

The \$300 House

A Community Survey of Rural India



September 2011

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BACKGROUND

The \$300 House is a project initiated by business guru **Vijay "V.G." Govindarajan** and **Christian Sarkar** in a [blog post](#) in *Harvard Business Review*. The goal of the [\\$300 House](#) initiative is to help design, build, and deploy a simple dwelling which keeps a family safe from the weather, allows them to sleep at night, and gives them dignity.

Three Headed Lion's (THL) involvement includes conducting an attitudinal and information gathering survey in order to better understand the housing needs of rural India. THL is a premium information, research, risk management and market intelligence company headquartered in New Delhi, India. With a network of more than 1,000 primary information providers spread all over the 626 districts in India & across all regions of South Asia, THL easily has the deepest and the widest presence in South Asia. This vast information gathering network is the eyes and ears for a variety of clients interested in ground-level data, research, information and analysis.

APPROACH

THL worked with **Christian Sarkar** to:

- 1) Determine the scope of the survey project
- 2) Identify the rural locations for conducting the survey
- 3) Translate the survey into Hindi
- 4) Identify key community members in the villages and conduct the face to face surveys
- 5) Take additional information (photos, videos) to accompany the survey data
- 6) Collect and analyze the data and compile a report for the \$300 House project
- 7) Retain contact information for the key community participants should follow up contact become necessary (this data is kept confidential)

SCOPE AND DURATION

THL received the \$300 House survey on September 2, 2011. The THL team then identified the various villages suited for the survey and contacted our information providers in each village. The survey was translated into Hindi, along with a set of detailed instructions for conducting the survey. Initial results were received on September 12th.

Fifteen villages in three states in India (Jharkhand, Bihar and Uttar Pradesh) were surveyed by the THL team. Survey was conducted face-to-face and considerable amount of time was spent in talking to the respondents, their families and neighbors. The THL team also walked the village to observe the challenges faced by the villagers and validated problem areas highlighted by the respondents of the survey.

Target Villages- Jharkhand:

- Bombray
- Pakur
- Litipara
- Kujju
- Toyar

Target Villages- Bihar:

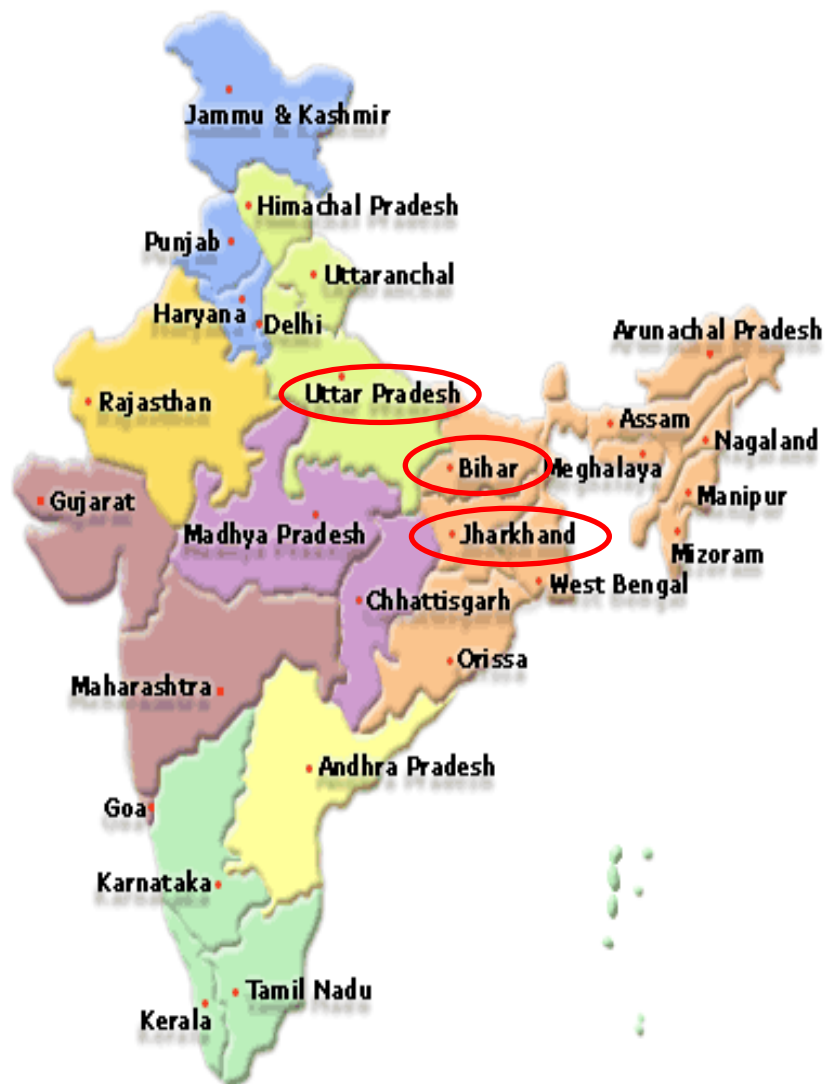
- Barwal
- Fatehpur
- Danapur
- Navakadeeh
- Raghapur

Target Villages- Uttar Pradesh:

- Unnao
- Mangat Kheda
- Atarsai

- Ramabai Nagar
- Mehraj Ganj

For each village, the THL team spent the day with a member of the village – someone respected by the other villagers. Their views were candid and unapologetic, as the responses show.



KEY FINDINGS

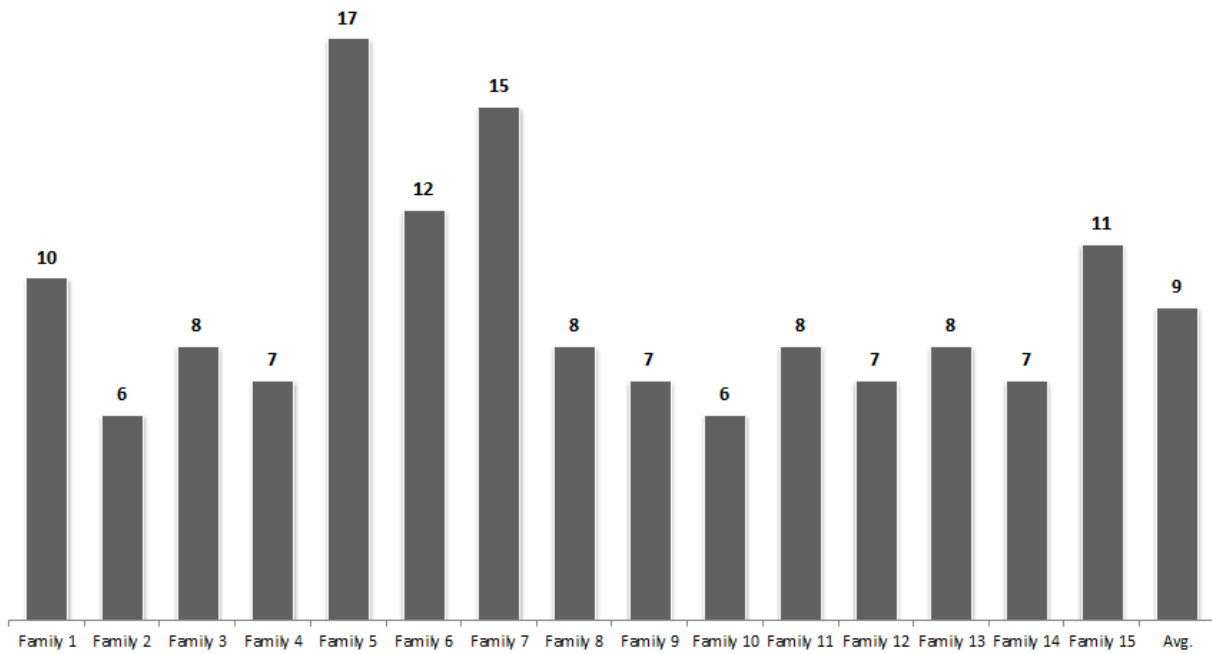
- Most villagers in the target areas live in very similar conditions and face same kind of day to day challenges.
- Most families have close to ten members who live in very cramped and unhygienic conditions, and with little privacy.
- The average monthly household income is approximately USD 100.
- The occupation of the head of household was- wood cutter, laborer, bamboo basket maker, blacksmith, shepherd, farm worker, factory worker.
- A typical day in these households starts very early in the morning and ends early in the night.
- All respondent own the land they live on.
- The quality of the houses was extremely poor and requires frequent maintenance and rebuilding especially after a major storm or rain:
 - The walls of the houses in the villages are built using some combination of mud, unbaked bricks, wood, stones, wood, and cow dung with no structural design and with weak foundation strength.
 - The floor of the houses is made up of clay/earthen floor and in few cases with concrete.
 - The roof of the houses use some combination of metal sheets, wood, and thatch.
- All houses surveyed lacked basic amenities like clean running water, separate kitchen, and protection from animals, insects and snakes.
- Only one house had electricity and that too was only available for few hours a day. Rest of the houses used kerosene for lighting lamps.
- About three fourth of the people surveyed had no access to toilets and had to go out in the open, usually walk a good distance to relieve themselves.
- Fourteen out of fifteen families surveyed walk anywhere from 5 to 20 minutes to fetch water while the remaining family walk over 20 minutes to get water.

