A Report on

उन्नत भारत अभियान IIT (BHU), Varanasi, India

A transformational change in rural development

"असली भारत गांवों में बसता है" -Mahatma Gandhi

Prof. B.N. Rai (Coordinator)

Dr. R.K. Chaturvedi (Associate Coordinator)

UNNAT BHARAT ABHIYAN

"If we have to build a nation, we should start from the villages"

– **Sri Narendra Modi**
(Honorable Prime Minister of India)

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"Institutes of higher learning must be connected to villages"

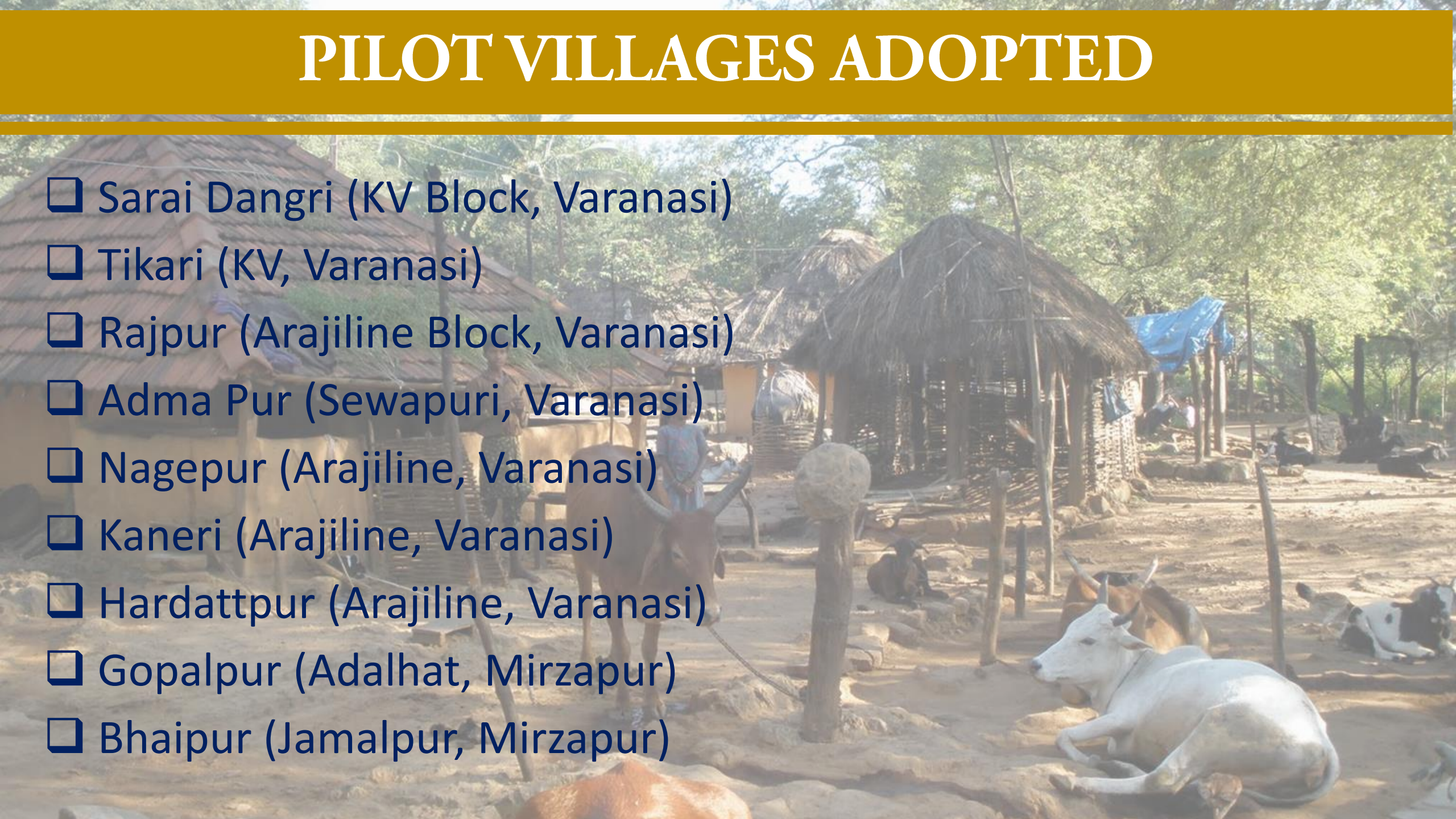
- **Smt Smriti Zubin Irani**
(Minister HRD, Government of India)

