



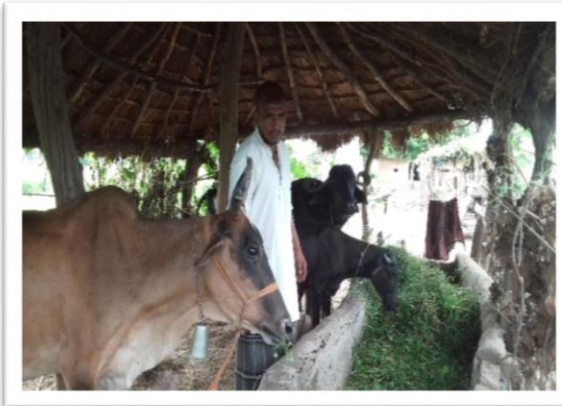
Government of India
Ministry of Human Resource Development

IIT Delhi
Coordinating Institute

उन्नतभारतअभियान UNNAT BHARAT ABHIYAN

स्वस्थ भारत- स्वच्छ भारत- स्वावलंबी भारत- संपन्न भारत
विज्ञान एवं प्रौद्योगिकी आधारित ग्रामीण विकास कार्यक्रम

VILLAGE DEVELOPMENT PLAN FOR NAURANGABAD,
PANCHAYAT- GANDIKHATA, BLOCK- BAHADRABAD,
HARIDWAR, UTTRAKHAND
INDIAN INSTITUTE OF TECHNOLOGY DELHI
December 2017



शिक्षित भारत- स्वस्थ भारत- स्वच्छ भारत-
स्वावलम्बी भारत- संपन्न भारत- स्वाभिमानी

जैविक उत्पाद
Organic
Agriculture

जल प्रबंधन
Water
Management

वैकल्पिक उर्जा स्रोत
Alternate Energy
Sources

कारीगर और ग्रामीण उद्योग
Agriculture and Rural
Industry

मूलभूत सुविधाएँ
Basic
Amenities



Village Development Plan

Centre for Rural Development Technology (CRDT)

Indian Institute of Technology New Delhi

Unnat Bharat Abhiyan (Introduction)

Conceptualized by a group of dedicated faculty members of Centre for Rural Development and Technology, IIT Delhi, Unnat Bharat Abhiyan (UBA) is a flagship program of Ministry of Human Resource Development (MHRD) Govt. of India. UBA aims to bring a transformational change in rural development by active participation of higher academic institutions with local communities, and reorientation of curricula and R&D design of knowledge Institutions. IIT Delhi has been designated to function to lead and coordinating organization for UBA activities in the country.

The Mission of Unnat Bharat Abhiyan is to enable participating 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.

Under the UBA program all Participating Institutes are adopting a cluster of five villages in consultation with Districts Collectors. A letter in this regards has already been circulated to Districts Collectors by MHRD. IIT Delhi is also adopting a cluster of villages namely (1) Gaidikhata, (2) Ahmedpur Chiriyapur, (3) Naurangabad, (4) Lahadpur and (5) Gujjar Basti, in Haridwar District. In these villages we will work with Surbhi Foundation who is already working in these villages. Dr. Vivek Kumar Associate Professor IIT Delhi is Coordinator for this cluster of villages from IIT Delhi.

A village development plan (VDP) is a plan outlining the desired developments according to the inhabitants – for the quality of life within the village and in the immediate surroundings. A VDP Identifies issues affecting the community – social, environment and economic. It's a

statement about how a community sees itself developing over the next few years and what actions are needed to realize that vision.

1. Objectives

Based on the preliminary interactions with the villagers and the district/block administration, the objectives of the work to be carried out by the IIT Delhi team in this village was defined as follows:

- To increase productivity by cropping intensity and change in cropping pattern leading to higher production and productivity,
- To improve socio-economic conditions, create livelihood opportunities and increase food security & well-being of the poorest of the poor,
- To ensure effective participation of the villagers for the holistic development of the village Naurangabad by preparing an Integrated Development Plan for the sustainable development of the village using eco-friendly sustainable technologies and local resources, creating sufficient employment opportunities in the process, harnessing multifarious Govt. Schemes,
- To empower the women through active participation in decision making process, increase income and access to resources,
- To liaison with district administration and panchayati raj institutions to help them to prioritize the fund allocation to various developmental activities and provide necessary inputs on technologies to be implemented in the field.

2. Methodology

In order to meet these objectives an overall integrated approach is required along with the quality input from various experts from different fields of knowledge. The steps involved in the same can be enumerated as follows:

(a) Identification of the areas in which IITD can provide technical inputs along with the key experts who will be part of the team.

(b) To conduct primary survey (Village level survey, Household Survey, Rapid Rural Survey, Participatory Rural Appraisal) and collection of secondary information required for preparation of the plan followed by analysis of data.

c) The present scenario as derived by analysis of the primary and secondary data will now be presented to the Gram Panchayat and the Gram Sabha.

d) A participatory mechanism will be adapted for finding out the issues and potential of the village by considering the feedback from the villagers by conducting series of meeting with the villagers.

(e) This will be followed by integration of all these components to prepare an integrated village development plan with a focus on enhanced agricultural productivity, eco-friendly sustainable technologies and local resources creating sufficient employment opportunities and ensuring the empowerment of the different social group.

(f) The identified key expert from IITD team will be involved in providing the technical support in implementation of this plan, like, preparation of cost estimates, technical specifications in tenders, selection of the supplier, being part of the team to oversee the work to ensure compliance with the specifications.

(g) After implementation of the plans in each component, the IITD team will also provide support in monitoring and evaluation of the same by guiding the technical personnel who can be hired by the Panchayat. IITD team will also help these technical nodal personnel in preparing the monitoring and evaluation report.