- Women are responsible for getting water, cooking fuel (usually wood from nearby forest), cooking, cleaning and laundry. Laundry is done at the source from where women fetch water- hand pump, well, pond, waterfall, etc.
- None of the houses surveyed use any kind of water treatment methods with the exception of using a cloth when the water is visibly dirty or what the government may be using for public wells and tap water.
- All respondents agree that lack of clean, safe housing, good education and employment were the most important challenges faced by them and their fellow villagers.
- All respondent were willing to pay \$300 for a good house and were ready to borrow the money to pay for it.
- All respondents are willing to pay for electricity. For other basic services like water, education, and healthcare, the response for willingness to pay is mixed.
- Respondent outlined four critical requirements for good housing- at least two rooms, private toilet, electricity and small land for farming / livestock.
- The desired house would be 400 sq.ft. in size with a height of 9-10 ft. and built on a 500-550 sq.ft. piece of land.

KEY DATA

Exhibit 1- Size of the Family

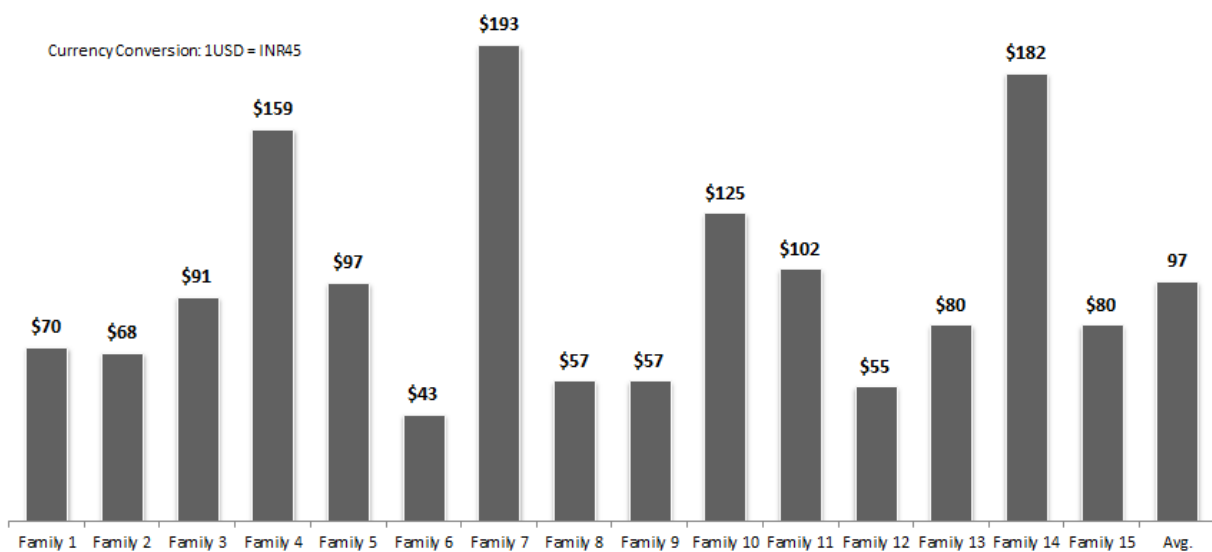
N = 15



Data Source: Rural Housing Survey India, THL- Sep. 2011

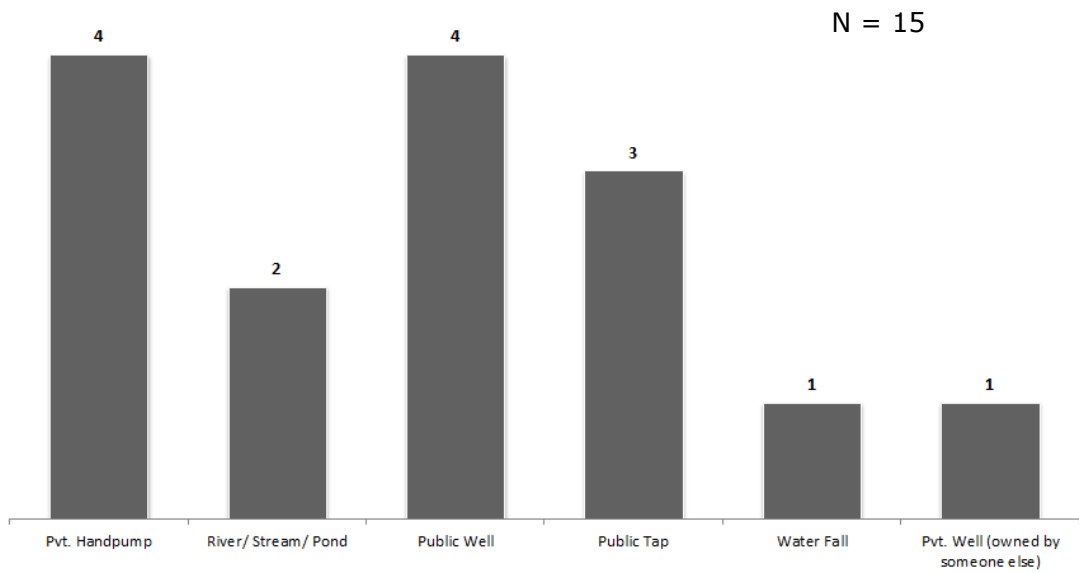
Exhibit 2- Monthly Household Income

N = 15



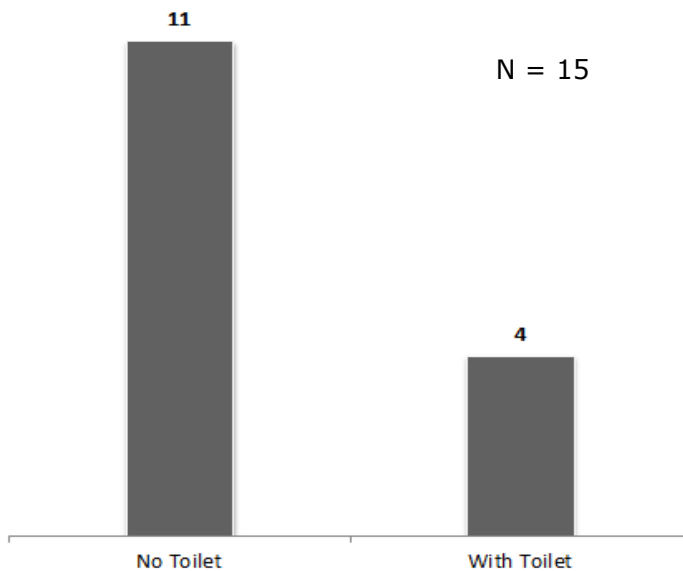
Data Source: Rural Housing Survey India, THL- Sep. 2011

