients (including adults, children) availed the service and consultation from the team of Doctors. The medical camp was truly a testament to the power of unity and commitment to a cause. Everything, from planning for sufficient medical personnel to acquiring the appropriate drugs to making sure the doctors were comfortable, happened only because of the dedication and sincerity of the team. Their unrelenting follow-up efforts and involvement in logistics was commendable. Last and not least any medical camp could not have been successful without the medical personnel as well as the patients who attended the medical camp. Overall the camp was a huge success and we create many smiling faces there.

Health Check-up Camp 30-5-2015... some snaps.....

Morning 9.30am to 3pm, at Dirgheswari ME School, Kamrup Rural, North Guwahati, Assam.

## Health Camp

স্বাস্থ্য পরীক্ষা শিবির

Under the Aegies of



Indian Institute of Technology Guwahati

ভাৰতীয় প্ৰযুক্তিবিদ্যা প্ৰতিষ্ঠান গুৱাহাটীৰ সৌজন্যত



উন্নত ভাৰত অভিযানৰ অধীনত এক পদক্ষেপ

An initiative under **UNNAT BHARAT ABHIYAN**

Date : 30 May 2015, Saturday

তাৰিখ : ৩০ মে' ২০১৫, শনিবাৰ

Time : 9.30 am to 2 pm

সময় : ৯.৩০ ব পৰা আবেলি বজালৈ


Venue : Dirgheswari ME School

স্থান : দীৰ্ঘেশ্বৰী এম. ই. স্কুল ২









## উন্নত ভাৰত অভিযান

### আগুন বাবু মধুমেহ (বহুমূত্র) ৰোগত ভূগিছে লে কি .....???

- প্ৰতি মূত্ৰ বহুমূত্ৰ হোৱাৰ ওচৰে অকণক নহয় কেৱল বোকাৰ বিষয়ে
- বহুমূত্ৰ হ'লে লগে লগে আশেপাশে মেহবল পৰীৱৰ্তিত পুৰীকলিয়া বা গৰা হ'লিহা বে কি??
- পৰ্জাৰোগত পৰীৱৰ্তিত মধুমেহ ৰোগে আশেপাশে শিশুটোক দুৱৰে মূত্ৰৰ ঠেগি দিব পাৰে
- বহুমূত্ৰ হোৱাৰ পৰা হ'ব পৰা গৰা গৰা বিকল পৰা পৰিহাৰ পাবলৈ চোমকালে ইয়াক উপশম হ'বলৈহে যোৱা কৰা উচিত

#### বহুমূত্ৰ হোৱাৰ পৰা হ'ব পৰা চিহ্ন


- অস্বস্তিৰ অৱস্থা
- শ্ৰেণী হোৱাৰ ক্ষমতা
- বহুত বিকল
- বিকল হ'ব


#### আশেপাশে কৰণীয়

- সন্দৰ্ভ আশেপাশে পৰীৱৰ্তিত হোৱাৰ ওচৰে পৰীৱৰ্তিত
- পুৰীকলিয়া হ'ব
- পুৰীকলিয়া হ'ব
- শিশুটোক দুৱৰে মূত্ৰৰ ঠেগি দিব পাৰে

#### বহুমূত্ৰ হোৱাৰ পৰা

- সন্দৰ্ভ আশেপাশে পৰীৱৰ্তিত হোৱা
- অস্বস্তিৰ অৱস্থা
- শ্ৰেণী হোৱাৰ ক্ষমতা
- বহুত বিকল
- বিকল হ'ব





**DON'T  
IGNORE  
DIABETES**



#### ধপাতৰ পৰা কেঞ্চাৰ হয়.....

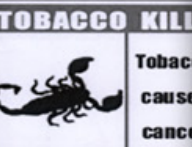
- ধপাতৰ ৪০০০ বিধ বিভিন্ন ধৰণৰ কেঞ্চাৰ হ'ব পৰা হ'বলৈহে যোৱা
- কামৰূপ, বিষ্ণু, গুণাৱৰ্তিত আশেপাশে কেঞ্চাৰৰ মূল কাৰক
- সন্দৰ্ভ আশেপাশে পৰীৱৰ্তিত হোৱাৰ ওচৰে পৰীৱৰ্তিত হোৱাৰ ওচৰে
- ধপাত - মূত্ৰ কাৰক
- মূত্ৰ এম্বাৰে ভিতৰলৈ ওজন হোৱাৰ মূত্ৰৰ মূত্ৰৰ ঠেগি দিব পাৰে
- আগুন বাবু মধুমেহ ৰোগ উপশম হোৱাৰ আশা

