2022 Mahabai Community Development Report

THE ODA FOUNDATION

About The Oda Foundation

The Oda Foundation (OF) was co-founded in 2013 by Kalikot native Karan Singh and American citizen John Christopher. Named after its location in the village of Oda, the Foundation is a government-registered NGO in Karnali Province with a 501(c)(3) arm in the US, which contributes to its community development work. From starting in healthcare in 2013, Oda Foundation's work now expands to education, community empowerment, programs supporting youth and women, and sustainable agriculture.

In this rural community, where livelihood has traditionally depended on subsistence farming and wage labor in India, the Oda Foundation's multi-pronged approach makes positive change amidst extreme challenges in health, education, and livelihood.

Author Information

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Background

The 2022 Mahabai Community Survey was conducted to monitor and evaluate community development. In order to measure progress systematically and accurately, the methodology and survey coverage area match those of the 2017 Odanaku Household Survey. **The aim of the survey was to identify gaps in progress and opportunities for intervention and advocacy.**

Methodology

Structured interviews were conducted in February and March 2022. Each interview was approximately 20 minutes in duration and followed a set questionnaire. All interviews were conducted in Nepali and responses recorded in English.

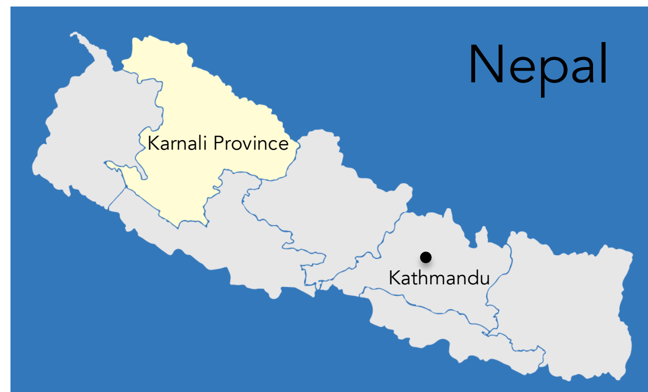
The survey included multiple choice, yes/no, and open-ended questions. Pairs of interviewers from the Oda Foundation (OF), including at least one native Nepali speaker per pair, aimed to interview one member from every household in the Mahabai-2 municipality (Oda) plus those from one other village, Padamghat (Padmaghar). For the purpose of this report, the coverage area will be referred to as Oda. The survey coverage area was not comprehensive of the Mahabai municipality, but there is opportunity to expand the survey coverage area in the future. In total, 229 individuals were interviewed (175 women, 54 men) representing a population of 1,596. Data from an estimated 15 households are not included because no one was home at the time of surveying.

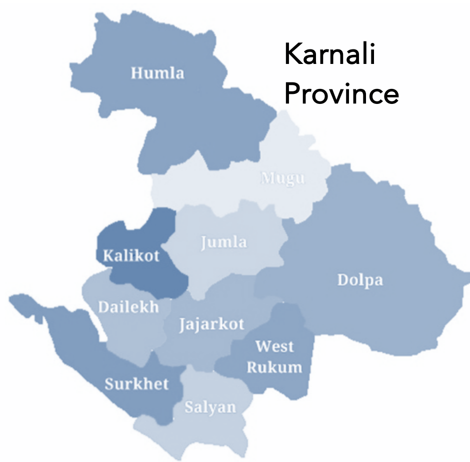
Survey respondents were read a consent statement at the beginning of the interviews explaining the purpose of the survey and ensuring that their answers or refusal to participate would not impact their ability to receive support from OF. No households declined to participate.

Question topics included demographics; household amenities; agriculture and nutrition; water, sanitation, and hygiene (WASH); lifestyle; health behaviors; perceptions of OF; and community improvement. Factors that may have impacted the accuracy of the data include the inability to reach every household, frequent changes in population due to migrant labor, and low literacy rates among respondents.