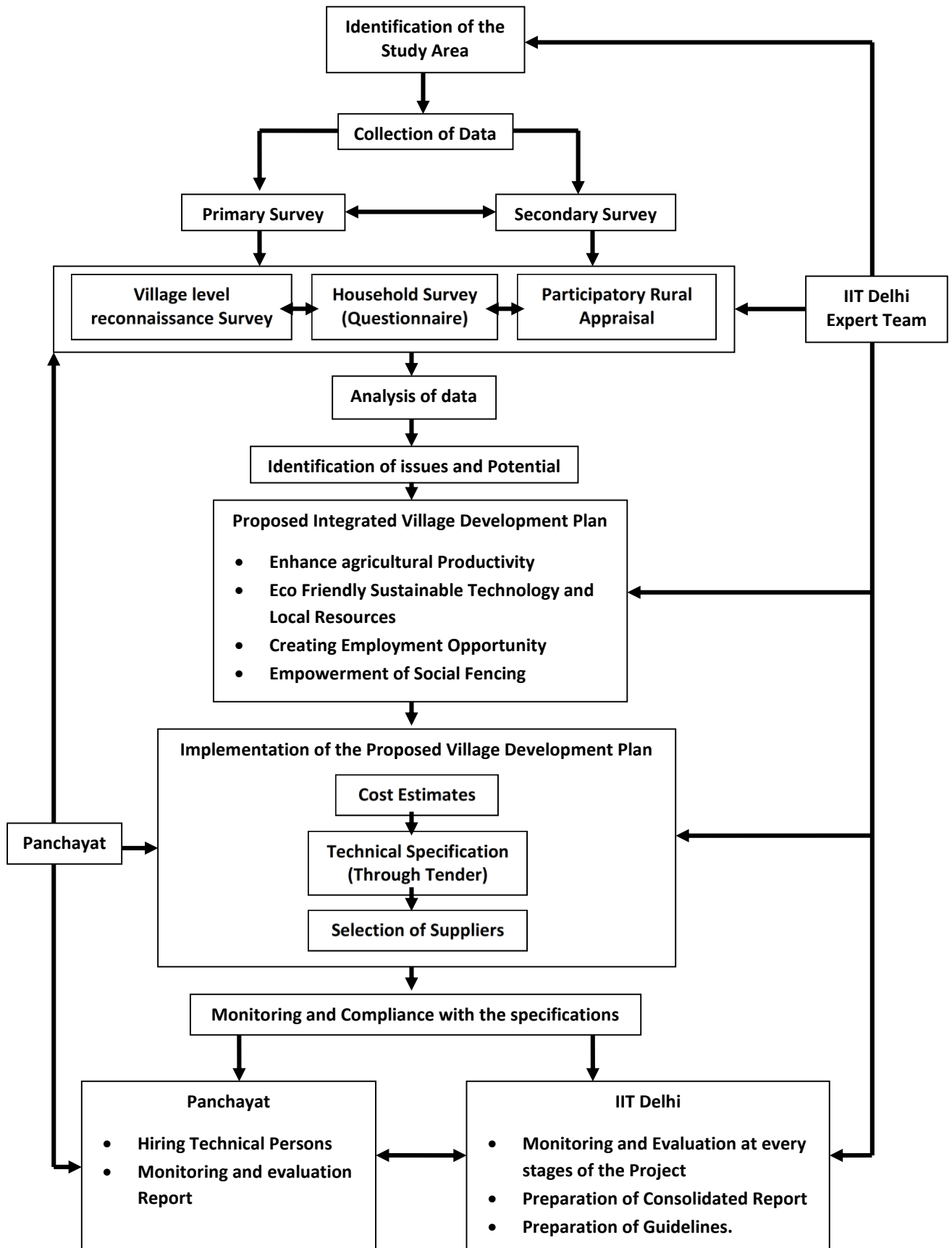
(h) Subsequently, a consolidated report will be prepared of all the experiences of the IITD team related to the development work in the village Naurangabad followed by preparation of guidelines for participation of any technical institute in the development of a village

3. Steps of preparing Village Development Plan:

- Identification of the village and key persons for knowledge input
- Social Mobilization through hamlet meeting and village meeting.
- Conducting primary survey and secondary data collection
- Analysis of data, identification of problem, issues and potential
- Interaction with the villagers and conducting Participatory Rural Appraisal (PRA) for the feedback
- Identification of agricultural mechanism for enhances productivity, available traditional technique for employment generation, increasing rural livelihood, improvement of basic facilities and improvement of quality of life.

- Obtained input from the key persons and preparation of integrated village development plan.

METHODOLOGY - FLOW DIAGRAM



The steps are elaborated as follows:

(i). Village Name: Naurangabad, Panchayat- Gandikhata, Block- Bahadrabad, Haridwar, Uttarakhand (U.K.).

Gandikhata Panchayat is adopted by Indian Institute of Technology Delhi under Unnat Bharat Abhiyan (UBA) and Naurangabad is one of the revenue villages of this Panchayat. In order to achieve the goals and vision of Unnat Bharat Abhiyan it is needed to prepare a Village Development Plan (VDP) so that the objective of UBA can be implemented in the Naurangabad village in systematic way and in mission mode.

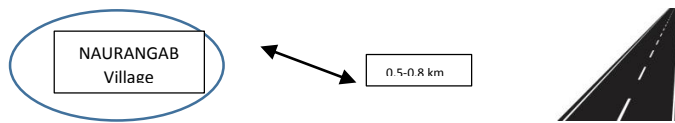


Fig (3): The village is located at a distance of about 0.5-0.8 k.m from NH-74.

How to reach village Naurangabad

Naurangabad is one of the revenue villages of Gandikhata Panchayat, Bahadrabad Tehsil in Haridwar District of Uttarakhand State. It is located in just 25 K.M. away from Haridwar Railway station and 35 KM away from Bahadrabad Bus stop, 74 KM from State capital Dehradun and less than 1 km away from National Highway – 74 (Haridwar to Najibabad). The village is located close to two major water sources of Uttarakhand East Ganga canal and Rwasan River. A modest population of 430-450 people lives in this village.