#### আগুন বাবু গোটাখা বা তামোল চোৱা



##### যদি হয়

- সন্দৰ্ভ আশেপাশে পৰীৱৰ্তিত হোৱাৰ ওচৰে
- ধপাত বহুত কৰ



**TOBACCO KILL  
cancer**

## Unnat Bharat Abhiyan (উন্নত ভাৰত অভিযান)

### Indian Institute of Technology Guwahati

#### ভাৰতীয় প্ৰযুক্তিবিদ্যা প্ৰতিষ্ঠান গুৱাহাটী

#### Medical Prescription (মেডিকেল প্ৰেসক্ৰিপশন)


Name (নাম):

Age (বয়স):

Gender (লিংগ):

S.NO (ডায়িক নং):

Date (তাৰিখ):



Medical Officer (মেডিকেল কৰ্মকৰ্তা)





## Ru-Tag-NE

The Rural Technology Action Group (RuTAG) is a mission, conceptualized, initiated and sponsored by Dr. R Chidambaram, Principal Scientific Adviser (PSA) to the Government of India. It aims at improving the rural economy through appropriate S & T interventions in the traditional methods of production. The eight states of the North East, viz., Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim, the communities of each have their own traditional life style and crafts and enterprises, mainly based on the locally available resources, like, cane and bamboo, handicrafts and utility products, rearing of silk worm and production of yarns and fabrics and pottery to name a few. The people in the region, in general, are accustomed to local resource based development and thereby raise their economy and improve their quality of life at the same time. The economy at the rural level will get a significant boost if the existing technologies of production can be improved in terms of efficiency and productivity and consideration of optimization of cost and energy. While there are many Government and non-Government Organizations and institutions working for the same objectives, the modus operandi of RuTAG mission is to bring all such groups or stake holders together to proactively work for the development of the region so that people can derive the benefits of Research & Development in various scientific fields. To address some of such issues to upgrade rural systems in terms of efficiency/ productivity which will help in boosting the rural economy of the North Eastern Region, a centre of RuTAG was established in the year 2006 under the administrative control of IIT Guwahati in its campus located at North Guwahati. Since its establishment, RuTAG-NE has been working towards attaining its cherished goal by providing S&T interventions in the rural sector of the region for such systems that have already been developed to a stage of functionality and are identified for further development. For example, the traditional process of Eri Silk production is time consuming and laborious. RuTAG-NE has developed a machine which can accomplish a day's work in an hour or so. The machine has been field tested, and a group of artisans and communities are still working on improvement of these machines further. RuTAG-NE has successfully set up a pilot project on production of plain Muga Silk fabric with power loom at the Export Promotion Industrial Park (EPIP) at Amingaon, Guwahati. Muga Silk is supposed to be one of the costliest fabrics in the world obtained from *Antheraea assamensis*, and it is found only in Assam. The golden fabric of Muga is in high demand in foreign countries, like, Japan for making Kimonos. The establishment of the pilot project is a major achievement of RuTAG-NE. RuTAG-NE has also designed and developed a few accessory machines of power loom, like Pirn Winding Machine, Hank to Bobbin Winding Machine and Sectional Warping Machine, which are of lower cost in comparison to what are available in the market, and are now in use in weaving clusters in Sualkushi. Besides, a group of women of Shanti Sadhana Ashram, an NGO of Guwahati, was trained in the production of cost effective sanitary napkin at Gandhi Gram Trust, Dindigul district, Tamilnadu during January-February 2007. The necessary support and coordination for organizing this program was obtained from RuTAG Tamilnadu at IIT Madras, Tamilnadu. The Ashram has been regularly producing and marketing napkins for customers of local population. A major concern of Yak and cattle rearing in the high altitude region in Arunachal Pradesh is the scarcity of fodder during the freezing winter season. Although there is abundance of fodder in the summer rainy season, farmers cannot preserve the same due to nonexistence of adequate storage facility. The National Research Centre on Yak (ICAR) at Dirang in Arunachal Pradesh and NRC on Mithun in Nagaland have acquired a large machine, one each, at Dirang, Arunachal Pradesh and Jharnapani, Nagaland, for Production of compressed feed block fortified with micro nutrients to supplement the feed for Yaks and Mithun respectively during the lean season. This machine has been designed by IARI, New Delhi. It costs around Rs 8-9 lakhs. This is rather too costly for the farmers, and moreover, its maintenance is also difficult. RuTAG-NE has developed a relatively smaller machine as a model which can meet the requirement of groups of farming community/private farms at