Survey coverage area

The village of Oda is located in the Kalikot District, Karnali Province of Nepal. Karnali is Nepal's largest province in terms of area, but due to its remote nature and difficult terrain, it has a relatively small population of about 1.5 million–6% of the total country population. Nearly 30% of Karnali's population live below the poverty line, and the literacy rate is 62%. The average life expectancy is 67 years, the lowest of all Nepal's provinces. Nutrition and sanitation are also challenges, as 58% of children under five years are malnourished, 36% of the population do not have access to safe water, and only 50% of households have proper toilet facilities.[1]





Villages in Kalikot District are no exception to the trends of Karnali. Oda and surrounding villages are accessible by one road, which can be reached only after 2-3 hours of walking. Residents of the Mahabai municipality face significant education, health, and income challenges as well as other difficulties that come with extreme remoteness such as access to facilities, government resources, malnutrition, and caste inequality.

Results

Demographic information

The total population of the surveyed households was 1,596: 799 males (50.06%) and 797 females (49.94%). At approximately 15 households, no one was interviewed. The average household size of those surveyed was 7 people, so the actual population of the surveyed area is likely around 1,700. However, this report will only refer to the data that was collected for the 1,596 people.

[1] United Nations Development Program Nepal. 2020. Karnali Baseline Report. https://un.org.np/sites/default/files/doc_publication/2020-12/UNDP-NP-SDG-Baseline-Report-Karnali-Eng.pdf

Of the 1,596 total surveyed population, 641 were children under 18, making the population approximately 40% children. For the purposes of this report, "household" is used to refer to one family unit, not necessarily one house. The survey covered 214 *houses* and 229 *households* (i.e., at 10 houses, participants reported two or more families living under the same roof). The average number of people living under one roof was 7.42, while the greatest number of people living under one roof was 30, in a house where four separate families cohabitate.

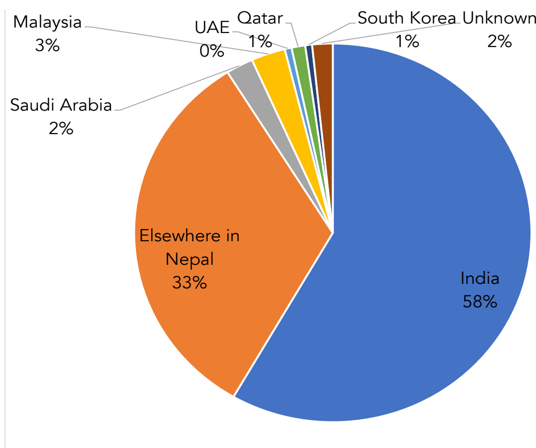
Data on caste was also collected. There are three main castes in the area: Dalit (the "untouchable" caste), Thakuri, and Brahmin. Although caste discrimination was made illegal in 2011, elements of the historical hierarchy are still evident in modern Kalikot. Table 1 shows the caste breakdown of the surveyed population. Thakuri (sometimes counted as Chhetri) make up nearly 64% of the population, while Dalit are also a significant portion of the population at 26%. About 10% of the population is Brahmin, and only 2 families, or less than one percent of the population, are Magar caste.

Table 1. Surveyed population by caste

Caste	Number of households	Total population	Percent of population
Dalit	62	420	26.32%
Thakuri	147	1,017	63.72%
Magar	2	7	0.44%
Brahmin	18	152	9.52%
Total	**229**	**1,596**	**100%**

As opportunities for work and education are limited in Oda, many residents migrate elsewhere for at least part of the year. Survey respondents reported a total of 286 people as absent from 131 households, meaning 57.21% of households have at least one member absent. Of the total 286 absent people, 180 absentees were absent for work, 78 for education, and 28 for other reasons. As shown in Figure 1, the destination of people who were absent for work is most commonly India (58.33%), followed by other cities or villages in Nepal (32.78%), Malaysia (2.78%), and Saudi Arabia (2.22%). For 1.7% of migrant workers, the survey participant did not know their location. Less than 1% of those working elsewhere are in South Korea or the United Arab Emirates. These migrant workers commonly send remittances to their families in the village.

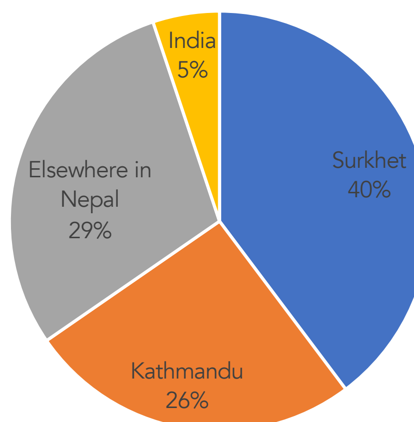
Figure 1. Destination of those absent for work



Of the 78 people absent for education, 94.87% remain in Nepal. As Figure 2 shows, it is most common for students to go to Surkhet (39.74%), a district neighboring Kalikot. 25.64% of those absent for education were studying in Kathmandu, and 29.49% were in other Nepali villages or cities including Palpa, Nepalgunj, Manma, Dailekh, Dillikot, and Pokhara. Only 5.1% were in India.