Fig (1): Naurangabad Village Aerial View

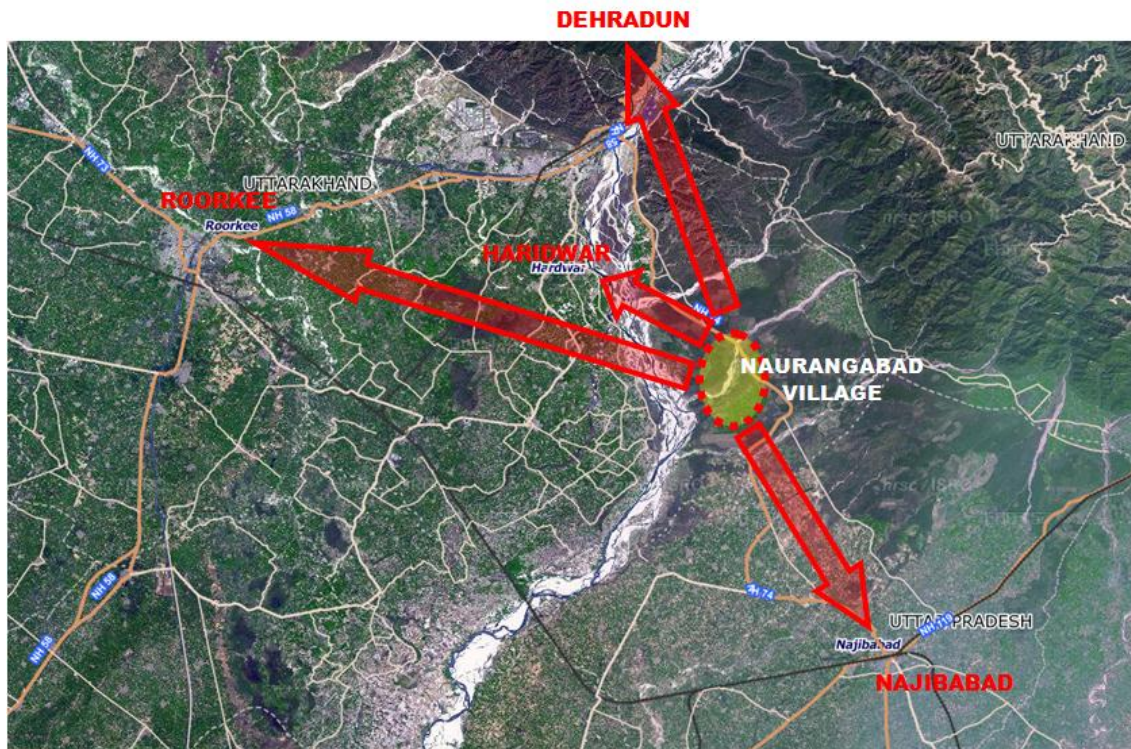


FIGURE 2: LINKAGES OF NAURANGABAD VILLAGE

(ii) Social Mobilization through hamlet meeting and Village meeting

At first, a hamlet and village meeting were held for discussion of UBA objective and plan. All villager, irrespective of gender and caste participated and provided their valuable inputs. After this reconnaissance survey, village level and house hold survey were conducted for collection of basic information and problems of the village. While conducting household survey patch visit were done at different locations of the village. In this village nature has given a lot, specially forest and river resources, but most of the families of this village are landless. They earn their meagre livelihood as unskilled labour work. The farmers grow cash crop (sugarcane), horticulture and paddy crops. As per the feedback received from the villagers the main problem of the village is wild animal, specially elephant and monkey who eat and destroy their crops. Specially some of the families whose main occupation is sharecropping this become a serious problem for them.

In Naurangabad village Rwasan River play a very important role for this village where most of the unskilled labourers get work in sand mining. Basically after five years in the month of October 2017, Govt. has given permission to sand mining. When mining activity is closed in Rwasan River, all these informal working population of this village face unemployment problem. In Naurangabad village every household has their own hand pump for drinking water.

The ground water level ranges in between 20 and 30 feet. The villagers drink water un-purified or un-boiled. In every household at least one member have/had one of the diseases like stone, jaundice, and gastric problem. Almost 70% household have toilet constructed under Swachh Bharat Mission but these are not finished, so people at present are unable to use it. In this village many families have received LPG Gas under Ujjawal Yojna but most of the families use wood for domestic fuel until it is prohibited to bring woods from forest by Forest Department. Women of this village do not have much livelihood opportunities, so they are involved in domestic work. Some of them help their male partner in sand mining. Many of the families are involved in animal husbandry but not as main occupation.

(iii) House hold survey: Villagers were very happy once they were aware about Unnat Bharat Abhiyan through hamlet meeting and social mobilisation. From IIT Delhi two members of UBA went to Naurangabad and conducted house hold survey in the first week of November 2017. In household survey form basic information about a family like how many no. of persons are in family, their age, education, health, livelihood, agriculture related information and many other issues which is related to their day to day life like, problems faced by the villagers in their village and No of Govt. scheme reach in the village and finally prioritize these problems were collected. This becomes the basic evidence as well as the information to prepare village development plan according to their needs and requirement.

(iv) Problem identification/ Need analysis:

Based on the House hold survey and hamlet meeting and PRA the following problems were identified as priority issue faced by the villagers:

- a) Village main connecting road with NH is Kacha
- b) Almost every household has their own hand pump (water table is just 20-30 feet shallow) villagers drink this water without boil or purify.
- c) No proper Sewerage
- d) No self-help groups
- e) No proper street lamps
- f) No skill labour
- g) In Naurangabad village many house hold have at least one family member suffered /suffering with Jaundice, Stone, Skin disease.
- h) Social behavioural change through communication is needed for toilets use.

- i) Most of the families use wood and cow dung for domestic fuel purpose
- j) Only traditional crops are grown
- k) More than 95 % of the farmers use chemical fertilizers, insecticide and weedicides
- l) Low awareness about immunization
- m) School dropout rate is very high
- n) When sand mining is started at Rewasan River that time air pollution is very high due to Kacha road and mining in the Village.
- o) Social Issues
 - Women empowerment
 - Alcoholism and Smoking
 - Sanitation and Hygiene

(v) **Patch visit:** In Naurangabad village Unnat Bharat Abhiyan members visited different patch of the village where individual bio gas plant is proposed to be set up. Some of the patches where Lemon grass cultivation will be done, have been visited by faculty members of CRDT, IIT Delhi along with UBA team member. Some of the patches where horticulture is grown by using chemical fertiliser, weedicide and pesticides, were also visited by UBA team members with villagers besides of these patches it proposed to promote organic farming.

(vi) Participatory Rural Appraisal (PRA)

Participatory Rural Appraisal is an exercise which is conducted to know the various information about the village with the help of villagers where villagers share the various information about the village with the outsiders. The role of an information seeker is to facilitate the villagers. Various kind of information can be generated through PRA tools regarding all the aspects of the village.

It is a participatory method to gather/ collect information by involvement of Rural/ local communities for decision making and implementation of the development project, “for the rural community, by the rural community and with the rural community”.

It is a process to involve the community in planning and decision making. Community develop their own skills needed to address issues, analyze options and carry out activities. Participatory decision making reflects respect for human dignity and creating the opportunity for individuals to fulfil their responsibility to exercise the right.

“An approach and methods for learning about rural life and conditions from, with and by rural people”. (Chambers 1994)

Participatory – Means that people are involved in the process – a “bottom-up” approach that requires good communication skills and attitude of project staff.

Rural – The techniques can be used in any situation, urban or rural, with both literate and illiterate people.

Appraisal – The finding out of information about problems, needs, and potential in a village. It is the first stage in any project.

PRA is a growing combination of approaches and methods that enable rural people to share, enhance and analyse their knowledge of life and conditions, to plan and act and to monitor and evaluate. The role of the outsider is that of a catalyst, a facilitator of processes within a community which is prepared to alter their situation. The aim of PRA is to help strengthen the capacity of villagers to plan, make decisions, and to take action towards improving their own situation. The basic idea of PRA is to rather quickly collect, analyse and evaluate information on rural conditions and local knowledge. This information is generated in close co-operation with the local population in rural areas. Therefore, the research methods had to be adjusted to local conditions, i.e. they had to meet the communication needs of illiterate people or people who are not used to communicating in scientific terms.

PRA techniques:

Visualisation - Verbalisation - Documentation

Diagrams, maps are created by the people by using symbols they develop or define. This helps them to understand the product and to modify them if necessary in a creative way.