affordable cost. The machine developed by RuTAG- NE has scope for further improvement, and it is user friendly at the same time. It has potential scope for use in other regions, particularly in places like Ladakh, Jammu and Kashmir and other Himalayan regions. Another problem which has been plaguing a sizable population of Dhemaji and a few other districts of Assam is the excess of arsenic in drinking water. The element is believed to be a major threat to health of the people of the affected areas. RuTAG-NE has installed Sono-3-filters designed by a group of scientists of Bangladesh and West Bengal, in five potential areas of the district, and has demonstrated the technique of filtration of water contaminated with arsenic in such localities. The Darrangiri banana market in Goalpara District, Assam is considered to be one of the largest banana markets in Asia. The farmers and traders carry bunches of banana on ordinary bicycle to the market from the adjoining areas of Assam and Meghalaya. RuTAG-NE has modified the design of the bicycle, and has developed a more robust and user friendly bicycle for carrying more number of bananas bunches. The vendors can now save additional Rs 150 per day on such a bicycle, and they can also drive the bicycle along with the banana bunches. RuTAG-NE has formed a good network of S&T groups, NGOs, and institutions and Government/ development agencies as well to identify new problem areas and provide necessary S&T interface and interactions. The contributions of the NGOs, ashrams and other collaborators/ stake holders with RuTAG-NE have been significant.

## 1. Coordination with S&T Institutions

RuTAG-NE has created synergy with the following organizations of the region

Assam Textile Institute, Guwahati  
 National Institute of Technology, Silchar  
 Central Silk Board, Guwahati  
 CMERT, Jorhat  
 National Innovation Foundation India  
 DCTSC, Sualkushi  
 BARC, Bombay  
 Assam Engineering College, Guwahati  
 SCSTE, Meghalaya  
 National Research Centre on Yak, Dirang, Arunachal Pradesh  
 National Research Centre on Mithun, Jaharnapani, Nagaland  
 North East Hill University, Shillong Meghalaya  
 Rajiv Gandhi Indian Institute of Management, Shillong, Meghalaya  
 Manipur University, Imphal, Manipur  
 Nagaland University, Kohima, Nagaland  
 Mizoram University, Aizwal, Mizoram  
 North Eastern Regional Institute for Science and Technology, Nirjuli, Arunachal Pradesh  
 North Eastern Institute for Science and Technology, Jorhat

## 2. NGO's Enlisted

Sristi Science and Technology Development Mission, Nagaon, Assam  
 Adarsha Sonali Atma Sahayak Got, Assam  
 Shanti Sadhana Ashram, Guwahati  
 Tamulpur Anchalik Gramdan Sangha (TAGS), Kumarikata, Assam  
 Polygon Foundation (N.E), Guwahati  
 Bethany Society, Tura, Shillong  
 Akruiti, Tripura  
 Mushroom Development Foundation, Guwahati, Assam  
 Kasturba Trust, Tripura



N B Institute for Rural Technology, Tripura  
Global Care Mission, Aizwal, Mizoram  
Regional Research & Training Centre on Indian Traditional Treatment, Golaghat, Assam  
WWWf-India, Arunachal Pradesh  
Bharat Jan Vigyan Jatha, Assam  
Assam Mahila Samata Society, Guwahati  
Assam Science Congress Association  
Society for Socio Economic Awareness and Environment Protection, Nagaon  
ASOMI, Assam  
Adhar, Assam  
Amik Matai Society, Tezu, Arunachal Pradesh  
MIPOGRASS, Aizwal, Mizoram  
SRISTI, Guwahati, Assam  
Deshabandhu Club, Assam  
Gramin Vikash Mancha, Nalbari, Assam  
Ajagar Social Circle, Asaam  
Grameen Sahara, Assam  
Mizoram Science Society, Mizoram  
Tamey Tanang Memorial Society, Arunachal Pradesh  
Manas Ever Welfare Society, Assam  
Pangchen Lumpo Muchat Community, Arunachal Pradesh  
We Care Foundation, Guwahati, Assam  
North East Women Entrepreneurs Association, Dibrugarh, Assam  
Man & Wild, Bijoy Nagar, Kamrup, Assam  
Panchaajayna Gramya Bikash Kendra, Dhing, Nagaon, Assam  
Ajagar Social Circle, Goalpara, Assam  
Pancharatna, Nalbari, Assam  
Social Welfare Organization, Assam

## Activities: Year 2013-2014:

### DESIGN & DEVELOPMENT:

#### Objectives:

RuTAG-NE has been developing continuously a network of S&T groups, Government agencies and NGOs with a goal to provide R&D interventions in rural sector of NE region of the country for such systems that have already been developed to a stage of functionality and identified for further development.