Exhibit 3- Source of Water



Data Source: Rural Housing Survey India, THL- Sep. 2011

Exhibit 4- Households with No Toilet vs. Toilet



Data Source: Rural Housing Survey India, THL- Sep. 2011

Exhibit 5- Key Responses (Jharkhand State)

	Jharkhand				
	Family 1	Family 2	Family 3	Family 4	Family 5
Who owns land?	Self	Grand father	Grand father	Self	Self
Major construction material of external wall	Mud, stones	Unbaked brick, adobe	Mud, Wood, Stones	Mud, Stones	Mud, Wood, Bamboo, Plastic
Major construction material of floor	Clay/earthen floor	Clay/earthen floor	Clay/earthen floor	Clay and Stone	Clay/earthen floor
Major construction material of roof	Wood, adobe (khapra), Rope	Thatch, wood, mud	Wood, Bamboo, Thatch, Khapra	Thatch, bamboo, wood, plastic	Wood, Bamboo, Plastic and Khapra
In general, how satisfied are you with your current house? (1= Very satisfied, 5 = Very dissatisfied)	5	4	5	4	5
How far do you travel to water?	Under 5 minutes	5 minutes to 20 minutes	5 minutes to 20 minutes	5 minutes to 20 minutes	5 minutes to 20 minutes
How do you get there?	Walk	Walk	Walk	Bicycle or walk	Walk
Form of transportation	Bicycle	Bicycle	Bicycle	Bicycle	Bicycle
Source of drinking water	Private hand pump	Waterfall	River, Stream, lake, pond	Public Well	Private well (owned by someone else)
Water treatment	None	None	None	At times government sprays chlorine in the well	None
Source of artificial lighting	Kerosene Lamp	Kerosene, oil or gas lamps	Kerosene Lamp	Kerosene Oil	Kerosene lamps
Type of toilet	No toilet	No toilet	No toilet	No toilet	No toilet
Toilet disposal system	na	na	na	na	na
How often house floods	Never	Never	Doesn't rain much	Doesn't rain much	never
Willingness to pay \$300 for the house	Y	Y	Y	Y	Y
Willingness to borrow \$300 for the house	Y	Y	Y	Y	Y
Height of the house (ft.)	8	8 to 10	10	10	9
Size of the house (sq. ft.)	300	400	400	400	400
Size of the land (Sq. ft.)	450	500	500	450	500

Exhibit 6- Key Responses (Bihar State)

	Bihar				
	Family 6	Family 7	Family 8	Family 9	Family 10
Who owns land?	Ancestral	father	Own	Own	Ancestral
Major construction material of external wall	Unbaked brick, adobe	Mud, Stones, Wood	Mud, Unbaked Bricks, Wood	Mud, bamboo, cow dung	Unbaked brick, adobe, mud
Major construction material of floor	Clay, earthen floor	Clay, earthen floor	Clay, earthen floor	Clay and cow dung	Clay/earthen floor
Major construction material of roof	Wood/thatch	Wood, Thatch, Bamboo, long leaves	Asbestos sheets, Plastic sheets,	Bamboo, Plastic sheet, rope, wood	Wood, thatch, mud
In general, how satisfied are you with your current house? (1= Very satisfied, 5 = Very dissatisfied)	4	5	4	5	2
How far do you travel to water?	5 min	5-20 min	5-20 min	5-20 min	Under 5 min
How do you get there?	Walk	Walk	Walk	Walk	Walk
Form of transportation	Bicycle	Bicycle	Bicycle	Bicycle	Bicycle
Source of drinking water	Private hand pump	River, Stream, Pond	Public Well and hand pump	Public Well	Private hand pump
Water treatment	None	None	Filter it with a cloth, chemical used	None (only when dirty use cloth)	None
Source of artificial lighting	Kerosene/oil	Kerosene lamp	Kerosene lamp	Kerosene lamp	Kerosene, oil or gas lamps
Type of toilet	Traditional latrine	None	None	None	Traditional latrine
Toilet disposal system	Septic tank	na	na	na	Septic tank
How often house floods	During rainy reason	Doesn't rain much	During rainy reason	During rainy reason	During rainy reason
Willingness to pay \$300 for the house	Y	Y	Y	Y	Y
Willingness to borrow \$300 for the house	Y	Y	Y	Y	Y
Height of the house (ft.)	10	10	8	10	8 to 10
Size of the house (sq. ft.)	400	300	350	500-550	400
Size of the land (Sq. ft.)	500	450	450	650-700	500

Exhibit 7- Key Responses (Uttar Pradesh State)

	Uttar Pradesh				
	Family 11	Family 12	Family 13	Family 14	Family 15
Who owns land?	Family Owned	Self	Self	Self	Father
Major construction material of external wall	Unbaked brick and mud	Bricks, Concrete, Wood	unbaked bricks and mud	Unbaked bricks and mud	Bricks, wood, mud
Major construction material of floor	Clay and mud	Concrete	Clay/earthen floor	Mud	Clay and Concrete
Major construction material of roof	Thatch	Wood and Thatch	Thatch, wood, mud	Thatch, wood, mud	Metal Sheets, wood, thatch
In general, how satisfied are you with your current house? (1= Very satisfied, 5 = Very dissatisfied)	4	3	5	2	5
How far do you travel to water?	20 minutes to 1 hour	5 minutes to 20 minutes	5 minutes to 20 minutes	5 minutes to 20 minutes	Under 5 minutes
How do you get there?	Walk	Walk	Walk	Walk	Walk
Form of transportation	None	Bicycle	None	Bicycle	Bicycle
Source of drinking water	Public Well	Public Tap and Public Well	Public tap	Public Tap	Private hand pump
Water treatment	None	None	None	None	None
Source of artificial lighting	Oil or gas lamps	Kerosene oil lamp	Kerosene lamp	Kerosene, oil ,gas lamps	Grid electricity
Type of toilet	Traditional Latrine	No toilet	None	Traditional Latrine	No toilet
Toilet disposal system	Sewer System	na	na	Septic Tank	na
How often house floods	Only after heavy rainstorms	Only after heavy rainstorms	During the rainy season	During the rainy season	This village is mostly famine stricken
Willingness to pay \$300 for the house	Y	Y	Y	Y	Y
Willingness to borrow \$300 for the house	Y	Y	Y	Y	Y
Height of the house (ft.)	9	9	10	8	10
Size of the house (sq. ft.)	400	400-500	500-550	350-450	500
Size of the land (Sq. ft.)	650-700	600-700	600	600	650

A TYPICAL DAY

Morning	Afternoon	Evening	Night
<ul style="list-style-type: none"> •The day starts very early in the morning (4.30 - 5.30 am) with men folks who work going to the water source to bathe and get ready for the day •Women prepare food and start household chores. •Children who study leave for school. 	<ul style="list-style-type: none"> •Women do laundry, clean house, fetch water, collect fuel and prepare food. •Women after finishing their household chores, carry food for the men to the farms or to their respective workplaces. The children normally accompany them. •Men who do not work hang out at the Chaupal (village center). 	<ul style="list-style-type: none"> •Everyone return home before sunset. •Usually men on their way back pick up groceries and country liquor •Children attending school finish their work before sunset to save on kerosene which is needed by other members of the household for lighting esp. during cooking. 	<ul style="list-style-type: none"> •The family eats dinner and retires for the day usually by 8 to 9 pm. •Children eat with men, women eat once everyone has eaten. •Its common in some households for the entire family to consume alcohol.