Sequencing

Different PRA tools are combined in a specific order to achieve the goals of the PRA process: building relationship with the people, empowering the people, increase their analysing and problem solving capacities and validation of the data. Semi-structured interviews, village mapping can be supplemented by farm maps and flow charts.

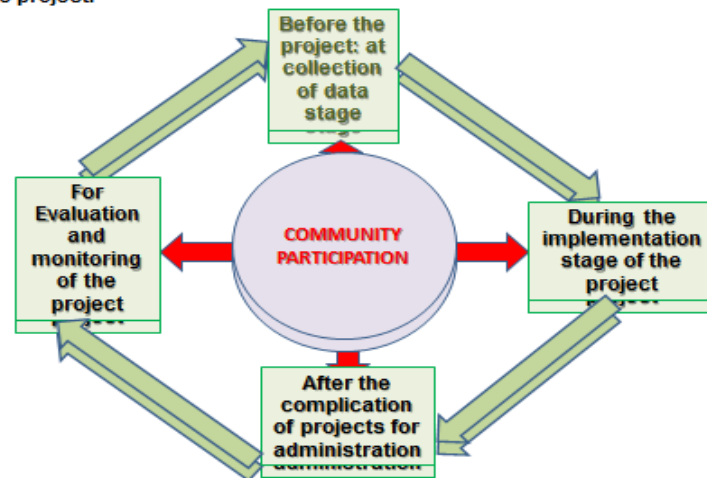
Optimal Ignorance

This means not trying to find out more than needed and not trying to measure what does not need to be measured (appropriate imprecision), or not measuring more accurately than is necessary for practical purposes. Therefore, in PRA instead of exact measurement ranking and scoring are preferred. The main reason is that it is easier and more cost effective to get such information, which are enough for decisions.

Triangulation

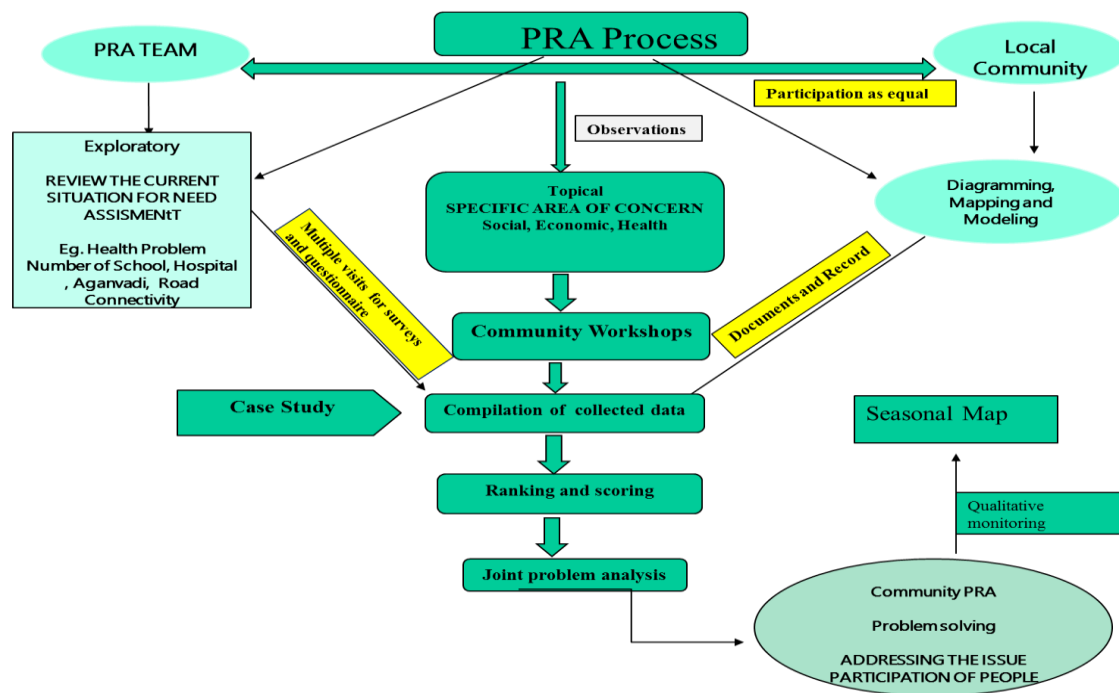
Triangulation is a principle employed in choosing different methods, locations, interviewees, team members (often a minimum of three, thus the term "triangulation") in order to improve the accuracy of the picture generated by the learning process. e.g. village mapping is precise enough to get an overall picture of the bio-physical and socio-economic situation of the village, but to know this more in detail transect or farm mapping may be necessary.

Participatory Rural Appraisal (PRA) and community participation at all stages of the project:



Participatory Planning Process – Two Stages

- (i) First Stage – Hamlet/Village meeting
- (ii) Second – House Hold survey



Diagrammatic presentation of a typical PRA process

PRA exercise at Naurangabad Village

We conducted various PRA exercises and on the basis of that we formulated a village development plan.

a: Resource mapping

At the end of the household survey, we organized a meeting with the villagers to discuss major issues related to Naurangabad village. We conducted the PRA exercise at the Primary School of village. The present ward member, teachers of primary school, young youth and number of villagers participated in this mapping exercise. Each and every detail has been drawn on A0 size chart paper first with the pencil and then with the different color sketches for easy visual identification of all abovementioned information. Please refer Fig (1) and below mentioned relation of colored lines with the elements of the collected information. We marked the location of the government amenities, area covered by the civil forest, presence of the holy place (Mandir, Gurudwara, and Masjid), and information about the available irrigation resources like canal, water drain, bore well and river etc. This village has one Anganwadi and one primary school and water tank (not in function) a irrigation channel which cover almost whole village but water flow is very slow. Naurangabad village is connected with NH-74 North side is East

Ganga canal South is covered with reserved forest area East side is Rewasan river and west is covered with forest within. We draw each and every detail on the A0 size paper using different color for different information We used Red color for Household, Sky Blue for water bodies, Dark Blue for the Holy place, Green for the Forest, Black for road and Pink for issues.

While conducting the PRA we were asking the questions as per UBA questionnaire form also to the target group for obtaining information at village level and taking notes of all the responses.