The aim of RuTAG-NE is to upgrade rural systems to most effective levels for boosting the rural economy.

RuTAG-NE would identify new problem areas in rural sector and provide R&D interventions whenever necessary.

#### Approach:

RuTAG has been networking with various S&T oriented NGO/Industry, financial Institutions and R&D groups to identify, formulate suitable project proposals to be funded under RuTAG grant if the expenses involved is small for funding by various agencies and further monitor progress of projects funded under initiative.



**[1]** Scope of S & T intervention in supari business for economic upliftment of rural women

NGO/Institution Associated:

[Assam Mahila Samata Society](#)

Objectives:-

- To improve the tools and equipment of cutting supari so that the production is optimized to its maximum

Introduction:

Dried betel nut selling is a popular business in the districts of Dhubri, Goalpara and Barpeta. It has become a family business for many people and each of the family members including children are involved in cutting the dried betel nut, locally called supari, into small pieces with the help of a sakta (cutter). The presently used tool (sakta) for cutting supari is a traditional method. This requires more time and the output is very low, hence the efficiency is very poor.



**[2]** Development of Solar Assisted Aerator for fish farmers of NE India

NGO/Institution Associated:

[Ajagar Social Circle, Goalpara, Assam](#)

Most of the present day aerators used in fish ponds are located in the rural areas where these are either operated by diesel pump or electricity. Electrically operated aerators mounted with 2 HP motor when runs for about 4-5 hours a day in the wee hours add additional rupee in the cost of production which otherwise should remain at low level. Unlike fishing boats operated in coastal waters, fish farmers who run diesel operated aerators do not receive any subsidized diesel from Govt. and with the increase in fuel price hike, the operating cost of such aerators have gone high.



### Workshop cum demonstrations of Potters Wheel

- ▶ On 26th October SWABHIMAN The Power of Society in association with RuTAG-NE organized a workshop in Purnakundum village of Nalbari
- ▶ 40 local artisans participated in the workshop



## Gramya Prayukti: Technology for Improving Rural Life

(3 days exhibition organized by RuTAG-NE)

- ❖ Besides our own participation RuTAG-East, RuTAG- Tamilnadu, NIF - India and 5 NGOs of the region participated in the exhibition
- ❖ 40 technologies were displayed
- ❖ Modified Bicycle of RuTAG-NE was the centre of attraction of the exhibition
- ❖ Highly appreciated by local and national media
- ❖ More than 100 entrepreneurs shown their interest to work with us





## Demonstration of Pottery Wheel

In association with SWABHIMAN The society of Power RuTAG-NE has organized one demonstration program in Dharam deka suwali high school, parchim pakua, Bahjani Nalbari on 1st March, 2015





- ❖ Three day training program in Purnakundum Village of Nalbari
- ❖ Demonstration at Nagarbera, 130 Km from Guwahati
- ❖ Demonstration at Kumrikata, Nalbari
- ❖ Eight more cluster has been identified in and around Nalbari districts.

\*\*Modifications of potter's wheel to suit local artisans of North East is on progress

### Technology transfer to Eri cluster

One new technique for extraction of knitting yarn, with the objective of developing diversified products from Eri cocoon developed by Mr. Dulal Choudhary has been in different places of Assam





## Improving Societal living standard

Some of the works that were taken up by Prof. A.K.Sarma and his team to improve living standard of our society are listed below:

### Description of the work

#### Ecofriendly measures for protecting villages located on river bank:

Loss of land and properties due to devastating bank erosion by Brahmaputra and its tributaries is a chronic problem of the Northeast region. IIT Guwahati in association with Polygon Foundation, an NGO of Assam, has successfully protected an erosion affected reach of Dikrong River by applying bio material and plastic net through financial support of NEDFI.

### Some Photograph



Layers of plastic net



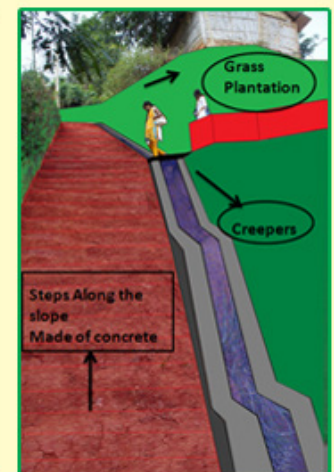
Stable bank

#### Developing Himalayan Habitats through Ecological Management Practice(EMP):

Unplanned habitation associated with large scale deforestation witnessed in Himalayan Habitats has led to increased soil erosion from the hills and its subsequent deposition in the water ways has aggravated the problem of flash floods in the downstream area. The city of Guwahati is also experiencing multiple hazards because of unplanned development in its surrounding hills. Garbhanga village covering about 0.17km<sup>2</sup> is one such degraded hilly area, for which IIT Guwahati has developed a pilot project of applying the concept of Ecological Management Practice (EMP), which aims at developing hazard free, economically sustainable and ecologically balanced habitat area. Pending committed implementation by GMDA, some of the residents have initiated implementing the concept of their own.