28 people were absent for reasons besides work or education, such as medical care or looking after a family member.

Figure 2. Destination of those absent for education



Sources of income and livelihood

There are few sources of income and livelihood in Oda. Table 2 below shows the breakdown of income sources. Note that many families have more than one source of income, so the total percent of households is greater than 100. Nearly 80% of households farm land and around 50% raise animals. Some of these families also sell agricultural or animal products, but not all. People most commonly raise cows, water buffalo, chickens, and goats.

As mentioned, many families send a member abroad for remittances; 33.19% of households do so (note, however, that 78.60% of families have a member working elsewhere either domestically or abroad). Small shops are sprinkled around the village, although they are much more common in Padamghat, where there is a paved footpath. 37 of the 229 households surveyed own a shop. Due to the remote nature of the surveyed area, all food products, medicines, construction materials, etc. need to be carried in. Thus, people commonly work as porters on an ad-hoc basis. Other ad-hoc labor work such as construction is another source of employment. Other sources of income include tailoring, teaching, carpentry, renting out property, Nepal army/police or other government work, health working, metal working, drumming, hotel or restaurant work, and disability/pension from the government.

Table 2. Total number of households per source of income

Income source	Number of households	Percent of households
Agriculture	179	78.17%
Animals	111	48.47%
Foreign	76	33.19%
Shop	37	16.16%
Oda Foundation	16	6.99%
Portering/Labor	36	15.72%
Other	49	21.40%

Birth age

Nepal has the third highest prevalence of child marriage in South Asia. Girls who are uneducated, poor, and living in rural areas—girls like those in Oda—are more likely to experience child marriage.[2] Participants were not asked their age at marriage, but rather the age of the youngest mother in the house when she had her first child. This is how the question was framed in the 2017 Odanaku Household Survey, so it was asked in the same way to measure change. The average age of a mother at the birth of her first child is 20. The youngest response was age 12 (an outlier) and the oldest was 36. In Nepal, students commonly leave school around the age of 16 when they earn their School Leaving Certificate (SLC) at the end of grade 10. For girls in Oda and surrounding villages, opportunities after grade 10 are limited unless they can afford additional schooling or vocational training. Thus, many girls marry after completing school and have children soon after. The average birth age of 20 indicates that many girls are married before then, even though the legal age of marriage in Nepal is 20. UNICEF classifies child marriage as a human rights violation that puts children at risk of abuse and violence. Investing in girls and women by creating opportunities for education, healthcare, and employment can contribute to decreasing the prevalence of child marriage in Nepal.

Household amenities

Electricity

There is no electrical grid infrastructure in Oda, although some neighboring villages have grid-based electricity which runs on hydropower. In Oda, people rely on solar panels for electricity. All survey respondents reported having some form of solar electricity, however three respondents indicated their solar panels were broken. The solar panels found in the village were installed as part of a government initiative, the Karnali *Ujjyalo* (Light) Programme. The solar panels provide electricity to power a few lightbulbs and a small radio. Before they had solar panels, people in the village relied on fire to keep their homes lit; solar electricity offers a safer and more convenient alternative.

Cooking

Most respondents use wood-burning ground or mud stoves. Only 37 households use gas for cooking, primarily shopkeepers or restaurant owners. 31 of those 37 also use a wood-burning stove some of the time. **While some houses have an enhanced mud stove which has a pipe leading outside, over 70% of households lack a vent or pipe for smoke to escape the cooking room.** Surveyors observed that even in homes with pipes or windows, smoke still filled the cooking room. Furthermore, respondents reported using their stoves to heat their homes in the cold months. Research has shown a direct link between smoke inhalation and development of diseases such as Chronic Obstructive Pulmonary Disorder (COPD), as well as increased