- Sky blue color for water body; Red for naming
- Pink color for house, poultry farm; Blue for government buildings like school, AWC,
- Bore well, hand pump, electricity distribution center, hospital
- Coffee color for N.H. highway, holy place, telecommunication tower
- Dark blue for internal streets or roads; Yellow for katcha road, water tank
- Light green for CNG plant; Dark green for fields



PRA exercise of Naurngabd village

b: Observation generated through household survey and PRA exercise

Naurangabad is located at a distance of about 0.5-0.8 km from NH-74 and is connected with NH – 74 by kutchra road. Total length of roads in the village is ~3 km in which 2.7 km is kutchra and 0.3 km is pucca road. Description of main road as well as internal roads can be found in the PRA map. Roads represent a key infrastructure in the form of facilitating connectivity of persons and goods and services to important institutions and markets. Main connecting road of the village becomes very poor in rainy season, so it requires immediate attention. There is one Anganwadi centre and a primary school in the village. Total literacy rate in the village is 60.36 %. School drop out is very common for them.. There is one Ashram at south east side of the village and a temple at south west side of the village where villagers go occasionally. Average electricity availability in village is 20 hrs. /day. There is 5 solar street lights in the village.

c: Demographic Profile of the village

In this village total population is around 420-450 with a gender ratio of 839 female per 1000 male and have 68 households which have pucca, semi-pucca and kutchra house with are 65.67% , 14.9 % and 19.4% respectively. Village has only one ward, i.e ward no.-5.

Total Household	68 (OBC-66, Gen-2)
Total Population	420-450
Gender Ratio	839 Females per 1000 Males
Average Members per Family	6

Gender Wise Population Across Age Groups

Age	0-5 Years	6-18 Years	19-45 Years	46 and Above	Total
Male	33	71	92	40	236
Female	23	52	85	38	198

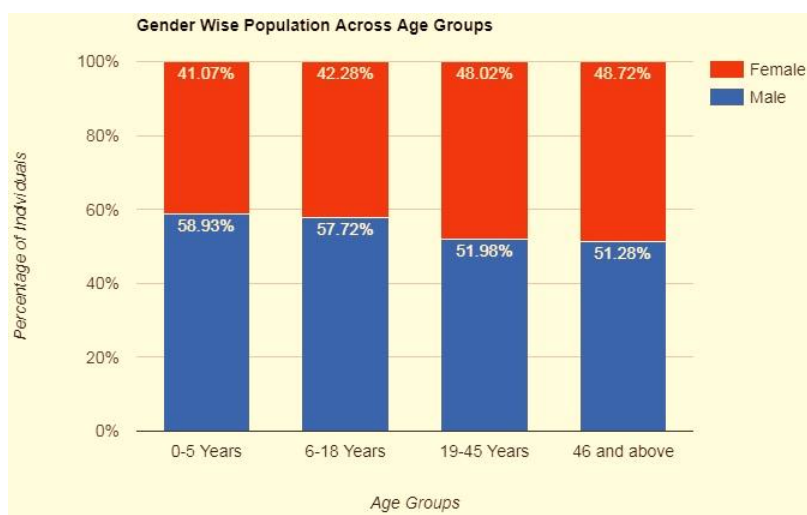


Fig (4): Gender wise population across age groups.

d: Health profile

Health is a very important component of human development. For healthy and productive life community the villagers should have access to basic health facilities. Unfortunately at Naurangabad village no sub centre or primary health centre is available. The civil hospital is situated near about 20-25 KM away from the village. It has been observed that Jaundice, Stone, Skin disease is very common in the village. Villagers have to go Haridwar for even basic treatment. At panchayat headquarter there is a Gandikhata Sub centre (Ayurvedic) which is open only on working days at office time so people prefer to go to Haridwar civil hospital. A private hospital building has been constructed in the village but not started its operation till now.

e: Drinkage water facility

For the requirement of daily water needs, entire village depends on their personal handpump as more than 90% households in the village have their own handpumps. Water table is just 20'-30' feet shallow. A water storage (reinforced concrete) RCC tank with a capacity of more than 75000 ltrs and bore depth of 400-500 feet had been constructed in year of ~2010-2011 but not in operation since that date. The cause of delay in operation is still not clear among the villagers.

Availability of Drinking Water	Village Data
Piped Water	0
Community Tap	0
Hand Pump	60
Open Well	0
Other Resource (Neighbour's Hand Pump)	8

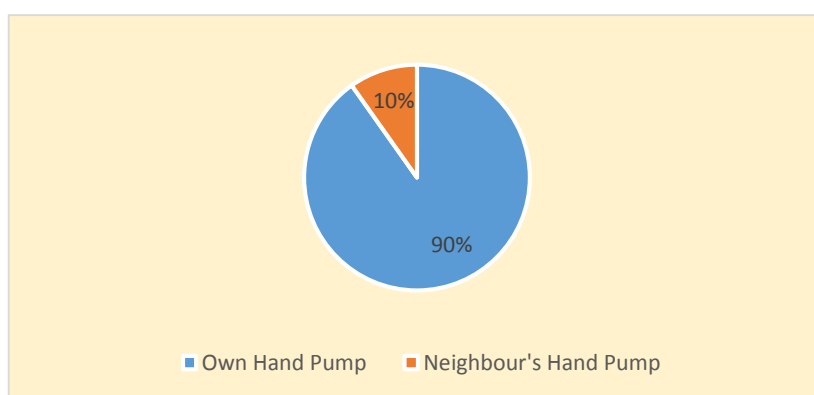


Fig (6): Drinking water facility.

f: Agricultural Profile

As per the details provided by Patwari, total land of the village is 518.921 acres (water body land- 89.79 acres, residential land- 5.6 acres, forest land- 351.865 acres, agriculture land- 71.66 acres).

- I. Approximately 30 households are involved in agriculture, among which 10 of them are involved in share cropping. Most of the families are landless. Main crops are Wheat, Rice, Sugarcane and horticulture (Vegetables). Agriculture land of this village is around 71.66 acre. The average quantity use of chemical fertilizers, chemical insecticides, chemical weedicide and organic manures for the main crops per acre are 78.33 kg, 0.3 kg, 0.62 kg and 6050 kg respectively. The main agriculture products in the village are wheat, rice, sugarcane and vegetables. There is no availability of Kisan Sewa Kendra and Krishi Mandi in the village.

Compost Pit

Compost Pit	Village Data
Individual	9
Group	0
None	58

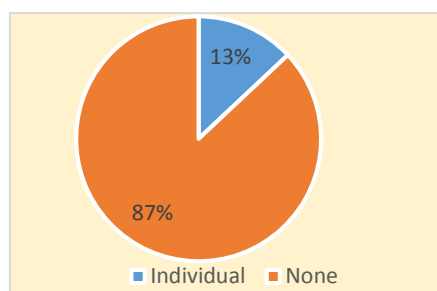


Fig (8): Compost Pit.

Cattle population, productivity, shelter and waste

Particulars	Village Data
Total No. of Livestock	128
Pucca shelter for livestock	1 (2%)
Kutchha shelter for livestock	42 (85.7)
Open shelter for livestock	6 (12.2%)

- There is only one house hold who has pucca shelter for livestock, rest of the 42 families have kucha shelter and 6 families have no shelter for livestock.