[Compiled from the 15 surveys – the responses were remarkably similar]

SURVEY FEEDBACK

HOUSING: What are the biggest problems and challenges you face in terms of housing (rain, dust, lack of privacy, water, electricity, not enough space, etc.)?

RESPONSES FROM JHARKHAND STATE

- One of the biggest problems being faced by us is the size of our dwelling. We live in an extremely small accommodation made up of wood and thatch that does not suffice for all the members in the family. Because of this, some members of the family have to sleep out in the open at night. This is dangerous, as they are exposed to attacks from wild animals and poisonous insects. There are no windows in our house. This prevents sunlight from entering the house. Also, we neither have a private shower nor a private toilet. This forces us to live in extremely unhygienic conditions where one piece of land is used by the entire village to do their morning business. Because of the small size of the house, we do not have a separate kitchen. There is also lack of ventilation and sunlight. There is no electricity in our village. The only source of light is kerosene oil lamps.
- Our village is situated in a hilly area. Since the main door of the house does not have a latch, many a times wild animals come straight inside the house post sunset. The door of the house is also very weak.
- We do not have a kitchen in the house, so the cooking happens outside. Many a times birds poop into the dishes. And if we at times cook something non-veg, the fragrance attracts many wild animals.
- The only source of water for us is the waterfall. We have to go all the way down from the hills to fetch water and then carrying it back home, on the steep hills, is a problem.
- Since there are no toilets in the house, people have to walk all the way down to the waterfall, to freshen up. It's a distance of almost 2kms. At times holding on till that long becomes a problem.
- There is no mode of transport and absolutely no connectivity.

- There is no electricity in the village so the village becomes lifeless post sunset. No matter what the emergency is we have to wait for sunrise to take action.
- The living space in my house is too less. The height of the house is too short. The house gets no sunlight inside, so it's normally very dark. There are no windows, so there is no ventilation. Since the house is made of mud and has clay/mud flooring, scorpions, snakes, poisonous insects surface quite often. There is no kitchen in the house, so the food items kept in the open are often eaten up by the animals. Since the roof is made of mud, it keeps sprinkling. There are no toilets in the house and that is a big problem.
- My house is essentially made of mud, bamboo, plastic, wood. It needs renovation every 6 months. Ever since we have started living here, we have rebuilt this house a number of times. Now also, you can see, the roof is about to collapse. We have not been able to make a durable house till date.
- My house is very small. We cook inside our house. My house has caught fire once. The fire spread very fast as the entire house is made of combustible substances. There is no way we can control a situation like this.
- We have an electricity connection in our house. But the wiring in the house is done very dangerously. There are no proper cables. Many a times we, especially the kids in the house get electric shocks. I have lost two of my animals to electrocution.
- Although there is electricity in the village. The supply is very irregular. The current doesn't stay for more than 3-4hours and in case there is any fault in the transformer, the current doesn't come for many days together. However, the electricity bill doesn't fail to reach us. I had to sell off my cow to pay my electricity bill.
- We use the traditional gas chullah to make food and we make it inside the house. The traditional chullah produces a lot of smoke and since there are no windows in the house and no proper ventilation, the entire house becomes a gas chamber while cooking. We do not have any water connection or public well in the village. We have to go to a gentleman's house in the village who

has a private well. But if some argument happens with him, then we have to beg for water from our neighbors.

- There is no toilet in the house. We have to go to the jungle or railway track to do our morning business. We go there in large groups every day but in case someone needs to go during night time, it's a huge problem, especially for ladies.
- The roof of my house needs repair every six months and sometimes even less than that. Whenever it rains, the water seeps in through the roof and falls straight on our bed and other household stuff.
- The food is cooked inside the house and since there are no windows or cross ventilation provision in the house, the ladies have a tough time cooking food.
- As the house barely accommodates the family, there is no scope of privacy in it. There is a huge grain storage problem. Since we do not have any extra space to store grains, we tuck them into small spaces created little below the roof, in our house. If it rains, the grains rot. That's the reason we suffer huge losses. And also, since the grains are stocked inside the house, there are too many rats and sometimes snakes too are found inside the sacks of grains.

RESPONSES FROM BIHAR STATE

- My house is too small to accommodate 13 members of the family. It's so small and dingy that one doesn't even feel like getting in. it won't be incorrect to say that we don't live in our house, rather we stay around it.
- Buddhi Gandakriver flows near the village and causes flood almost every year. Our entire village got washed off last year by the flood waters. The houses in the village are mere structures built of thatch and mud essentially. The houses are very delicate.
- There is no electricity in the village. The day for us is not 24 hours, it's merely 13 hours as the life in the village is considered dead post sunset. There are no kitchens, toilets or bathrooms in the house. Life is too much of a challenge without these basic amenities.
- Our house is very small. It's too small to accommodate all the family members, so the menfolk generally stay out only. They sleep outside. And

the houses in the village are built in a cluster. The houses share walls. So there is absolutely no privacy. And moreover, if one house catches fire, the entire cluster gets charred. Likewise if one house collapses, so do the ones sharing walls with it.

- Summers are still fine, the problem comes during winters, where staying out is virtually impossible. We cannot cook outside if it rains and since we do not have a kitchen or any extra space inside our house to cook, we have to stay without food.
- There have been times when the roof of the house collapsed even before we could realize and people in the family have got hurt. We need a durable house.
- There are no private showers or toilets and this is a huge problem. There is no electricity in the village so if someone needs to visit the toilet during night time, it's very scary and risky as there are too many snakes and poisonous insects in the village.
- Since there is no electricity in the village, we have to wrap up the day before sunset. No one steps out of the house after the sunset. If there is an emergency in the village, for example if someone hurts himself or gets seriously unwell, it's next to impossible to take him to the doctor as there is no mode of transport. We are forced to wait till the dawn breaks. There have been cases where people have died because they could not get treated on time.
- Our houses are not very durable. The village is often flooded during rainy season. Everything gets swept off, our houses collapse quite often. River Ganga flows close by, whenever the water level rises and the river gets flooded, the village gets very adversely affected.
- There is no kitchen in the house, so the cooking takes place outside the house. We use a chullah made of mud to make food, so every time it rains, we have to stay without food as we cannot light the chullah! The firewood gets all wet during rains, so do the grains stored in the house. We store them in our house, as there is no additional space for storage. Snakes, Scorpions

are a common sight in the house as the flooring is made of clay. Many other poisonous insects come with the river water.