Existing Situation



Proposed EMPs

#### Prioritizing drainage planning for hazard free India:

Lack of long term drainage planning with due consideration to social need, climate change and future development is the prime cause of urban flooding. Therefore, we are emphasizing proper drainage in semi-urban area, as implementation of an adequate drainage in a later stage become much difficult. With support of local people from Bamundi and with a formal request from their Gaon Panchayat detail drainage planning was made. The plan is yet to be implemented due to fund constraints.



Area with no drainage



Drainage Plan

## Tourism potential of Mawlynnong, cleanest village of Asia



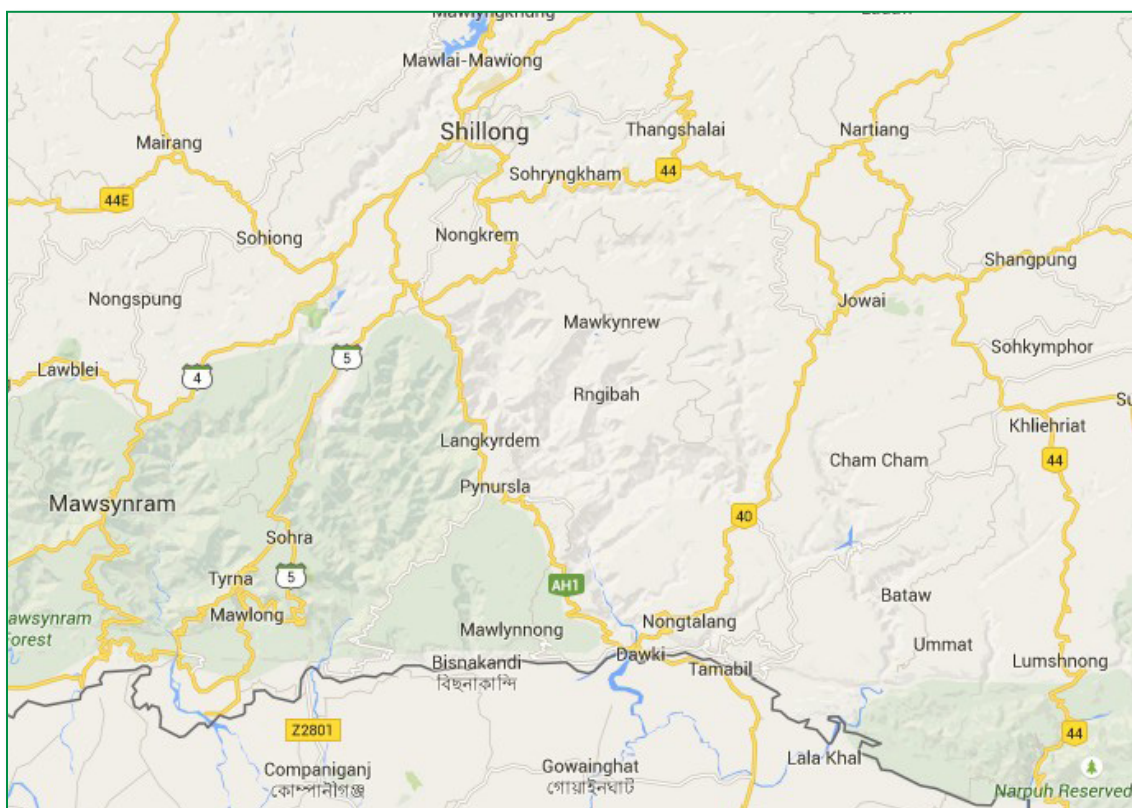
Prof. Pinakeswar Mahanta and his team has been involved in the improvement of tourism in Mawlynnong cleanest village of Asia.

**Mawlynnong** is a village in the East Khasi Hills district of the Meghalaya state, India. It comes under the Pynursla community development block and Vidhan Sabha (legislative assembly) constituency. This village has earned the distinction of being the **cleanest village in Asia (Year 2003) as well as in India (2005)** (The travel magazine Discover India).

### Location:

Mawlynnong is located 90 km from Shillong and 92 kms from Cherrapunjee, along the India-Bangladesh border and can be reached by road.

