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PROJECT GUIDE

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Barapita: A detailed Report

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Fig 1: Barapita

INTRODUCTION

Live-in-Labs® is a multidisciplinary experiential learning program that breaks classroom and lab barriers by applying learned theory in real-world settings. This credit-based academic program facilitates the research, development, and deployment of sustainable solutions for current challenges faced by rural communities in India. By directly living in rural communities (labs) and co-designing solutions to development challenges with community residents, program participants gain first-hand knowledge and know-how of identifying and assessing community needs and subsequently designing, developing, and implementing viable solutions through various participatory methods.

Barapita, Khurda, Odisha:

Only when we go to villages we realise how much urbanisation has changed our behaviours, how we moved away from our culture and traditions. Barapita is one such village, located 22 km southwest from the state capital. It comes under the khurda district, located adjacent to chandaka forest, it has a symbiotic relationship with the forest. Bara is an animal which was in large number on the outskirts of the village, they used to enter the village and destroy the creepers with their pointed horns, villagers used to beat it(pita) and flee them away, that's how this village got its name. people from barapita migrated from Jharkhand in the 1950s, they belong to the ho tribe. The Ho people are an ethnic group of India. They are an Adivasi people group concentrated in the state of Jharkhand and Odisha, where they constitute around 10.5% of the scheduled tribes. The ethnonym "Ho" is derived from the Ho language word *hō* meaning "human". The name is also applied to their language which is an Austroasiatic language. Farming is the main occupation in barapita and few people work as manual labourers in centre for excellence in horticulture in Haridamada.

Five unique things of Barapita:

100% solar village:

October 2, 2015 marked a life-changing transition for the 350-odd dwellers of Barapita, a tribal village about 25 km southwest of Bhubaneswar. It made history by becoming the first village in the state to be powered entirely by solar energy. Its model is low-cost, low-maintenance and community-owned – elements. The Rs 7-lakh project, co-funded by ECCO Electronics and Jackson group has put individual solar units with two lamps in each of the village's 61 households, along

with a central one-kilowatt unit that powers eight street lamps, and an LED television set and a TV set-top box for the community centre. Two multipurpose LED lamps were handed over to each household, the central solar unit has eight big panels that can be folded in just two minutes to protect them from cyclones and high-speed winds that hit Odisha frequently. Now this unique thing has lost its shine, as the solar panels were not cleaned regularly, and they malfunctioned. Officials did not do frequent checks, only the solar street light is in working condition, individual lights were not working.



Fig 2: Solar panels at the entrance of the village.

Production of Handiya:

The Ho people brew a sort of rice-beer commonly known as *diyeng*, otherwise also known as "Handiya" in other languages. It is said to be highly refreshing and invigorating. It has great importance in religious festivals and is also used as a good medicine for the stomach. Pathala garudo is a medicinal root and it's one of the main ingredients in Handiya, people living in barapita make aandiya and sells it to outsiders at 10 rupees per bottle



Fig 3: Handiya production in the houses of the villagers.

Immunization:

Immunizations, safely and effectively use a small amount of a weakened or killed virus or bacteria or bits of lab-made protein that imitate the virus in order to prevent infection by that same virus or bacteria. Immunization of infants and children against six vaccine-preventable diseases protect children from - poliomyelitis, diphtheria, pertussis, tetanus, tuberculosis and measles is provided. These are major preventable causes of child mortality, disability, morbidity and related malnutrition.

Immunization of pregnant women against tetanus reduces maternal and neonatal mortality. The fixed immunisation day is Wednesday throughout the village. The MPH (Multi-Purpose Health Worker) and ANM (Auxiliary Nurse Midwifery) assists the health functionaries in coverage of the target population for immunization. They visit the village on the scheduled dates and help the organization in the fixed-day immunization sessions and maintain the immunization register and follows up to ensure full coverage. In Barapita, the immunization takes place in the anganwaadi centre.