Cattle wise population per household among various

Caste Section	Cow	Buffalo	Goats/Sheep	Bullocks	Calves	Poultry/Duck
SC	0	0	0	0	0	0
ST	0	0	0	0	0	0
OBC	40	15	33	16	9	0
GEN	3	0	2	1	1	0

- II. 65% house hold use wood and cow dung for cooking purpose remaining 33% household depend on LPG.

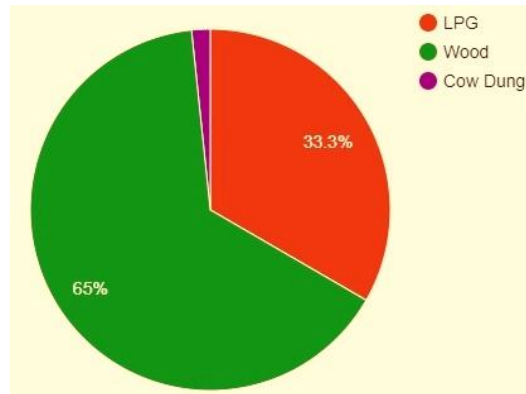
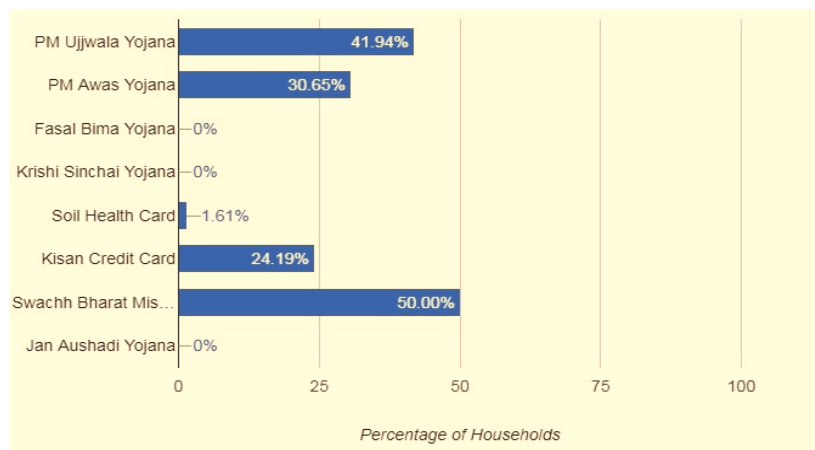


Fig (9): Cooking fuels usage in village

Government schemes coverage

- III. From household survey it has been observed that there is less awareness among the villagers for different government schemes. It has been observed that 54.31 % households having BPL card, whereas adhaar card coverage is 98.78 %, Bank coverage is 75.31% and approx. percentage coverage of PM Ujjwala, Awas, Swachh Bharat mission toilet, Soil health card, Kisan credit card, PM Jan dhan, Sukanyasamridhi, Mudra, Jivanjyotibima, Surakshabima and Jananisurakshayojana are 41.94%, 30.65%, 50%, 1.61%, 24.19%, 30.18%, 0.26%, 1.28%, 1.02%, 1.02% and 7.67% respectively.



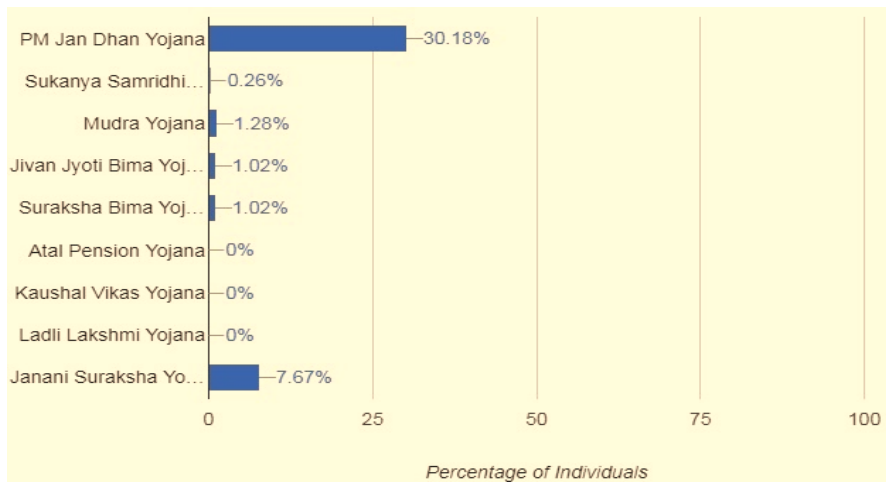


Fig (10): Government schemes coverage.

IV. Approx. 22% households have no toilet. More than 65% households have no drainage system and remaining 32% and 1.6% have open and covered type drainage system respectively.

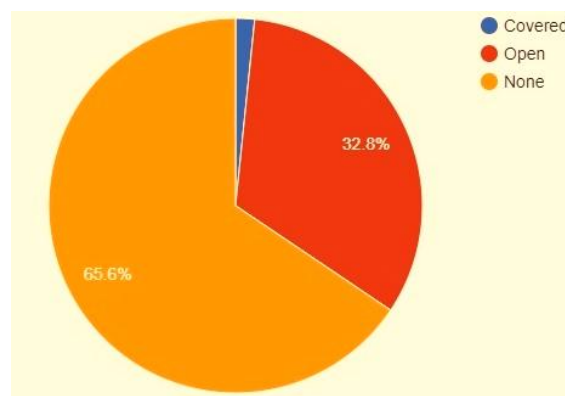


Fig (11): Drainage linked to households.

V. Main source of irrigation is a water drain channel which has been constructed and spread across the village. Water drain channel is connected with Ganga East channel. This main source of irrigation has some critical issues that have been identified in the figure and it should be resolved immediately to make this village more sustainable.



Fig (13 and 14): The steel pipe of diameter approx. 12” in the image is the main source of irrigation for the village found cracked. It is connected with a water resource from rear side and distributing the water to the fields from this starting point to end of the village via a drain which has been constructed across the village.

Action Plan -1

After analysing the identified problem IIT Delhi prepared action plan for Naurangabad Village

- Promote higher education for school dropout children.
- Create Women Self Help Groups (SHGs) and capacity building.
- Awareness campaign for immunization and health issue
- Sensitizing youth about health consequences of smoking and alcoholism
- Counselling session for youth to leave smoking/alcoholism
- Carry out cleanliness drives
- Compiegne for creating awareness about hygiene and sanitation with the help of nearest Govt. medical Sub centre.
- Waste disposal practice should be promoted through social behaviour change communication
- Personal hygiene and basic sanitation awareness may be created among villagers with the help of UBA member and local NGOs
- School children may be sensitizing through special classes/quiz /competition etc.