[2] United Nations Population Fund Nepal. 2022. "Child Marriage." https://nepal.unfpa.org/en/node/15217#:~:text=In%20Nepal%2C%2041%20percent%20of,and%20living%20in%20rural%20areas.

mortality rates and diminished quality of life similar to tobacco smokers. Women in low- and middle-income countries tend to be the most greatly affected as they spend the most time cooking over the stove and in the home. As a result, among the most common diagnoses at the Mahabai Community Hospital (located in Oda and run by OF) are Chronic Obstructive Pulmonary Disorder (COPD) and upper respiratory tract infections. The survey also inquired whether anyone sleeps in the room where the stove is located. In 143 households (62.45%), the cooking room and sleeping rooms are separate. In 86 households (37.55%), people sleep in the same room where cooking occurs, making them vulnerable to indoor pollution.

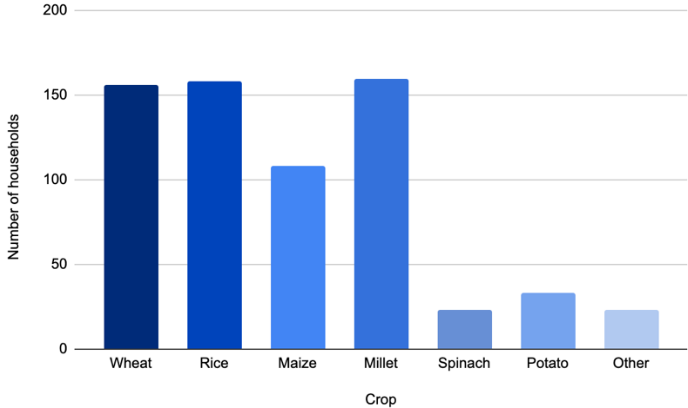
Agriculture and nutrition

Agriculture production

On average, households in the survey coverage area have enough food from their own fields to sustain themselves for less than 4 months. This varies slightly by caste, as Dalit caste households have enough food to last 2.39 months on average, while Thakuri grow 4.59 months of food on average and Brahmin have enough to last 3.92 months. The two Magar households do not farm land.

The most common crops grown in the area are millet, rice, wheat, and maize. Out of the 179 households that farm, 166 (92.74%) grow millet, 163 (91.06%) grow rice, 161 (89.94%) grow wheat, and 112 (62.57%) grow maize (Figure 3). Additionally, 33 (18.44%) grow potatoes, 24 (13.41%) grow leafy green vegetables, and 23 (12.85%) grow other crops. Other crops include those from trees, such as bananas and lemons, as well as crops grown on small patches of land near homes, such as garlic, onions, cabbages, green beans, gourds, and tomatoes.

Figure 3. Number of households per type of crop grown



Vegetable consumption

The staple diet in the region is *dal bhat* (rice with lentils) and *roti* (Nepali flatbread). People typically eat *dal bhat* or *roti* two times per day. Surveyors asked respondents to estimate how many times per week they consume vegetables. Table 3 shows that **nearly 75% of households**

consume vegetables fewer than 4 times per week. Analysis of this data by caste shows that 58.06% of Dalit families consume vegetables 0-1 times per week, less frequently than any other caste.

Table 3. Number of times per week vegetables are consumed

Times per week	Number of households	Percent of households
0-1	87	38.16%
2-3	83	36.40%
4-5	29	12.72%
6-7	29	12.72%
Total	**228**	**100%**

**One participant did not respond to this question*

Infant nutrition

To measure understanding of child nutrition, participants were asked how long they exclusively breastfeed infants (i.e., feed them only their mother's milk and no other food or drink). Only 194 participants out of 229 responded to this question. Others did not respond either because they did not know or because there were no children in their house. Per the American Academy of Pediatrics, infants should be exclusively breastfed for about six months before other foods and drinks are introduced to their diets. Most of those who responded to the question (77.31%) reported feeding their infants nothing but breastmilk for six months. 7.73% of those who answered the question said the children in their household were breastfed exclusively for between six months and one year. 5.67% said they do so for one year, and less than 5% gave their infant(s) breastmilk for either less than six months or more than one year, or had an issue breastfeeding.