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SELF MONITORING TOOL IS MY VILLAGE MY HOME

(To be filled up at each routine immunization session site)

ପ୍ରାଥମିକ ସ୍ୱାସ୍ଥ୍ୟ କେନ୍ଦ୍ର ନାମ **ନାରାୟଣ**
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Sl No.	Name of child (Full Name)	DOB	Sex	Weight	Height	OPV	Pentax	Measles	IPV	JE	Rotavirus	VFA	Others
						0 1 2 3	1 2 3 1 2 3	1 2 3	1 2	1 2	1 2	1	
18													
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Printed on March 21, 2017. After each immunization session, the data should be filled up at each routine immunization session site. The data should be filled up at each routine immunization session site. The data should be filled up at each routine immunization session site.

Fig 4: A chart in Anganwaadi centre mentioning the date of immunization for each child in the village.

Handicrafts:

People make brooms and other handcrafted products using bamboo and other resources available to them. Long grass popularly known as “Ghasso” is finely handcrafted by the ladies and is also adopted as an activity of interest in many parts of the village, but sadly it’s not a commercial product among the villagers. The usage of bamboo has reached its zenith with every house having its structural members made of bamboos.



Fig 5: Handmade brooms

Football tournament:

The youth of Barapita have a huge craze and passion about the popular sport “Football”. They also have their own football ground which is maintained meticulously. They also plan to host a football tournament later during the cold and enduring month of December, and as strange as it may seem, the winning team gets a “Goat”.



Fig 6: The winning team with the goat.

Raja Sankranti:

It is believed that the mother goddess Earth or the divine wife of Lord Vishnu undergoes menstruation during the first three days. The fourth day is called *Vasumati gadhua*, or ceremonial bath of Bhudevi. During the three days women are given a break from household work and time to play indoor games. Girls decorate themselves with new ornaments and traditional Saree. All people abstain from walking barefoot on earth. Girls play swings tied on tree branches whereas aged ladies play Cards and Ludo. Many villages organise Kabaddi matches among young men.

Methodology:

Participatory Rural Appraisal (PRA):

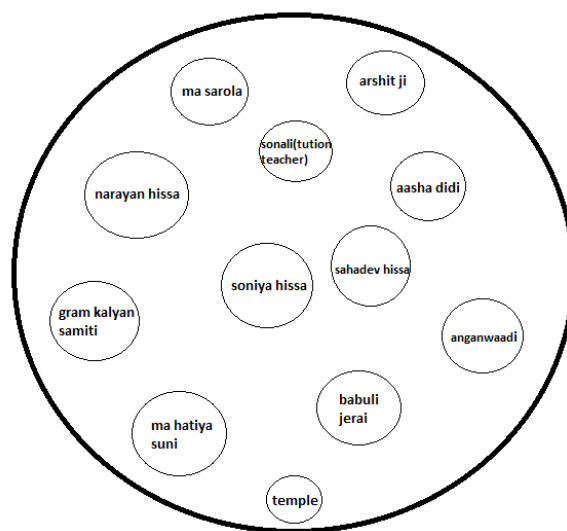
The approach aims to incorporate the knowledge and opinions of rural people in the planning and management of development projects and programmes.

The basic techniques used include:

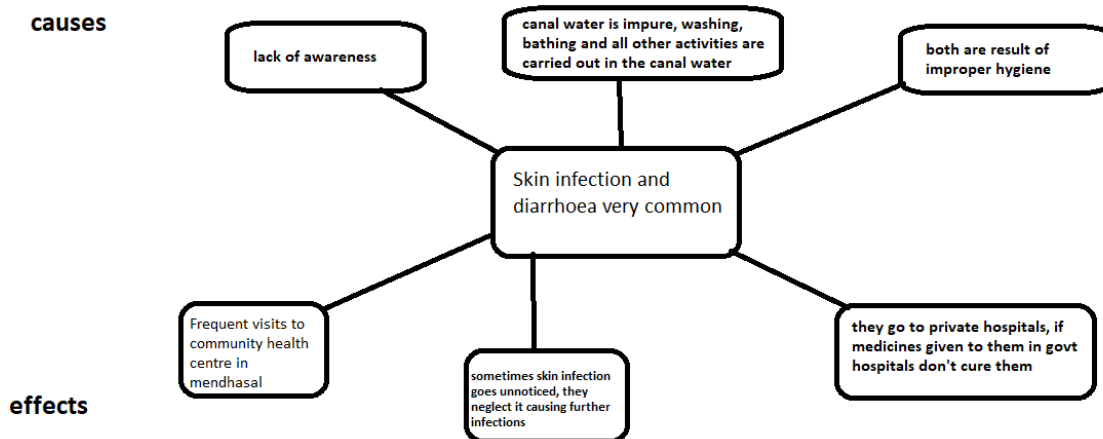
- Surveying and sampling, e.g. transect walks, wealth ranking, social mapping.
- Interviewing, e.g. focus group discussions, semi-structured interviews, and triangulation.
- Community mapping, Venn diagrams, matrix scoring, echograms, timelines.