- The entire village has only one well that caters to 2,000 people approx. The village is mostly famine stricken therefore there is a major water shortage in the village and this is a big problem. There are times when we have to go to the nearby village to fetch water.
- The village is very poorly connected. The roads are in extremely bad condition. The only connectivity is the railways.
- My house is very small in height, it's hardly 4 feet. It's totally dark from inside and the roof is also damaged. Every time it rains, the mud used in making the roof melts and the roof collapses. Since my house is largely made of mud, every time water falls on its walls, they change shape. My house is adjacent to a pucca house, at times water falls from that house straight onto my roof and it gets damaged. Ever since we have built this house, it has collapsed many a times.
- I had two cows and one goat till four years back but I had to sell them off because there was no place to give them shelter in my house.
- My house is very small, there are 7 members in the family, we have absolutely no private space. There is no toilet in the house. Therefore all the members have to go out in the fields, irrespective of the time of the day.
- My house is made of unbaked bricks and the roof is made of thatch. So, it's very delicate. My house has collapsed so many times. I happen to be the leader (Mukhiya) of the village, if this is the condition of my house, you can very well image the condition of the villagers.
- Our village gets swept off during heavy rains. It has been hit by floods so many times. All our belongings, our people get swept off. These houses cannot hold on to the ground in extreme conditions. They literally get uprooted. And during wind storms, the roof of the house gets blown off.
- There is no electricity in the village. Electric poles are there but there are no wires to connect them. Our village is in a very bad state.
- There is no proper shelter for our animals. They often die because of improper care.

RESPONSES FROM UTTAR PRADESH STATE

- The biggest challenges under this sub head are Electricity, safe drinking water, rain and floods. There is a water storage tank in the village but for the past 7-8 years, there has been no water supply through that. The public toilet facility provided by the government is not enough to cater to the population in the village and the maintenance of these toilets is also not proper.
- There is electricity in the village but the daily supply is not for more than 5-6 hours. If the supply gets disrupted due to some technical fault, at times it takes days together to get the problem fixed. The development in the village is very poor. The village is just as developed as it was twenty years before. This, despite the fact that Mangat Kheda is a village that connects the nearby villages. There are no toilets in the area and no sewer system.
- The biggest problem is that whenever it rains too heavily, the water from the river flowing nearby floods our houses. And this is the reason why we build our houses on elevated platforms.
- The village has electricity but it does not stay for more than 4-6 hours a day. And if some fault occurs in the electricity board, we have to stay without it for days together. There is no development taking place in the village. Whatever money is sanctioned by the government for developmental purposes, it never reaches the people.
- There are no toilets in the village and that is a big problem as far as health and sanitation are concerned.
- The houses get flooded during heavy rains as the roofs are porous and water level in the nearby river rises and enters the houses. Many a times our houses get completely washed off by the river. Our houses get damaged very badly due to rains and heavy dust storms. This water takes months together to dry down completely. This makes movement in the village very difficult.
- There is no electricity in the village so the village becomes lifeless as the sun sets. We use kerosene lamps but in case we run short of kerosene, we are forced to stay in the dark.

- There are no proper toilets in the village. The traditional latrines constructed by the government are poorly maintained. Therefore, half the population in the village prefers doing their morning business out in the open.
- The weather condition in the village is extreme. The temperature usually is very high. So, the houses remain heated all through the day. And despite their being the provision of grid electricity in the village, the supply is for not more than 6-7 hours. And if some technical fault happens then the electricity supply is disrupted for many days together.
- There are no toilets in the village and that is a big problem because then all the villagers have to go to the fields for their morning business.

CONSTRUCTION AND ENGINEERING: Who designed and constructed your house? Where did you get the materials for your house? Would you be interested in training related to proper design and construction techniques?

RESPONSES FROM JHARKHAND STATE

- My father constructed the house initially. But I, along with my cousins have renovated it many a times since then. We do not understand any design or construction technique. We construct the house based on our knowledge and understanding of it. The Khapra we use to make the roof, is bought from the nearby village, rest everything required to build the house is available in our village. I don't have the time to learn new construction techniques but I am not completely averse to the idea.
- The house is designed by us and was constructed by all the members of the family together. It is made up of wood, thatch and khappada. Of these, wood and thatch are available in our village. But, we have to travel to other villages to get khappada which is extremely essential for making the roof of the dwelling. Since we do not have any formal training in design and construction techniques, the houses we build do not last for long and collapse frequently. Therefore, we would appreciate it if someone could train us in these techniques so that we can build stronger and long lasting houses.

- We do not follow any designs, techniques or patterns to construct houses. This house was built by my grandfather. The materials required to build the house are gathered from the village and sometimes even neighboring villages and forests. I would love to learn new construction techniques as long as they are cheap.
- The construction of the house was done by my father. He did not follow any design or technique.
- The foundation of this house was laid by my grandfather. We have constructed and reconstructed this house several times since then. We have never followed any design or pattern to build it. Whatever material is required to build the house is easily available in the village. I would be very keen to learn new construction techniques and design and build one durable house for my family.

RESPONSES FROM BIHAR STATE

- I built this house after it got washed off last year by the flood waters. I have not followed any construction technique or design, I don't know any. I have made this house with the help of my family members and fellow villagers. I would love to learn new techniques and make a durable house.
- The family members got together to build the house. We don't know any designs or techniques to build the house. Had we followed a pattern, we would've been able to build durable houses. We would love to learn new ways of building a durable house.
- The family members only get together to build the house. No technique or design is followed. The mud, sand used in making the house is brought from the bank of river Ganga, rest the wood and stones can be collected from the forest. The remaining material can also be gathered from the village itself.
- My grandfather constructed this house. The mud/clay used to build the house was taken from around the pond nearby, the wood/bamboo used is taken from the forest. And the remaining material is also gathered from the village itself. I would love to learn new techniques but there is no time to do that.

- This house was constructed by my grandfather initially, then my father rebuilt it after it collapsed and then I had rebuilt it when it collapsed again. The renovation of the house is like a routine exercise. The material required to build the house is collected, bought from the neighboring villages. To reach those villages we have to cross river Ganga and that costs us money.
- If the new construction technique promises a cheap and durable house, I would learn it and ensure that the people in the village learn it too. This village has been home to former Bihar Chief Minister Rabri Devi but still there has been absolutely no development here.

RESPONSES FROM UTTAR PRADESH STATE

- No proper design or technique is followed to construct the house. The houses are built by the villagers themselves. And the houses are constructed with the material that is cheap or freely available such as wood, thatch, unbaked bricks, and mud. We would surely want to learn new techniques to build durable houses so that we are not forced to rebuild our houses every time there are heavy rains or wind storms in the village.
- Nobody designed our house. It was constructed by my grandfather with whatever knowledge he had about construction. I would certainly want to learn new and innovative techniques to reconstruct the same house.
- My forefathers built this house themselves and whatever wear and tear has happened over the years, we have fixed it ourselves. We'll be very keen to learn cheap and innovative ways to build and repair our houses.
- There are no designs or techniques followed in the construction of the houses in the village. The houses in our village are largely kuchcha houses, with very few pucca houses in the village. The kuchcha houses are constructed by the villagers themselves, with whatever little bit of understanding they have about construction. However, the pucca houses are built with some professional help. The roads are made of bricks. There are drains in the village but the sewer system is very bad.
- We took some professional help to build this house but it was largely constructed by my grandfather. The materials required to construct the

house were gathered from the village itself. It would be great help if we could learn new techniques to improve the construction and design of the house.