Action Plan – 2

- **IIT Delhi will work on these five technologies at Naurangabad Village in first year**

these are-

- ✓ Setup of Bio gas plant
- ✓ Smokeless cook stove (Chulha)
- ✓ Mushroom cultivation
- ✓ Organic farming
- ✓ Lemon grass cultivation

Setup of Biogas Plant/ Training for Biogas plant:

A large amount of biomass are available in this village therefore, group of experts of IIT Delhi have decided to setup household biogas plant and training will be given to run, maintain and use the biogas system by utilization Ministry of New and renewable Energy (MNRE) scheme. IIT Delhi will work with Surbhi Foundation who is already working in these villages. Biogas generated will be used for cooking purpose which will be sufficient for a family of 6-8 members. This approach saves their time which they generally spend for preparing cow dung cakes, collecting woods etc. Biogas slurry also will be used for bio fertilizer and bio pesticide preparation. Further, their health will be improved as biogas is a clean gas and burns without producing smoke. At the time of PRA exercise some of villagers shown their interest for biogas plants setup also.

Biogas development & training centre (BTDC) of IIT Delhi with the support of Ministry of New and renewable Energy (MNRE) under National Biogas and manure management program (NBMMP) will be providing technical training and support for quality implementation of various biogas programs. The objectives of BTDC are as follows

- To organise training courses and to demonstrate enterprises and for staff department and implementation agencies
- To carry out research and development on new scopes of Biogas technologies involving biogas enrichment and bottling techniques
- To provide technical support for National for National Biogas manure management program
- To develop multidisciplinary network programme in the area of biogas technology and to provide consultancy services to manufactures, NGOs, implementing agencies etc. for developing and testing of new system

Interested in Biogas Plant Installation				
Name	Online ID	Contact No.	Adhar Card	Remarks
Ashok Kumar Saini	17947	9456166647	4.14342E+11	Interested
SitaRamSaini	17898	8979001652	9.53328E+11	Interested
SanjeevSaini (Mangoo Singh)	17902	9758186992	3.92654E+11	Interested
Charan Singh (Kalwa Singh)	17909	9012819311	–	Interested in common biogas plant but land available at a distance of ~300' from consumption place (Brothers Charan Singh, Brijpal, Rishipal, Govind)
GopalSaini (Charan Singh)	17911	8755362882	–	
BrijpalSaini	17916	8955362882	–	
GovindSaini	17919	9761547906	–	
RishipalSaini	17946	9917183860	7.77821E+11	
VirenderSaini (VinodSaini)	17955	9917058141	4.94163E+11	Interested
AartiSaini (RajendraSaini)	17972	9675414625	–	Interested
PremSaini (Naresh)	17985	8218659851	9.29819E+11	Interested
Jaypal Singh	–	9917190978	–	Interested
JitenderSaini	–	7536021179	–	Interested
Suresh Saini	–	7409212664	–	Interested
Pushpa Devi	–	9412956074	–	Interested

Improved Cook stoves (Chulha):

Most of the households use only traditional cook stoves for cooking. The incomplete combustion of these solid biomass fuels causes dense soot formation which is highly hazardous to women and small children of the residing in the cooking area. In this scenario it is necessary to provide electricity as well as clean cooking. Clean combustion of solid biomass fuels depends on the air-to-fuel ratio.

There is a scope for introducing improved cook stoves. IITD can play a role in the same at two levels: (i) spreading awareness about commercially available cook stoves (ii) introducing them to low cost technologies which can be retrofitted in the existing stoves with substantial improvement in performance. Particularly introduction of a grate can help in reducing the emissions substantially.

Improved Biomass Cook stove for Implementation under Unnat Chulha Abhiyan Program for 2014-15 to IIT Delhi sponsored by Ministry of New and Renewable Energy, Govt.

of India. Thermo-electric forced draft stove designed at IIT Delhi. This model is self-power generating, it does not need any power supply from outside as it generates its own power to drive the fan as well as charge a battery for lighting up a 2 watt LED for about 4-6 hours per day (two cooking cycles of about one and half hour each).

Rural people still rely on traditional cook stove due to:-

- Traditional and cultural values
- Affordability of ICS
- Off-Grid areas unable to run a forced draft stove in rural areas and long duration power cuts.
- During daytime cooking, the battery is charged to light the Led at night. During cooking at night, the LED can be directly connected to provide lighting. The light consumes 2W of power and illuminates for 4 hour.



A. Conceptual Design of TEG Biomass Cook stove; B. CAD Design of TEG Biomass Cook stove; C. Actual Design of TEG Biomass Cook stove; D. Field testing of TEG stove

Interested in TEG Cookstove Installation				
Name	Online ID	Contact No.	Adhar Card	Remarks
Ashok Kumar Saini	17947	9456166647	4.14342E+11	Interested
SitaRamSaini	17898	8979001652	9.53328E+11	Interested
SanjeevSaini (Mangoo Singh)	17902	9758186992	3.92654E+11	Interested
Charan Singh (Kalwa Singh)	17909	9012819311	–	Interested
Gopal (Charan Singh)	17911	8755362882	–	
BrijpalSaini	17916	8955362882	–	
GovindSaini	17919	9761547906	–	
RishipalSaini	17946	9917183860	7.77821E+11	
VirenderSaini (VinodSaini)	17955	9917058141	4.94163E+11	Interested
Aarti (RajendraSaini)	17972	9675414625	–	Interested
PremSaini (Naresh)	17985	8218659851	9.29819E+11	Interested
Chatar Singh	–	8057624070	–	Interested
BabluSaini	–	9927937019	–	Interested
Manjeet Singh	–	8057111623	–	Interested
ShyamlalSaini	–	9627715095	–	Interested
Sushil Kumar	–	7409973042	–	Interested
SonuSaini	–	9917655083	–	Interested
MeenakshiSaini	–	8057313654	–	Interested
KuntiSaini	–	–	–	Interested
KavitaSaini	–	–	–	Interested
Manoj Kumar	–	–	–	Interested
RamkumarSaini	–	8650387653	–	Interested
Mukesh Kumar	–	–	–	Interested
ShivaniSaini	–	–	–	Interested

Organic farming: Based on house hold survey report and PRA it has been noticed that almost all farmers use chemical fertilizer, insecticide, weedicide. To keep the soil alive and in good health – IITD will promote organic farming for changing this cultivating behaviour. Organic farming has been considered as an agricultural production system that abides by natural cycles of production and excludes the use of chemical fertilizers, pesticides, growth regulators and feed additives. The system mostly depends on locally available plant/animal resources, crop residues, animal manures, organic waste and biological control of pests and diseases management for qualitative and quantitative crop production viz., use of indigenous varieties of seeds, bio-compost using agro-waste, dung, bio-pesticides, animal power etc.

The components of organic farming activities are conceived to enhance maximum production in a sustainable manner by interacting with ecological well-being. A target oriented holistic

approach for organic farming programme will be promoted. We will interact, and implement organic farming activities with farmers and the public. The agricultural farmers are the focus for resurgence of organic farming.