Water, sanitation, and hygiene

Water access

In Oda, 75.45% of participants said they have difficulty accessing water. There are public water taps in the village where people go to collect water for cooking, bathing, washing, and drinking, but fewer than 10 households have water taps in their homes. Some households collect water in large drums or use hoses to lead water closer to their homes. Water at the public taps comes from a water source miles away in the hills above Oda. Although there is a river nearby, it is a 30-minute walk downhill from Oda, making it difficult to source water from.

> **Key WASH statistics**
>
> - 75% of respondents have difficulty accessing water
> - 46% never treat their drinking water
> - 29% do not have regular access to a

Water treatment

Water-borne illnesses are another common ailment in the community. Typhoid, diarrhea, and dysentery cases rise in the rainy season due to

contaminated water. Cohabitation with animals and inadequate sewage control leads to feces-contaminated water. 45.54% of respondents never treat their drinking water. 29.46% of participants said they boil their water in the winter only, generally for warmth instead of purification. 11.16% boil their water during all seasons and 13.84% use water filters regularly. Some participants noted they also boil water when they are sick.

Toilet access

70.98% of households have a toilet; 28.57% of households do not have a toilet. All toilets in the village are squat toilets. 89.38% of households have toilets with a plaster pan; 10.53% are simply holes in the ground. Of those with a toilet, 34.38% share with one or more other households. Most of those without a toilet (60.94%) reported going in the wooded area on the edge of the village, while others use a neighbor's toilet or that of a nearby building. Others reported openly defecating near their house.

Data on handwashing practices after going to the bathroom were collected. Only one participant said members of his household do not wash their hands after using the bathroom. 70% of participants reported using soap and water, while others use ash, soil, or just water. However, the survey did not specifically ask how often soap is available. Based on observation, it is likely that consistent use of soap is much lower than the data suggest. Participants may know they should be using soap and thus overreported how often they do so.

Teeth brushing

Tooth decay is a common issue; many older members of the population are missing teeth. There are no dental services in the area beyond pain management. To assess dental hygiene, participants were asked if people in their household brush their teeth. 96% of respondents said at least some of their household members brush their teeth. Data about frequency of brushing and use of toothpaste were not collected. Many respondents indicated the adults in their household brush their teeth, but not the children. People reported stopping brushing if they had dental pain.

Bathing

The majority of people living in Oda bathe at public water taps, at their homes using water collected from the taps, or in the nearby river. There are no public hot water taps, and only one private household and the OF campus have solar hot water heaters for bathing. Skin diseases like scabies are very common. In the winter, the average resident bathes once per week. At the least frequent, one respondent said they bathe once every six months. One reported bathing every day, even in the winter.

Respondents reported bathing more frequently in warmer months. During warm months, the average resident bathes four to five times per week. Many respondents said their children bathe daily in the river when it is hot out. They were not asked how often they use soap when bathing, so it may be the case that some of the reported bathing is just with water.

Lifestyle

Smoking

Respondents reported that 230 people from 147 different households smoke. There are different types of smoking substances in the village. Cigarettes can be purchased, but people also smoke tobacco and local plants through pipes. 147 males and 83 females smoke. About 50% of smokers smoke daily. Others reportedly smoke a few times per week or only sometimes. One respondent said that she and her husband used to smoke daily, but after getting COVID-19 they realized the damage it was doing to their lungs and stopped immediately.

Chewing tobacco

88 people (86 males and 2 females) from 80 different households reported chewing tobacco. Of those who chew tobacco, 65% reported doing so daily.

Drinking alcohol

157 people from 130 households reported drinking alcohol at least occasionally. Of the 157, 151 are males and 5 are females. It is less socially acceptable for women to drink in the community, so it is likely respondents under-reported the number of women who drink. Over 50% said they only drink occasionally, but 22.93% of those who drink do so daily. This indicates that 16.44% of the total adult population drink, and 3.14% of the adult population drink daily.

Health behaviors

Dhami visitation

Dhami, also called *jhakri*, are shamanic healers in Nepal. Participants were asked about the frequency at which they use *dhami* services and for what purposes. 134 respondents said they go to both the *dhami* and the hospital when they are ill. Of those, 11 said they go to a *dhami* first, while 83 said they go to the hospital first. The other 40 did not specify which they visit first. 90 respondents (40%) said they only go to the hospital when ill and do not call a *dhami* for medical issues. Zero respondents said they only go to a *dhami* for medical issues and never the hospital.