HEALTH: What are the major health issues in this community? Can a house incorporate features that could address the health issues (portable water, sunlight, ventilation, mosquito nets, etc.)?

RESPONSES FROM JHARKHAND STATE

- Health is the biggest problem in our village. Excessive alcohol consumption is the reason why men in the age group of 35-40 years die at an early age. That's the reason this village is famous as Widows' Village. Rest I do not understand the reasons that cause ill-health.
- As mentioned earlier, there are no toilets in our village. The entire population of the village attends to the nature's call out in the open. The pets frequent these places and carry innumerable diseases that are then transferred to their owners when they come in contact with these animals. There is an absence of waste disposal system. Also, since there is scanty rainfall in our part of the country, we have to depend upon the waterfall near our village for all our water needs. It takes about 20 minutes to get water from this waterfall. This is highly inconvenient as the water is not readily available. Moreover, this water is not treated and is unfit for drinking. But, the villagers have no option but to use this water for drinking and bathing. The continuous consumption of contaminated water has an adverse effect on the health of the villagers. Some of the ways to address these issues include providing for private toilets and proper waste disposal system. Moreover, providing for windows with mosquito nets could prevent the entry of poisonous insects from entering the house. Educating people about the use of potassium permanganate to treat water at home could also help them prevent diseases.
- There is no hospital in this village. The villagers prefer going to tantriks than doctors. Many of the villagers suffer from TB and lung infections, Asthma as

this village is located amidst coal mines and there is too much carbon presence in the air.

- The water used for washing and bathing purposes is dug out of coal mines. It is treated in a plant before being made available but is full of impurities still and is black in color. The use of this water is very harmful for the skin and health. My own father succumbed to a deadly waterborne disease and passed away few years back.
- Our village is surrounded by coal mines. The air is full of carbon emitted by these coal mines. This is the reason why most of the villagers suffer from lung infection, asthma, cough, tuberculosis, eye infections. The houses are small, not enough to accommodate 7-8 members in the family. We spend most of our day outside the house, even at night, we prefer sleeping out in the open. This is the reason why the carbon intake is so much. And hence, airborne infections and diseases are rife in the area.
- There are no private showers in any of the houses in the village. So everyone is forced to use the impure water made available from the mines or that collected in the nearby pond for bathing and other purposes. Therefore, we mostly suffer from skin and other fungal and bacterial infections.
- We never get to understand the reason for our sickness. We work very hard through the day and then just crash. We consider ourselves sick only when we have to be rushed to the hospital. I would not know how a bigger and better living space would help in improving health standards.

RESPONSES FROM BIHAR STATE

- Every time the village gets flooded, epidemic spreads. It brings with it many deadly diseases. The drinking water also is highly unsafe and causes stomach infections, poisoning. Water logging is a huge problem. Stranded water becomes breeding ground for mosquitoes and many poisonous insects.
- We never get to understand the cause of health problems. And by the time we realize that there is a serious problem, the patient dies.
- Malnutrition is a common problem among children in the village. Unsafe drinking water is another problem that leads to various stomach infections.

There are no medical centers in the village. Since water logging is a common problem, it's a breeding ground for mosquitoes.

- The biggest problem is unsafe drinking water. There is only one public well and that too is full of mud. We do not have any mode of filtering the water. If it appears too filthy, we use a cloth to filter the impurities. Due to dirty water consumption, digestion problems and stomach infections are a common problem.
- There are no bathrooms in the house, so we normally go to the nearby pond for bathing. Animals too bathe at the same place, this leads to many bacterial and fungal infections on our skin.
- The flood water that drowns the village causes epidemic. It brings with it many life threatening diseases. This is the major cause of worry. If we have strong, durable houses that can guard us during floods, many of such problems can be averted.

RESPONSES FROM UTTAR PRADESH STATE

- The major health problems surface during the rainy season as there is too much water in and around the house which become a breeding ground for mosquitoes. The roof of the house is so porous that water seeps into the house and spreads all over and enters areas where it becomes difficult to drain it out.
- Unhygienic Drinking water: Water borne diseases are a common problem in this area because the water that is used for consumption is taken from the well and is not treated before drinking or making food.
- There is a government dispensary in the village but doctors hardly come there. The medical provisions in the village are very limited. There are no doctors available during night time. And the available doctors are also not qualified.
- There are no medical centers in the village. There is no provision of safe drinking water. There are no Toilets and no sewer system. All these factors lead to various kinds of health issues.

- Unsafe drinking water, water logging that becomes breeding ground for mosquitoes, unhealthy eating habits, malnutrition are some of the biggest health problems in our village.
- The stagnant water during heavy rains poses great threat to the health of the villagers. It becomes breeding ground for mosquitoes that spread deadly diseases such as malaria, dengue etc. Improper drainage system and poor sewer system gives birth to various kinds of bacteria and viruses. Unsafe drinking water is another problem that leads to many water borne diseases such as diarrhea, jaundice etc.
- There are no proper health centers or hospitals in the village. Therefore, we have to rush to the city in case of emergency. Our house does not have proper ventilation and therefore it feels very suffocated at times to stay in here. Since the roof of the house is not at a proper height, the area and space in itself makes you feel unhealthy. If there is some sort of stink in the house, it stays inside for hours together as there is not outlet for it.

EDUCATION: What are the major challenges in education? Would improved living space help to address education? Is there a school in your village?

RESPONSES FROM JHARKHAND STATE

- People in the village are mostly illiterate and the ones who have studied, haven't continued after 8th or 9th grade. The biggest reason for discontinuation of education is that the schools are too far and there is no mode of transport available in the village. If we have ample space in our houses, we can have classes in our houses itself. Education also suffers because there is no electricity in the village. And generally there is only one kerosene lamp in the house, so that could either be used by the children to study or by the adults to either make food or do other household work. Who knows what all they study in their class in school and whether they do their homework or not? There is no one to guide them
- Our village is located at a height of 4,200 feet from the ground level. There is only one middle school in our village. Other schools are at a great distance

from our village. More than the schools, there is a lack of motivation in the children to study as they are unwilling to travel such distances only to attend school. The government has promised to provide a job to anybody who completes his/her education till 10th grade. But, this has also failed to motivate the people to go and study. Moreover, there is lack of proper infrastructure in the village and at homes for children to study. The houses are extremely small with more than 5 people residing in about 100 sq.ft. of space. Therefore, having a proper study table is out of question. There are no windows for the sunlight to enter the house. The only source of light is oil lamp which can't be lit for long as the villagers cannot afford to buy large quantities of oil to be put in the lamps. Therefore, there is a dire need for an improvement in the living conditions of the people.

- Level of education is very poor. Not even a single villager has passed 10th grade. This despite the fact that the state government has announced that any villager passing the 10th grade would directly be recruited in a government job. Even that is not lucrative enough for the people here. There is only one middle level school, that too is located at the other end of the village. People just don't want to study here.
- The education level is very poor. There is one middle school and one high school in the village. The middle school is located at a distance of one kilometer, while the high school is about 4 kms. Students have to walk their way to the high school as there is no mode of transport. For higher studies, students have to go to towns like Hazaribagh, 40kms and Ranchi, 55kms. Reach to the schools is a problem.
- I don't know what are the main challenges in education. I am illiterate but I send my children to school. There is no school in our village. My children have to travel a lot to reach their school everyday.

RESPONSES FROM BIHAR STATE

- Education is very very poor. There is one middle school but there are no teachers. This village is very backward. Those who want to study move to the city.