Human Centered Design (HCD):

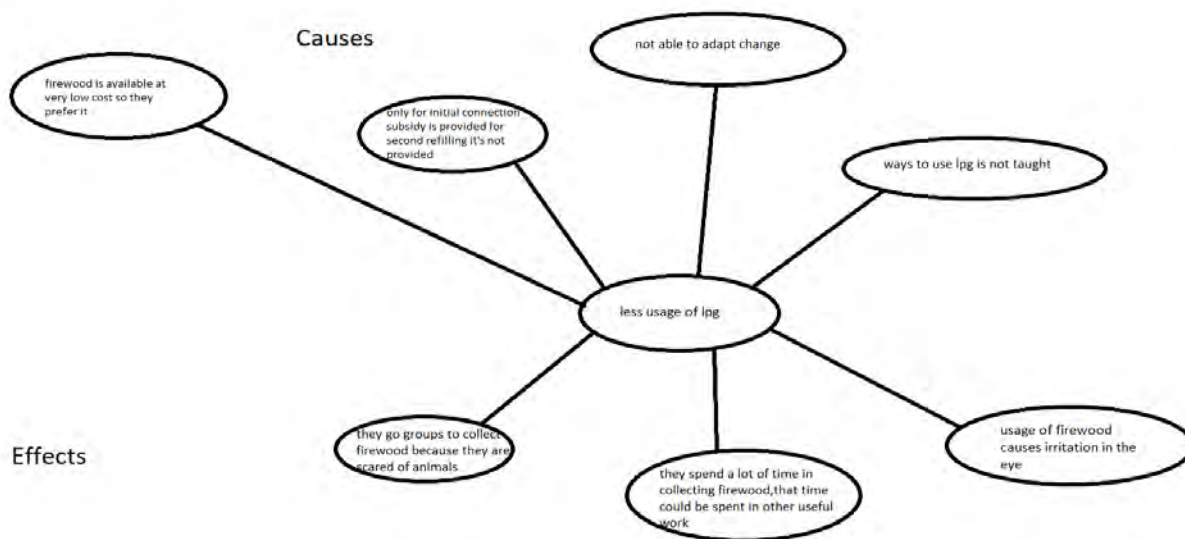
HCD (Human centered Design) is used to identify the challenges faced by the villagers and to design a solution. HCD is a design and management framework that develops solutions to problems by involving the human perspective in all steps of the problem-solving process. Human involvement typically takes place in observing the problem within context, brainstorming, conceptualizing, developing, and implementing the solution.