Of those who reported ever going to a *dhami* for any reason (151), 123 (81.46%) said someone in their household visits a *dhami* one to three times per month. 20 (13.25%) said they call a *dhami* less than five times per year. Some people see a *dhami* more frequently: seven households see a *dhami* four to six times per month and one participant said she calls a *dhami* two to three times per week.

Participants were then asked the reasons they go to a *dhami* versus the hospital. People commonly responded that they go to the hospital for medicines, chronic disease treatment, pre-natal and birthing care, and physical illnesses such as fever and diarrhea. People who see a

dhami before visiting the hospital said they go to the hospital if the *dhami* treatment does not work. Participants reported seeing a *dhami* for issues related to spirits, superstition, ancestors, gods, bad dreams, astrology, headaches, shaking, and mental illness. Many reported seeing a *dhami* if the medicine they receive from the hospital does not cure their illness. *Dhami* are traditionally male and receive a small fee for their help. They may suggest treatments ranging from practices to reduce tantrums in children to restrictions on menstruating women.

Routine vaccination

Nepal's National Immunization Program requires children to be vaccinated against certain diseases in the first two years of life, including measles-rubella, pneumonia, tuberculosis, diphtheria, pertussis, tetanus, hepatitis B, rotavirus, and Japanese encephalitis.[3] As part of the survey, participants were asked if the children in their household had received these routine vaccinations. **Of those who had knowledge of the vaccination status of the children in the household, 96.65% reported all children in the house having received routine vaccinations.** At 3.35% of households, zero or not all children were vaccinated. At one house, the respondent said their oldest child did not get vaccinations because she is a girl.

COVID-19 vaccination

COVID-19 vaccines became available in the Mahabai municipality in February 2021. By the time of the survey one year later, at 224 out of 229 households (97.82%), at least one member of the household had received the COVID-19 vaccine. **At 172 households (75.11%), all eligible adults had reportedly received the COVID-19 vaccine.** The Oda Foundation hospital (Mahabai Community Hospital) was the most common place at which people reported having been vaccinated—178 families had at least one member get vaccinated at OF. 62 families had at least one member vaccinated at a local school, 27 at the Padamghat government office, 13 in India, and 32 in other places. As children's ages were not collected, the percent of eligible children who received the COVID-19 vaccine is unknown. At only 2 households, no one had received the vaccine, reportedly because they did not have information about how to get it.

Other reasons people gave for not having received the vaccine included being absent from the area at the time of vaccination, lacking information on how to get it, being ineligible due to age, pregnancy, and being unable to transport a disabled relative to the vaccination location. Four families had members who were vaccine hesitant due to fear or not thinking they were at risk for COVID-19. Nine people said they missed the second dose of the vaccine, while one person reported that he had been vaccinated five times—twice in India and three times in Oda.

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[3] Unicef Nepal. 2021. "Path to full immunization." https://www.unicef.org/nepal/stories/path-full-immunization#:~:text=Under%20Nepal's%20National%20Immunization%20Programme,B%2C%20rotavirus%20and%20Japanese%20encephalitis.

Medicine use

Participants were asked if they understand how to take medicines (i.e., if they understand the provider's instructions about how often a medicine should be taken, with or without food, etc.). In this remote part of Nepal, medicines are only dispensed from health clinics. All but one person said they understand how to take medicine. Furthermore, 81.70% claimed they never forget to take medicine, while 17.86% said they sometimes forget, and 1 person said they always forget. Additionally, 84.23% of respondents said they take the full course of medicine and 15.77% said they stop taking medicine when they feel better.

Because patients at the Mahabai Community Hospital often request injections, participants were asked if they prefer tablets or injections and why. 21.17% of respondents said they prefer injections, typically because they are quick and easy, they do not have to remember to take medicines, and because they feel they work more effectively than tablets. 36.94% of respondents said they prefer tablets. 41.89% of respondents said they had no preference or thought whatever the doctor suggested was best.

Birthing care

In 2020-2021, the Oda Foundation constructed a birthing center with support from the local government, the American Nepal Medical Foundation, the Daya Foundation, and the Act of Kindness Collective. Availability of professional birthing services, especially those in a hospital or birthing center, contribute significantly to preventing maternal deaths. Participants were asked if they felt the new birthing center was needed, and whether they thought giving birth at home or at a birthing center is better. All but two participants felt that the birthing center was needed, and two were unsure. **97.32% of respondents felt that giving birth at a birthing center or professional medical center is better than giving birth at home.** Two respondents (less than 1%) felt that giving birth at home is better. Four people (1.79%) said either giving birth at home or at a birthing center is good. Women said they felt giving birth at a birthing center was cleaner and more comfortable, and it was preferable to home birth because the staff was well trained.