- This village is very backward. Education rate is almost zilch.
- Education is in a very bad state. Anyone who wants to study has to move out of the village and stay in Patna for there are no schools/colleges in the village.
- There is a primary level school in the village. For higher education, we have to go to Kajra station, which is 40 kms away from Navkadeeh. It takes one hour by train to reach there. The houses are so small that there is no space to sit in the house and study. And the electricity supply is also very poor, so one cannot study post sunset.
- The level of education is very poor. The village mostly has the Yadav Community as its inhabitants and Yadavs are usually into dairy business. They do not appreciate education as the son takes to father's business when he grows up. Calculating money is all he needs to learn. The ones who want to study move to Patna. There is one middle level school in the village but not many children go there.

RESPONSES FROM UTTAR PRADESH STATE

- The level of education is very basic. There are junior level primary schools till 8th grade in the village. For senior education the students have to go to the cities.
- People in the village are so poverty stricken that they do not find it important to study. We'd rather earn money than spend on education. And those who want to study, leave the village and go to the cities.
- 80-90% of the village is illiterate. The level of education is very poor. There are no proper schools in the village. There is only one government school and that too is only till 8th grade. Poverty is a big issue and due to this people don't prefer sending their children to schools. Children are seen as extra working hands.
- The population in the village is largely uneducated. There is not even a single school in the village. Children have to go 2 kms away from their village to seek education.

- The major challenges in education are the quality of education being imparted in the schools and also the unwillingness of many to go to the school. People in the village are poverty stricken and therefore, choose work over education. I don't know how improved living space would help address education. 60-70% population is illiterate.

JOBS: What kind of work do you do? What are the biggest challenges in terms of earning a living? How can a house improve your ability to earn a living? How can the design and construction of the house create jobs and/or job skills?

RESPONSES FROM JHARKHAND STATE

- I am the village leader (Gram Pradhan). Unemployment is big problem in the village. That is the reason why every second household is running a brewery of country made alcohol. The villagers are not literate, therefore, apart from fewer opportunities, there is lack of qualification. The women in my household make a lot of products including baskets made from bamboo. If there is enough space in my house, I can give employment to villagers and expand my business.
- I am a government employee working as the head of this village. My job includes redressing the complaints and grievances of the villagers.
- Unemployment is a big problem in the area. I am unemployed. People are not educated so finding a job elsewhere is also a problem. Most of them end up being daily wage workers, rickshaw pullers and so on. I don't think the construction or design of a house can do anything to create jobs.
- I am unemployed, but I am a social worker. People in the village normally aim to get a government job, failing which, they indulge in illegal coal mining. If I have space in my house, I can open a tuition center.
- There are no employment opportunities in my village. I too have to go to a neighboring village, Kujju for work. I work in the coal mines as a daily wage worker. I need a proper house to live in first, creating jobs/jobs skills from a better house comes much later. But if I have more space in my house, then I

will buy a VCR (Video Cassette Recorder) and play Bollywood movies for my fellow villagers and make money out of it as there is no cinema hall in my village.

RESPONSES FROM BIHAR STATE

- I am a daily wage worker. People hire me to work for them in an around my village. Mostly the people go to Baghan, the neighboring city to search for work. If I get a nicely constructed house, I would rent out a portion for a departmental store or a medical store.
- I am a wood cutter. I cut wood and sell it in my village and the nearby villages. There are no employment opportunities in the village. If I have a better and bigger house, I will take loan and buy two cows and then sell dairy products.
- I am a daily wage construction worker in Patna. There are no employment opportunities in the village so everyone has to go to Patna to earn a living. Villagers generally work as rickshaw pullers in Patna. If there is ample space in my house, I could open a small departmental store and make a living.
- I am a daily wage construction worker. I work in Faridabad these days. The biggest challenge for me is to earn and build a house for myself. Unemployment is a big problem in my village. Therefore I had to move out of my village to earn a living. Had there been ample space in my house, I wouldn't have sold my animals. If I had them today, I would've sold dairy products and earn a living while staying in my village itself. If the design and construction of the house could guarantee enough parking space for my animals, it would've opened new avenues of income for me.
- There are not many employment opportunities in the village. Government has schemes for the villagers but since most of them are illiterates, they are never able to benefit out of them. The Yadav community in the village is mostly into animal breeding and dairy farming.

RESPONSES FROM UTTAR PRADESH STATE

- I am a farmer. People in the village are largely dependent on farming for a living. However, some people also work in the leather and wine factories located on the outskirts of the village. There are people who are running illegal liquor breweries in the village. The average income of people in the village is about INR 100- INR 150 per day. If we get ample space in the house, we can open small departmental stores or may be a small boutique or salon in one corner of the house, which could add to the family income.
- I work in a brick making factory. The biggest challenge in terms of earning a living is lack of education.
- I am a farmer. Since we are uneducated people, we often get cheated by people in our trade. We at times end up paying more for the same product or we do not get the rates that we deserve for our produce. If we have a smartly constructed house, then we can offer the extra space to teachers who can teach illiterate farmers like us about the new and advanced techniques for farming.
- I work in a leather factory as a daily wage worker. The biggest challenge in terms of earning a living is illiteracy. We cannot get a highly paid job because we are illiterate people. The maximum we can ear per day ranges from INR 100- INR 150. If we get ample space in a house, we can open a small grocery store or rent out that space for a shop or may be to a tenant and this could add to our family income.
- I work as a driver in a factory. The biggest challenge would be illiteracy. If I have a bigger living space, I would rent it out and earn some money.

OPINION: What is the most important issue or challenge faced by your community? How can/should it be solved?

RESPONSES FROM JHARKHAND STATE

- Unemployment is the biggest challenge faced by our community. If small scale/cottage industries are introduced in the village, it could generate more employment opportunities.
- The most important challenge faced by our community is the lack of education. All other evils stem from this problem. Construction of a school and more importantly motivating the people to attend school can help resolve this issue. Also, improved living spaces can play a major role in tackling this problem. Bigger living space would help create an environment where the students will have some amount of privacy and can study without any interruption and distraction.

RESPONSES FROM BIHAR STATE

- Housing is the biggest problem. We construct houses every year only to reconstruct them after floods wash them off. If we could build pucca houses, it could help contain our problem.
- The biggest problem is housing. We have houses which are mere structures. They are as good as non-existent. We are virtually homeless people. Whatever little bit we earn, we have to spend a portion of it on our house.
- The biggest problem for us is unemployment and housing. If we could have a spacious and durable dwelling, life could be much simpler.

RESPONSES FROM UTTAR PRADESH STATE

- The biggest challenge faced by our community is lack of education, unemployment. It can be solved if there are schools in the village. Another challenge is health and sanitation. We should be provided with proper medical facilities and clean drinking water.
- The biggest issue for our community is housing, health and sanitation. If we get clean drinking water and a proper drainage, sewer system, we could possibly avert a lot of health hazards.

- The biggest challenge faced by our community is backwardness in terms of development. This can be solved only if the government checks the fact that the grants issued and the money sanctioned for the development and welfare of the village reached the village too.

THE IDEAL HOUSE

What are the most important requirements in a house? Every requirement may add extra cost. Classify your requirements as follows: 0=Not Needed; 1=Not essential but Nice to Have; 2 =Necessary; 3=Very Necessary and Critical.