Vision and Mission

IIT(BHU) is involved in counselling and providing the necessary technical inputs to the villagers specially youngsters for:

- Rain water harvesting
- Drinking water quality
- Counselling for sanitation and hygiene
- Forestation
- Vermicomposting
- Adult education
- Decentralized gasifier
- Maintenance of electronic equipment
- Up gradation of ITI and Diploma holders
- Preservation and promotion of rural crafts
- To identify the need of villagers and take their inputs on the issues
- Storage, package of local food(fruit, grains, vegetables, etc.) : value addition
- To connect the local small industries and suggest methods for better efficiency

PILOT VILLAGES ADOPTED



- Sarai Dangri (KV Block, Varanasi)
- Tikari (KV, Varanasi)
- Rajpur (Arajiline Block, Varanasi)
- Adma Pur (Sewapuri, Varanasi)
- Nagepur (Arajiline, Varanasi)
- Kaneri (Arajiline, Varanasi)
- Hardattpur (Arajiline, Varanasi)
- Gopalpur (Adalhat, Mirzapur)
- Bhaipur (Jamalpur, Mirzapur)

The following projects are in progress under Unnat Bharat Abhiyan

1. Identification of guilds and small scale industries in Nagepur, Kaneri to explore the possible means for improvement of efficiency.
2. Studies on the potable water quality of Tikari (KV Block) and its impact on health.
3. To study the potable water quality in and around Sarai Dangri.
4. To identify the possible areas for rain water harvesting in Tikari.
5. Counselling for sanitation and hygiene in Gopal Pur (Adalahat).
6. To study the quality of water of all the hostels of IIT(BHU) at entry point.

Operations

OUTCOMES

To check the potable water quality in and around Sarai Dagri

- Sarai Khurd village
  Water is hard and alkaline. Fluorine content is more than desirable limit in most of water sources in area.
- In Bhagautipur,
  water is very alkaline and moderately hard.
- In Dhobi Basti
  water is very hard, hardness exceeds 500 ppm.
- Yadav and Gupta Basti of Tarapur
  The quality of water very bad. It is very hard, alkaline, turbid and have very high concentration of sulphates and chlorides.
- In Ladauni, Mushar and Patel Basti
  water quality is moderately hard but other properties are in desired limit.
- In Mallah Basti
  water is hard, alkaline and turbid.

Mentor: Dr. SK Mishra
Department of Pharmaceutics

Study of potable water quality in Tikari (KV Block) and its impact on health

Mentor: Prof. KK Pandey
Department of Civil Engineering

OUTCOMES

- Hardness and alkalinity are at an alarmingly high range in this village, which may have an adverse effect on health in near future.
- TDS was within range except a few alarming zones. Precautionary measures should be taken immediately.
- Iron and Chromium are not observed in significant amount.
- Flourides are within the normal consumption range of water. Chlorine do not pose a threat in this area.
- At most places turbidity is low with a few high ranges. Post monsoon increase is due to soil runoff.
- COD is also high in most of the places. Though the monsoon has reduced the COD level in most part of the village, it is still a matter of great concern. It may accelerate algae bloom in water bodies.

To identify guilds and small scale industries in Kaneri and Nagepur and to explore the possible means for improved efficiency

OUTCOMES

- This report shows the conditions of existing guilds and SSI's in the Kaneri and Nageour villages.
- The economic condition of the people in these villages is poor which ca be improved by strengthening of the guilds and SSI's.
- The major problem faced by these businesses like ornament threading and handloom weaving which can be made successful made coming up together of people with similar interest. But, because of their differences they deny for a new venture.
- These problems can be addressed when people come together for their and society's benefits.
- Government help and appreciation to these businesses can help them grow.

Mentor: Prof. KK Pandey (Civil Engg.),
Dr. P Bhardwaj (Mechanical Engg.)