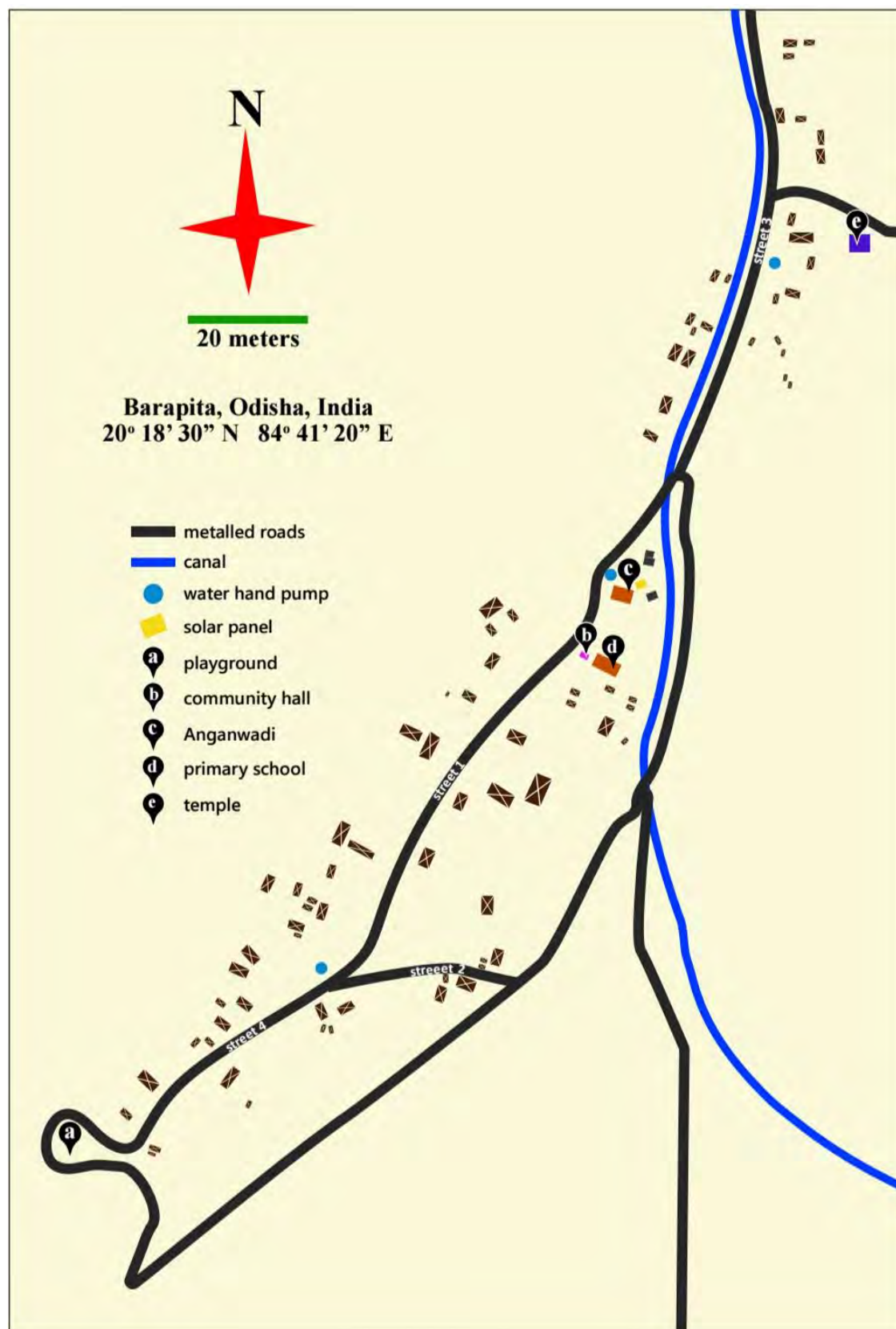


Names in the centre are the most influential people in barapita this was inferred from our interaction with the villagers



These were major problems that were identified on the first two days of the visit





Overall layout of Barapita

Problem statement:

Proper health care is something which everyone strives for, people of barapita are being inundated with problems related to health care, common one being the cleanliness related diseases which arise due to

open defecation, spacing between pregnancies, poor awareness regarding health care policies etc. This study was done to assess the extent and the root cause of all these issues

Health care in Barapita

The most common problems are faced by pregnant women. The women in the village are not having sufficient gap between two pregnancies. When a woman does not wait at least 18 months between pregnancies, there is an increased risk of having a poor birth outcome. Frequent pregnancies are not considered good for both mother and baby since the mother may not be able to recoup her ability to supply all the required nutrients to the baby in the womb. Upon interviewing the women, we found that the average gap they have between two pregnancies is 12 months. The people in the village are not using any birth control methods. Even if all things seem to go right for pregnant women, it is almost a herculean task for them to deliver the baby due to lack of financial support. The nearest Hospital with all the facilities is located 17 kms away, happens to be a private organisation which charges the villagers twice more than what they actually earn for a living. The women of Barapita suffer muscular and joint pain like arthritis due to their heavy workload of collecting of firewood and pumping of water and transporting it back to their home from distant parts of the villages. The collection of firewood tests their body as well as the mind since they have to travel 5kms to the nearby forest. It also takes a whole day to collect them and return. Due to this many people try to avail Ujjwala Yojana. Pradhan Mantri Ujjwala Yojana (PMUY) aims to safeguard the health of women & children by providing them with a clean cooking fuel – LPG, so that they don't have to compromise their health in smoky kitchens or wander in unsafe areas collecting firewood. This was launched by Hon'ble Prime Minister Shri Narendra Modi on May 1st, 2016 in Ballia, Uttar Pradesh. Under this scheme, LPG connections will be provided to BPL families with a support of Rs.1600 per connection in the next 3 years. Identification of the BPL families will be done through Socio Economic Caste Census Data. But the scheme does not seem to function properly in the village since the three-year support is not being provided to them. Being unable to purchase new cylinders every month, they still use firewood. Few families are not benefitted by the scheme, since they do not have BPL (Below Poverty Line) cards.