Exhibit 8: Summary of Requirements

	Not Needed	Not essential but nice to have	Necessary	Very Necessary
Sunlight			X	
Ventilation			X	
Two rooms				X
Three rooms			X	
Private showers		X		
Private toilet				X
Communal toilet			X	
Secure front door			X	
Running water			X	
Electricity				X
Resistance to heat			X	
Resistance to heavy rains/floods			X	
Resistance to fire			X	
Water tank			X	
Sink	X			
Kitchen			X	
Small porch		X		
Steps in front to prevent mud/rain			X	
Gutter/barrel to collect rain water			X	
Outdoor living space			X	
Small plot for farming/livestock			X	
Secure storage space				X

Exhibit 9: Summary of Requirements (Jharkhand)

Most important requirements in a house	Jharkhand				
	Family 1	Family 2	Family 3	Family 4	Family 5
<i>Sunlight</i>	2	1	1	3	2
<i>Ventilation</i>	1	2	2	2	2
<i>Two rooms</i>	3	3	3	3	3
<i>Three rooms</i>	2	1	2	3	3
<i>Private showers</i>	1	0	1	2	1
<i>Private toilet</i>	3	3	2	3	3
<i>Communal toilet</i>	1	1	2	2	2
<i>Secure front door</i>	2	2	2	3	3
<i>Running water</i>	2	1	3	2	3
<i>Electricity</i>	3	3	3	3	2
<i>Resistance to heat</i>	1	1	2	2	2
<i>Resistance to heavy rains/floods</i>	1	3	2	1	0
<i>Resistance to fire</i>	2	3	2	3	3
<i>Water tank</i>	1	1	2	2	3
<i>Sink</i>	0	0	0	1	1
<i>Kitchen</i>	2	3	2	3	3
<i>Small porch</i>	0	1	0	1	0
<i>Steps in front to prevent mud/rain</i>	1	3	1	3	1
<i>Gutter/barrel to collect rain water</i>	1	1	2	1	2
<i>Outdoor living space</i>	1	2	3	2	3
<i>Small plot for farming/livestock</i>	2	3	3	3	3
<i>Secure storage space</i>	3	3	3	3	3

Data Source: Rural Housing Survey India, THL- Sep. 2011

Exhibit 10: Summary of Requirements (Bihar)

Most important requirements in a house	Bihar				
	Family 6	Family 7	Family 8	Family 9	Family 10
<i>Sunlight</i>	1	1	1	1	1
<i>Ventilation</i>	2	1	1	1	2
<i>Two rooms</i>	3	3	3	3	3
<i>Three rooms</i>	1	2	2	2	1
<i>Private showers</i>	0	2	1	1	1
<i>Private toilet</i>	3	3	3	3	3
<i>Communal toilet</i>	1	2	1	1	2
<i>Secure front door</i>	2	2	3	3	2
<i>Running water</i>	1	1	1	1	1
<i>Electricity</i>	3	3	3	3	3
<i>Resistance to heat</i>	1	3	2	1	1
<i>Resistance to heavy rains/floods</i>	3	2	3	1	3
<i>Resistance to fire</i>	3	2	2	3	3
<i>Water tank</i>	1	2	2	2	1
<i>Sink</i>	0	0	0	0	0
<i>Kitchen</i>	3	3	2	2	2
<i>Small porch</i>	1	0	1	0	1
<i>Steps in front to prevent mud/rain</i>	3	2	3	2	2
<i>Gutter/barrel to collect rain water</i>	1	2	2	0	1
<i>Outdoor living space</i>	2	3	3	2	1
<i>Small plot for farming/livestock</i>	3	3	3	3	2
<i>Secure storage space</i>	3	3	3	3	1

Data Source: Rural Housing Survey India, THL- Sep. 2011

Exhibit 11: Summary of Requirements (Uttar Pradesh)

Most important requirements in a house	Uttar Pradesh				
	Family 11	Family 12	Family 13	Family 14	Family 15
<i>Sunlight</i>	2	3	2	2	3
<i>Ventilation</i>	2	2	2	2	3
<i>Two rooms</i>	3	3	3	3	3
<i>Three rooms</i>	2	2	1	2	2
<i>Private showers</i>	1	1	1	1	2
<i>Private toilet</i>	2	2	2	2	2
<i>Communal toilet</i>	2	1	2	2	2
<i>Secure front door</i>	2	2	2	2	2
<i>Running water</i>	2	2	2	2	1
<i>Electricity</i>	2	2	2	3	3
<i>Resistance to heat</i>	1	2	1	2	3
<i>Resistance to heavy rains/floods</i>	2	2	3	3	2
<i>Resistance to fire</i>	1	2	2	1	2
<i>Water tank</i>	2	2	1	2	2
<i>Sink</i>	1	1	1	1	1
<i>Kitchen</i>	1	2	2	1	1
<i>Small porch</i>	0	1	1	1	1
<i>Steps in front to prevent mud/rain</i>	2	2	2	2	1
<i>Gutter/barrel to collect rain water</i>	2	2	2	2	2
<i>Outdoor living space</i>	1	3	1	2	2
<i>Small plot for farming/livestock</i>	1	2	1	1	3
<i>Secure storage space</i>	2	2	3	3	3

Data Source: Rural Housing Survey India, THL- Sep. 2011

Willingness to Pay for Basic Services

While all respondents are willing to pay for electricity, almost all declined to pay for entertainment and waste disposal. For all other services the response was largely mixed. In India, the rural masses expect the government to provide free water, sanitation, school education, primary healthcare and waste disposal. The willingness of a high percentage of respondents to pay for basic education is a very important pointer. This trend strongly suggests that this group sees education as an important factor that can help improve their living standards.

Exhibit 12: Willingness to Pay (Jharkhand)

Jharkhand	Family 1	Family 2	Family 3	Family 4	Family 5
Water	No	No	No	Yes	Yes
Sanitation	Yes	Yes	No	No	No
Basic Education	Yes	Yes	Yes	Yes	Yes
Basic Healthcare	No	Yes	No	No	No
Electricity	Yes	Yes	Yes	Yes	Yes
Entertainment	No	No	No	No	No
Waste Disposal	No	No	No	No	No

Exhibit 13: Willingness to Pay (Bihar)

Bihar	Family 6	Family 7	Family 8	Family 9	Family 10
Water	No	No	No	Yes	No
Sanitation	Yes	No	No	No	No
Basic Education	Yes	Yes	No	Yes	Yes
Basic Healthcare	Yes	No	No	No	No
Electricity	Yes	Yes	Yes	Yes	Yes
Entertainment	No	No	No	Yes	No
Waste Disposal	No	No	Yes	No	No

Exhibit 14: Willingness to Pay (Uttar Pradesh)

Uttar Pradesh	Family 11	Family 12	Family 13	Family 14	Family 15
Water	Yes	No	Yes	Yes	No
Sanitation	No	No	Yes	Yes	No
Basic Education	Yes	No	No	Yes	Yes
Basic Healthcare	Yes	Yes	No	No	Yes
Electricity	Yes	Yes	Yes	Yes	Yes
Entertainment	No	Yes	No	No	No
Waste Disposal	No	No	No	No	No

CONCLUSION

Every human being on this planet deserves access to the basic necessities of living in a clean and safe house that has essential features like running water, electricity, and privacy. In addition to providing a house that has these features it is also important that an ecosystem is established that provides necessary facilities such as clean running water, uninterrupted power supply, easy access to clean fuel, basic healthcare and good primary education.

The survey shows that all respondents are willing to borrow money to buy a \$300 house that has the features they are looking for. Creating a micro finance product that enables these families to borrow money will be critical for these families in realizing their dream of living in a 'real house'.

APPENDIX- Snapshots of Current Living Conditions















For more information, email info@threeheadedlion.com