Counselling for sanitation and hygiene in Gopalpur

OUTCOMES

- There are mainly three types of people on the basis of family income:
  I. Upper cast people
  II. Middle cast people
  III. Lower caste people
- The condition of sanitation and hygiene is not good.
- Steps and suggestions from our side :
  I. Creating social awareness program about sanitation and hygiene in the village.
  II. To arrange a talk along with tehsildar and gram Pradhan for the improvement of water facilities and toilet condition in the village.

Mentor: Prof. RS Singh
Department of Chemical Engineering

OUTCOMES

To identify possible areas for rainwater harvesting at Tikari village

- This project is about how rain water can be stored & it can be used in many ways for required purposes (by suggested engineering models).
- Takari village can be divided into seven parts:
  Kashipur, Nonhiyapur, Dheravir, Naimaliya basti, Harjan basti, Kiskindhapur, Main tikari basti
- This project fulfills the need of villagers in the following manner:
  i. To overcome the inadequacy of surface water to meet our demands.
  ii. To arrest decline in ground water levels.
  iii. To enhance availability of ground water in a specific place.
  iv. To improve ground water quality.
  v. To increase agriculture production and ecology.

Mentor: Prof. Rajesh Kumar, Prof. KK Pandey
Department of Civil Engineering

Study on the quality of all the hostels of IIT (BHU)

Mentor: Prof. BN Rai
Department of Chemical Engineering

OUTCOMES

- It is always important to be assured of the water we consume. The tests do add to this assurance.
  - pH change,
  - Acid-base equilibrium
  - COD values
  - Turbidity
  - Chloride ion concentration
  - Fluoride ion concentration
  - TDS values
  - Heavy metal presence
  - Electrical conductivity of water were tested.
- It was found that he quality of water being supplied in the hostels is quite suitable for consumption baring a few minor glitches, which obviously can be ignored.
- The study only considered physio-chemical parameters.

Department of Ceramic Engineering IIT (BHU)
presents

Low Cost Clay Water Filter

under **Unnat Bharat Abhiyan**

Inspired by :
Prof. B.N Rai (Chem. Engg.)
+91 - 9450533441

Designed by :
Dr.R.K Chaturvedi (Cer. Engg.)
+91 - 9415863340

Poster by :
Shyam Sharma
IVth IDD (Cer. Engg.)

Potter by :
Shiv Dhani
Lohata, VNS

A bit of Introduction

This filter is completely made of clay, which not only removes dirt, suspended solids and bigger pathogens but also cools the water naturally. Finally, this provides clean, safe and cold water.

परिचय

यह फिल्टर पूरी तरह से मिट्टी का बना है, जो केवल गंदगी, निलंबित ठोस और बड़े रोगजनक कीटाणुओ को ही नही निकालता है बल्कि पानी को प्राकृतिक रूप से ठंडा करता है । यह फिल्टर स्वच्छ, शुद्ध और सुरक्षित पेयजल उपलब्ध कराता है ।

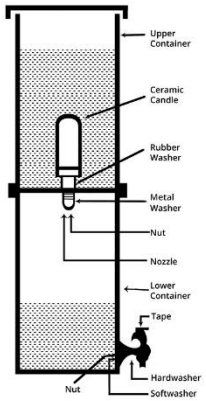
Lower storage container

Fixation of candle in Upper Container

Cover plate

Advantages

1. Cheap, simple and easy to use and provides clean water.
2. Removes pathogens, turbidity and suspended solids.
3. Maintain natural taste.
4. Can be easily constructed with locally available material with the help of a potter.
5. Keeps water natural cool and safe.
6. Durable, easy to handle and transport.



Internal Filter Mechanism

लाभ

1. सस्ता , सरल और प्रयोग करने में आसान और साफ पानी उपलब्ध कराता है ।
2. रोगजनक कीटाणुओ, मैलापन और निलंबित ठोस निकालता है ।
3. प्राकृतिक स्वाद बनाए रखता है ।
4. एक कुम्हार की मदद से स्थानीय स्तर पर उपलब्ध सामग्री के साथ आसानी से निर्माण किया जा सकता है।
5. पानी प्राकृतिक और सुरक्षित रखता है।
6. टिकाऊ, संभालने में आसान और लाने लेजाने में सुविधाजनक है।

Maintenance and Care : First, candle should be kept in hot water for five minutes and then be rubbed mechnically (with brush) and finally wash with fresh water in a fortnight or month for better results

Thank You