It's Coordinate is: 25°11'59"N 91°55'54"E





## Brief

- (1) As of 2014, there are about 95 households in Mawlynnong.
- (2) The literacy rate is 100%.
- (3) The main occupation of the villagers is agriculture. They mostly grow betel nut.



Mawlynnong's fame is now drawing an endless stream of guests from across the country and abroad. Residential facilities are scarce, the existing one constructed from bamboo and thatch. There is a scope for improvement of tourism.



The village is quite pretty, especially in the monsoons when there is lush greenery all around, with waterfalls paving the way to small streams and abundance of flowering orchids dangling from the trees and hedges add to the beauty of the village.

### Potential

The village offers picturesque natural beauty, a trek to the living root bridge at a neighbouring village Riwai. The village also offers a sight of natural balancing rock, a strange natural phenomenon of a boulder balancing on another rock.

Disposal and use of biodegradable waste is another requirement of the village. Improvement of traditional houses may be also looked into.





Another interesting feature not to be missed is the “Sky Watch.” This 85 feet high bamboo structure created with bamboo and natural ropes offers a lovely view of the Bangladesh plains. However, tourism requires improvement.

Steps are to be taken by IITG:

1. The waste of the village will be used for vermi-composting which will improve the soil quality and growth of flowers and same can be a business model for the villagers.
2. Improvement of tourism in the village.
3. Zero emission houses.



# **National Service Scheme**

## **Indian Institute of Technology, Guwahati**

### **Report of NSS activities**

**(During the academic year 2014-15)**

**From August 2014 to April 2015**





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# **SECTION – A**

## **(REGULAR ACTIVITIES)**

# **Clothes Collection Drive**

## **(August 9, 2014)**



Clothes and other needy items were collected from the students, faculties and the staff members of IIT Guwahati. All this was done by the volunteers and the organizing team of NSS, IIT Guwahati. Volunteers collected clothes from 572 faculty members and staff quarters. All of them contributed whatever they could spare. These clothes were to be distributed later to the needy people of Sila Sindurighopa village of Assam.

# Mega Plantation Drive

## (August 15, 2014)



Students, staff, and faculty including the Director of IIT Guwahati together and planted saplings at different places inside the campus on Independence Day. A total number of 163 saplings were planted all around the campus. It was a joyful day, to plant new life on earth.

The benefits for humankind by this are:

1. Of course, trees are beautiful. They make our beautiful campus even lovelier.
2. Trees prevent soil erosion.
3. They provide food for us.
4. Trees provide oxygen and fresh air.
5. Trees are carbon dioxide sinks.



6. They have high medicinal values.
7. They help in preventing water pollution.
8. Trees provide a canopy and habitat for the wildlife inside our campus.
9. Lastly, humans can't exist without trees.

Some more pictures of the eventful day:





# Clothes Distribution Drive

## (August 16, 2014)



NSS, IIT Guwahati pulled off the mega event of clothes distribution at Sila Sindurighopa village, Guwahati on in the presence of NSS faculty coordinator, Chairman of the Welfare Board, Chairman of the Sports Board, and a PT Instructor. What an experience it was! We distributed these clothes and other needed household items to families living in around 110 houses. Apart from this we also distributed items necessary for school to approximately 200 kids. Of course we gave them chocolates too! The smiles on the kids' faces were priceless!

# Online Photography Contest

## (August 20 – 25, 2014)



On the World Photography Day, NSS IIT Guwahati conducted an online photography competition which was open to all people of the campus. The theme of the competition was “Transcend - Surpass the limits”. Exciting prizes worth Rs.2000 were awarded to the winners of the competition.



# Blood Donation Camp

## (September 5 – 7, 2014)



The National Service Scheme (NSS), IIT Guwahati, in association with Techniche, the annual student organized techno-management festival, has organized a blood donation camp in the college premises from 5th of September to 7th of September. It is said “If you are a blood donor, you are a hero to someone, somewhere on Earth who received your gracious gift of life”. This camp also pressurized the need to create awareness among youth for active participation in such a noble cause. At the end, all that mattered is the satisfaction that a life will be saved by a gesture from you!



# Campus Cleanliness Drive

## (September 12, 2014)



The NSS unit of IITG successfully organized campus cleanliness drive to clean the academic complex area and its surroundings. The NSS Team along with the NSS coordinator cleaned the academic complex (Core 1 to 4) in the best possible way they could. There was a significant change after this drive. The main purpose of this drive was to get visibility and make people think of the need and cause of cleaner surroundings. Students carried out the cleanliness drive for over two hours. Later they took the pledge to maintain cleanliness and also spread awareness to keep the campus clean.