The aims to revive the organic farming activities will be followings:

1. To generate awareness among the farming community about ill-effects of use of chemicals in farming and the importance of organic farming and to motivate the farming community to adopt organic farming techniques.
2. To introduce and extend the concept of Sustainable Agriculture/Organic Farming amongst farmers using various organic farming techniques.
3. To identify traditional knowledge in organic farming and incorporate with frontier science for large-scale application.
4. To identify local pests and parasites causing diseases in plants and to multiply and promote the use of disease and pest resistant varieties of indigenous seeds among the farmers.
5. To promote mixed farming and composite farming.
6. To organize intensive training in various techniques of organic farming.
7. To promote organic processing and preservation and storage of food commodities/products.
8. To develop, demonstrate and disseminate the organic farming technologies in the farmers' field in the region.
9. To help in developing basic standards, guidelines and certification schemes for the benefit of growers, entrepreneurs and consumers.
10. To establish contacts, networking and co-ordination with all the agencies engaged in promotion of organic farming, processing, packaging and marketing of organic food products.
11. To document and publish literature on organic farming in various forms.
12. To use print and electronic media for popularization of organic farming techniques.
13. To develop organic farming packages.

Mushroom cultivation

Mushroom cultivation among agricultural graduates, unemployed youth and farm folks as an important agro-based enterprise, which will help in self-employment and boost the cultivation Naurngabad village, thereby, improving the living standard of marginal farmers/landless workers particularly farm women as well as act as a source of rural employment to the educated

but unemployed youth. At Naurangabad village women's have very limited/less job opportunity so they can be engaged with one of the most growing business in rural area mushroom cultivation in this village many women have shown their interest in mushroom cultivation. In local market price of frozen mushroom Rs.180-200/kg and fresh mushroom Rs. 100-150 (data is mentioned as per online market value on dated 24th November 2017)

IIT Delhi will provide the facilities of imparting training in mushroom growing, spawn and compost production and cropping rooms for growing mushrooms. These facilities will go a long way in strengthening the mushroom production which can assume the shape of commercial level. The trained people are able to take up this venture on commercial basis for self-employment and also as a family enterprise. It will provide the people with an additional vegetable of high quality, and enrich the diet with high quality proteins, minerals and vitamins which can be of direct benefit to the human health and fitness. The extractable bioactive compounds from medicinal mushrooms would enhance human's immune systems and improve their quality of life.

The major practical steps/segments of mushroom cultivation are: (a) selection of an acceptable mushroom species; (b) secreting a good quality fruiting culture; (c) development of robust spawn; (d)preparation of selective substrate/compost; (e) care of mycelia (spawn) running; (f) management of fruiting/ mushroom development; and (g) harvesting mushrooms carefully

Objectives

- To enhance the entrepreneurial skills of agricultural graduates and impart hands on/Experiential training
- To impart vocational training to the prospective growers; and to provide forward and backward linkages by extending technical knowledge
- To utilise the wastes such as cereal straws are largely burnt by the farmers, which causes air pollution, for the cultivation of mushrooms.
- To generate employment, particularly for rural women and youths in order to raise their social status. It will also provide additional work for the farmers during winter months when the farming schedule is light.
- To generate short return agricultural business and can be of immediate benefit to the community.

Interested in Mushroom Cultivation				
Name	Online ID	Contact No.	Adhar Card	Remarks
Ashok Kumar Saini	17947	9456166647	4.14342E+11	Interested
SitaRamSaini	17898	8979001652	9.53328E+11	Interested
Sanjeev (Mangoo Singh)	17902	9758186992	3.92654E+11	Interested
Virender (VinodSaini)	17955	9917058141	4.94163E+11	Interested
ShyamlalSaini	–	9627715095	–	Interested
Premvati Devi	–	7500073239	–	Interested
Pushpa Devi	–	9412956074	–	Interested
Saroj Devi	–	–	–	Interested

Lemon grass cultivation:

Lemongrass cultivation in the village with the future/ scope of lemongrass oil, so that it can be a better livelihood option for the villagers and also to giving the villagers an opportunity for proving their entrepreneur skills and taking an opportunity of proving as a social entrepreneur. This is one of the best way for the upliftment of poor and destitute people living in the village. In Naurangabad village wild animals damage their crop specially Monkey, elephant, Wild boar, Nilgai, so in this condition lemon grass is a good substitute for them. Jammu lemongrass (*pendulus*) are in cultivation in this region as the important sources of citrates.

Interested in Lemon Grass Cultivation				
Name	Online ID	Contact No.	Adhar Card	Remarks
Aarti (RajendraSaini)	17972	9675414625	–	Interested
PremSaini (Naresh)	17985	8218659851	9.29819E+11	Interested
Saroj Devi	–	–	–	Interested

Specific objective:

1. Find new opportunity and scope in the field of lemongrass cultivation in the village and nearby villages.
2. Find the key drawbacks in the ongoing process of lemongrass cultivation, processing and marketing in the village.
3. Know the scalability of lemongrass oil.

For planting of the same two practices are followed: direct seeding and transplanting methods. Average planting cost per hectare comes to Rs. 70381- which ranged from Rs.52001- to Rs. 97501. On an average 25 kg of oil can be obtained from first year from per hectare plantation

and about 80 to 100 kg of oil per year from 2nd to 6th year if it is being well maintained. India is annually producing nearly 1000 MT per year while the world demand is much more. Annually, we are exporting lemon grass oil to a tune of about Rs. 5 cores.

Plans for skill up gradation among women:

The Producer group will choose one of its member to help women to acquire skills in improved agriculture. ABSSS will train her as ‘community resource person’ (CRP). The CRPs will be trained as village extension workers to help farmers to adopt modern farming techniques and new crops and will be hosted in community organizations. They will provide services to farmers who remain accountable to and will be paid by their collectives for services at mutually agreed rates.

Plans for awareness generation with regards to women farmers’ rights and entitlements:

The major focus of VDP would be to increase the awareness of SHG members on their entitlements under MGNREGA and FRA so that they would act to mobilize them. They will be made aware about the different government schemes like **Bridhapension, jandhanyojna, fasalbimayojna, Sichaiyoyjna, Soil hejth card Kishan credit card** etc, , its role in planning and their development and will be encouraged to attend those for influencing the decisions in their favour.

Marketing:

These farmers will be tied with vendors in local market through implementing agencies where they can sell their produce as organics. This avoids problems of middleman. The networking and coordination will be established with various agencies of Government, NGO’s, Private and Corporate houses engaged in promoting production, processing, packaging and marketing of organic food, food products and other allied goods. The same strategy will be applied for different agro-produce.

Activities to be undertaken in near future.

Water Management

- There is a need for installation of drinking water and soil testing machine
- Repair and restoration of drinking water bore well in the village needs to be done.

December - 2017