Fig:7 Unused cylinder

Every village in the country has a trained female community health activist ASHA (Accredited Social Health Activist). ASHA is a woman resident of the village preferably in the age group of 25 to 45 years. She will be the first port of call for any health-related demands of deprived sections of the population, especially women and children, who find it difficult to access health services. The ASHA of Barapita is Radhika Munde who is readily available for the villagers in case of emergencies. She also performs the task of informing the villagers about any health camp and outbreak of any disease. She is also trained to perform basic malaria test.

Considering all the issues faced by the villagers, the government has taken many steps to tackle it and one of them being the “Gaon Kalyan Samiti”. It is a revenue village level institution constituted by the community as a simple and effective management structure for improvement of health and sanitation standard of the villages as a part of National Rural Health Mission initiative. Gaon Kalyan Samiti plays an important role to identify local health issues and taking suitable measures to solve the issues like providing awareness to the people during rainy seasons to prevent malaria. It also acts as a facilitating body for implementation of various village level welfare and developmental programmes being implemented by Government. ASHA and Anganwaadi workers are part of this institution.

Odisha lives in its Villages and farmers are its backbone. They suffer in silence and when they are affected by ailments and diseases, pay heavy economic, social and emotional price. The most important and major cause of our farmers falling to poverty trap is the financial hazards and deprivation that health related expenses bring to them. Biju Krushak Kalyan Yojana is brought in as a tribute to the Farmers and their families to provide them health security. It is an earnest effort to provide them financial support through health and accident insurance as a part of the commitment of the welfare state. Rural Odisha houses 83% of the total population of the state. One of the major insecurities for rural populace and farmers is absence of health cover for such farmers and their family members. Insecurity relating to absence of health cover, heavy expenditure on medical care and hospitalization and recourse to inadequate and incompetent treatment is not only a social and psychological burden borne by these populaces but there are significant economic costs resulting from loss of earning and progressive deterioration of health. Thus, with a view to providing health insurance cover to farmers in the Rural Odisha and their families, the Government of Odisha has announced the “Biju Krushak Kalyan Yojana” (BKKY). They provide a cover of thirty thousand rupees to the farmers in case of any medical emergency. It can also be used for 5 family members of the card owner.



In spite of all the efforts taken by the government, the farmers are still ignorant about the schemes put forth to them by the government such as renewal of the scheme every now and then. The lack of awareness about the schemes and the renewal methods do not allow them to get benefitted from the scheme.

A ground zero report

Present situation at government hospital

Community health centres, also referred to as community health services (CHSs), operate across the state and aim to provide a broad range of services and health promotion activities to local populations, particularly those who have or are at risk of the poorest health and have the greatest economic and social needs. They provide counseling and support services, health promotion activities, Medical and nursing services, dental health, allied health, including audiology, dietetics, exercise physiology, physiotherapy, podiatry, occupational therapy and speech therapy.

The CHC situated at Mendhasal located 9 kms away from the village is the one and only closest hospital and also which is affordable to the villagers. But all is not well within the hospital, which we concluded from an interview with the chief doctor. The doctor said lack of basic facilities in the hospital and standard equipment takes a huge blow on the reputation of the hospital. Only two doctors take charge of the hospital per day, where it's visited by more than 200 villagers per day on an average. Lack of proper ventilation makes the waiting hours of the patients even worse.