# Paper Collection Drive

## (September 28, 2014)



It's the end of the mid semester exams in IITG and NSS-IITG has used this opportunity for a better cause. There was a paper collection drive held in the campus and NSS volunteers collected used papers and notebooks from students who no longer have any use with them. The papers and books that have been collected were sent to recycling. New notebooks will be made out of them and they will be donated to the poor and needy children in the nearby villages.

# Swachcha Bharat Abhiyaan

## (October 2, 2014)

Our honorable Prime Minister announced the launch of the clean India mission known as the “Swachcha Bharat Abhiyaan” on 2nd October 2014. Responding to that call, the Director of IIT Guwahati launched the Swachcha Bharat Abhiyan at IIT Guwahati on October 2, 2014.



NSS IITG planned the clean campus mission in which a large number of faculty members, staff and students participated. The work was nearly done for about 3 hours in the morning after which the participants of the mission were provided with refreshments.



This was a basic initiative for all of the Indians to realize the importance of cleanliness of our nation.

Some more pictures of the important day:



## Veterinary Camp

Date : 12.09.15

Venue : Rajaduar, Kamrup Rural, North Guwahati, Assam.  
Time : 10 a.m – 3 p.m.  
No. of Beneficiaries : 34 persons, total 223 animal including Cattle, Goat, Dog and Poultry

Animal Health Check-up Camp 12-9-2015... some snaps.....







On 12<sup>th</sup> September 2015 an animal health camp checkup was held at Rajadur, Kamrup Rural, North Guwahati and was successfully conducted under Unnat Bharat Abhiyan of Indian Institute of Technology Guwahati. Early morning vaccination was given to cattle and goats. The vaccines are given for foot and mouth disease and hemorrhagic septicemia. The clinical cases were treated with antibiotics, anthelmintics, antihistamines and multivitamins. Other animals include goat, dogs and poultry which were also vaccinated and treated accordingly. A total of 34 owners were benefited by treating 234 animals. Dr Sameer Phukan and his team for the North Guwahati veterinary dispensary actively participated in the vaccination camp. We thank Dr. Amit, Dr. Krishanu, Dr. Sanghamitra and Dr. from Khanapara veterinary college for their assistance in the camp. We would like to extend the sincere thanks to Dr. Monika Koul for her help in organizing the event.





## Engagement of Water Quality Research group of IITG led by Prof Chandan Mahanta in rural drinking water sector of Assam

For nearly a decade, the water quality research group of Indian Institute of Technology Guwahati (IITG) have played a major role in the rural drinking water sector in Assam. Following a rapid assessment for drinking water quality in 2005, it was decided to have a joint partnership to facilitate the Public Health Engineering Department (PHED) in successful implementation of sustainable drinking water security in rural areas in Assam. The partnership initiated with the Arsenic Screening and Surveillance Program in Assam covering the period 2005-2011. The study was carried out in 76 blocks in Assam pre-identified through a rapid assessment study. Arsenic analysis and database management was performed in a chain of five Rural Laboratories and a State Referral Laboratory set up under the comprehensive Arsenic screening and surveillance program and facilitated by the joint partnership of the UNICEF, IITG and PHED. Necessary technical and managerial support for operationalizing these laboratories were provided by IITG, including required training, capacity building, inventory management, trouble shooting, supervision, quality control and verification and confirmation of accuracy and precision of analysis in AAS. Based on a three tire testing protocol adopted, 29% sources of a total 56,180 sources tested was found to be above WHO limits of 10 ppb and 8% sources above 50 ppb, an estimated population of 7, 22,603 were estimated to be exposed to the risk of arsenic contamination in a 1970 habitations spread across 76 Blocks in 18 Districts out of a total 27 Districts in Assam. 794 sources exhibiting concentrations above permissible limits were found to be located in different schools. The formulation of Water Quality Task Force for Assam was a major outcome of the program and the joint UNICEF, IIT-G, PHED partnership.

With our gradual interventions on the arsenic screening and surveillance program, the greater need for monitoring and assessing the overall water quality aspect was felt and the Water Quality Task Force for Assam was formulated.

Following the arsenic monitoring and surveillance program, the water security Pilot Program in Assam during 2011-12 was initiated in line with the NRDWP guidelines, wherein water security 24x7 in rural areas was the focus. The WSPP was implemented in six selected districts viz. Golaghat, Tinsukia, Jorhat, Dibrugarh, Sibsagar and Kamrup in Assam. Decentralization, community involvement and equity were the key objective of the program. Subsequently, a report on the assessment of Water Supply and Safety Scenario in Assam; a study conducted in five Districts viz. Cachar, Udalguri, Sonitpur, Jorhat and Kamrup in Assam was developed under the partnership. The study brought to light some of the pertinent issues relating to the drinking water supply and safety scenario in Assam.

Despite setbacks and inherent challenges, the UNICEF-IITG-PHED partnership was successful in achieving some of key milestones during the cycle spanning from 2005-2012, and IITG was instrumental in bringing in these outcomes,

The key outcomes of the IITG-UNICEF\_PHED partnership are listed below,

### 1. Arsenic Monograph

Based on the objectives and outcomes of the Arsenic Screening and Surveillance Program in Assam, IITG provided all necessary technical support for preparation and publication of the Arsenic Monograph. This monograph for the first time displayed the arsenic contamination and distribution scenario in Assam.

### 2. Lab. strengthening

Through a series of continuous, intensive and focused workshops and training programs, IITG provided support for upgradation and strengthening of the Rural Laboratories, Divisional, Sub divisional and the State Referral Laboratory at Betkuchi, Assam during 2005-2013. The primary objective was capacity building of the people involved in laboratory analyses and management along with ensuring smooth functioning of these laboratories. IITG project team made regular visits to each of these laboratories for troubleshooting and providing technical advice as regards sample collection, water quality analysis and laboratory functioning. The importance of the need to disseminate the results to communities and corrective measures to be adopted for contaminated sources was also suggested during all such visits.



Fig. Lab analysts conducting water quality measurements in district level laboratories

### 3. Sectoral Assessment of Water Quality Scenario in Assam

As part of the World Bank sponsored piped water supply schemes for four districts viz. Kamrup, Jorhat, Sonitpur and Hailakandi districts of Assam., IITG project team facilitated in preparing the report on the Sectoral Assessment of drinking water supply and safety scenario in Assam. Field surveys were conducted to verify the status of existing piped water supply schemes and drinking water sources viz. Shallow hand pumps (SHP), Tara pumps (TP) and gauge issues hindering supply of safe drinking water. The report highlighted some of the apparent strength and some of the existing constraints hindering the rural water supply program in the state of Assam and facilitated APHED is getting a comprehensive overview of the drinking water scenario in the state of Assam.

### 4. Water Security Pilot Program (WSPP)

In line with the NRDWP guidelines, the WSPP in Assam was facilitated by UNICEF Assam, IIT-G, PHED Assam, with the involvement of Gram Panchayats and Jal Surakshaks (village volunteers). This 15-month



programme covered 12 blocks (2 blocks per district) in 6 districts, covering 154 gram panchayats and 200,000 households keeping women and community at the core of the implementation process. It was designed to ensure community mobilization in order to ensure 24 x 7 water supply and equitable distribution. The programme ensured strengthening water quality surveillance by setting up institutional mechanisms for the same. The activities undertaken included: Laboratory Upgradation and Capacity Building, Sanitation survey, Community mobilization by NGOs, Preparing village action plans (with community participation), etc. Outcomes: As of December 2011, 980 out of the target of 1,331 Village Action Plans (VAPs) covering 154 GPs were completed. Six district level laboratories were upgraded with state-of-the-art equipment and made functional. Thirty laboratory personnel were trained on water quality testing.

### 5. Laboratory Benchmarking

Benchmarking of rural and district level laboratories upgraded under the UNICEF-IITG-PHED partnership during 2011-13, along with a few selected laboratories that were to be upgraded was conducted in 2013. IITG team provided necessary field support including questionnaire preparation, orientation workshops, surveys, lab visit for inspection and report preparation. The report highlighted the gaps and bottlenecks hindering smooth functioning of some of the water quality laboratories was prepared and published. Strategies that ensured smooth and effective laboratory functioning were integrated into the report.

### 6. Laboratory Protocol

A laboratory protocol based on the life cycle approach. ie. sample collection, analysis/findings dissemination of results to the communities and suggestion of corrective action was published and circulated to all APHED owned district and sub divisional laboratories in Assam.



Fig. Water Quality laboratory protocol for district and state level laboratories in Assam

### 7. Pre-Monsoon Preparedness Campaigns

To facilitate monsoon preparedness for safe handling and management of drinking water sources, IITG project team facilitated and supported the pre- monsoon preparedness campaigns across the state, particularly in tea garden areas, in partnership with PHED Assam and UNICEF. IITG

team provided support in development of Information Education and Communication (IEC) materials along with planning and ensuring successful implementation of the campaigns.



Fig. Onsite measurements of drinking water samples conducted during the Pre Monsoon Preparedness campaigns