The community Health Centre has four doctors. Currently only one doctor (MBBS) is in the hospital since the others are pursuing their higher studies. There are one three nurses and one compounder in charge for the entire clinic. It has a very small laboratory which makes the patients wait in the queue for a long time. The hospital has a labour room and a general ward with six beds in which the pregnant women can be admitted for a week after normal delivery. It has no facilities for premature births and caesarean. The doctor who was present there during our visit stated that equipments available. The lack of ultrasound scan and X-Ray facilities make their diagnosis difficult.



Fig: Community health Centre, Mendhasal

Community health centre also sends in their best pharmacists to conduct a regular health check-up and to get a detailed report on the health conditions of the villagers. They visit the villagers on the second Thursday & Tuesday, third Friday, fourth Wednesday and the first Monday of every month.

In case of pregnant women, the ANC (Antenatal care) and the PNC (Postnatal care) are provided. These health camps are visited mostly by the women in pre and post pregnancy stages.



Fig: Health camp conducted by community health centre, mendhasal

Pan and Ghutka is a major source of addiction among the villagers. From the interview with the doctor, we found out that the level of addiction is measured based on the following factors such as

- Waist Diameter
- Frequency of consuming pan and ghutka
- Condition of teeth
- Body Mass Index (BMI)

NTCP (National Tobacco Control Programme) which provides health education regarding harmful effects of tobacco and ghutka. They also spread awareness on the ill effects of tobacco and ghutka.

Swachh Bharat Mission (SBM) was inaugurated by Prime Minister Narendra Modi for ensuring hygiene, waste management and sanitation across the nation. One of the primary goals of the SBM-Urban is the construction of toilets with the aim to make India free of open defecation by 2019. Fund was allocated to every household for the construction of toilets but there is no separate water connection for the toilets and in few toilets, closet is missing and also proper connection to the pit is

not present. Most of the toilets are used as storage rooms to store the crops and fertilizers. Lack of awareness hinders the usage of toilets and they still prefer open defecation. As a result of this cleanliness related diseases like cholera and diarrhoea are common in the village.



Fig: Unused toilets.

To add to the worries of the mothers of Barapita, almost all the children in the village are affected by bacterial infections on the skin like rashes, boils due to the canal water which they use it for bathing and washing purposes. For which, they have to spend about one thousand rupees for the injections which exceeds their weekly income. According to the women, even though they bath their children in clean water, they are affected by the infections of other children while playing. Even though they spend huge amount of money and cure it, this doesn't put a full stop to their worries since their children are repeatedly being affected by the other children.

When it comes to menstruation, hygiene becomes a great question mark since the women of Barapita don't rely on sanitary pads. They are still using clothes which is washed and reused. To make it even worse, few ladies are not even using clothes. The usage of cloth is unhygienic and may lead to several infections. To put an end to this practice, the government has introduced sanitary pads at affordable price (6 rupees per packet which contains 6 pads). But the villagers are not aware of this measure taken by government. It is difficult for the women to change their old practice of using clothes since proper awareness is not provided and few women are conservative and do not

approve of these modern methods. Many women do not know how to use and dispose the napkins. At the positive side, the school going adolescent girls are making use of this initiative taken by the government, since it's also provided in all government schools.

The government also supplies folic acid tablets and iron syrups to adolescent girls at frequent intervals which is done to prevent anaemia. A check-up is also provided to check the average BMI of every adolescent girl studying in government schools. Care is also taken to provide school children with 6 eggs a week, a dal and laddoo to prevent malnutrition.

Conclusion

Life always seems difficult and hard for most of us, but the village of Barapita completely changed our perspective on life. We only realize the most beautiful things in life in their absence, such was the impact of Barapita on us. This visit to Barapita made us take a step back and ponder upon how urbanisation has changed the ways of our lives, though coming from different states, different `cultures, and diversification in everything and the villagers of Barapita gave us an invaluable experience of “love and to be loved”. We left the village with a heavy heart, but our spirits glowing more than ever before to be the best and responsible engineers that we can /could ever be. One of the possible solutions could be conducting awareness camps, tele medicine etc. This could be the next area which we have to concentrate on to come up with an effective solution.