Family planning

Participants were asked about their perception of family planning (contraception). 78.95% of respondents felt positively toward family planning and 6.70% felt negatively. 14.35% were not familiar with the concept or did not have an opinion. 20 people did not respond to the question.

While the survey did not explicitly ask women if they were using birth control, many noted in their responses that they or their family members do use some form of birth control. Most commonly, women said they use Depo-Provera, which is a contraceptive injection that is meant to be given once every three months. Many others said they had tubal ligation surgery. One woman said she used Depo-Provera and had been experiencing heavy pelvic/vaginal bleeding nonstop.

Cost of care

At OF's Mahabai Community Hospital, new patients are charged Rs 50 (~$0.40) for a registration card and Rs 20 (~$0.15) for any further visits if they bring the same registration card back. Exceptions to this are patients who have a follow-up visit less than seven days after their first visit—in this case there is no charge for the follow-up visit. Certain groups receive free care, including those who are disabled, over 60 years old, or very poor. There are additional costs for lab tests. For the first two years of clinic operations, the OF clinic was fully free. However, surveys indicated that the community felt a small fee would ensure clinic services were taken seriously and that medicines were not wasted; a fee has been maintained since then.

Participants were asked if the cost ever prevents them from seeking care at Mahabai Community Hospital. 87.73% said it does not ever prevent them from seeking care, while 12.27% said it has ever prevented them from seeking care. The survey did not initially ask if people had to borrow money to afford a visit, but when one participant mentioned they needed to do so, all participants thereafter were asked. Of those asked (160 people), 60% (96) said they never borrow and 40% (64) said they have had to borrow money to be able to pay the visitation fee.

The government of Nepal is working to implement a Social Health Insurance Scheme, and the Karnali government is aiming to expand health insurance registration in 2022. Under the scheme, families pay Rs 3,500 (just under 30 USD) per year for medical treatment and medicines worth up to Rs 100,000 (~820 USD). Up to five family members are covered; each member after that is Rs 700 (~6 USD). At the time of surveying, 73.06% of participants said they were not aware of government health insurance. 26.94% (60 people) were aware, of which 55% (33 people) were registered. Those who are aware but not registered said they did not know where or how to register, were not sure how to use it, or could not afford the registration fee.

Perception of Mahabai Community Hospital and Oda Foundation

100% of participants said the Oda Foundation/Mahabai Community Hospital is the first health post they visit when sick. When participants visit the hospital, 97.31% understand what the doctor is saying about their illness, while 2.69% do not understand. All but 2 people said the doctors at OF treat them with respect.

Respondents generally felt positively toward Mahabai Community Hospital. When asked to rank it on a scale of 1 to 10, the average participant gave an answer of 8.46. A few people told of bad experiences involving being unable to access services because they could not pay or not receiving the medicine they wanted. When asked what they would like to improve about the hospital, many participants (128, or 55.90%) said they want an x-ray machine. 31

participants (13.54%) said they want more facilities like those found at the hospitals in Manma, Jumla, and Surkhet. 20 participants (8.73%) said they want operations available at the Mahabai Community Hospital.

Top suggestions for improving Mahabai Community Hospital services:

- X-ray machine
- More/bigger facilities
- Operation
- Ambulance
- Specialists such as a dentist, eye doctor, or OB/GYN
- Inpatient services
- CT Scan
- Ultrasound (USG)
- Filtered drinking water for patients

Community improvement

Lastly, participants were asked what improvements they would like to see in their community. The most popular answers by far were water (access and cleanliness), development of a road, and grid electricity. Other popular answers are listed below:

- Cleaner village
- Better paths
- More toilets
- Wi-Fi/network
- Farming machines
- Water irrigation
- More job opportunities
- Vocational education/training
- More fruits and vegetables

- End of caste discrimination
- End of child marriage
- Better education
- Unity among women
- Better personal hygiene
- Alleviation of poverty
- Less alcohol use
- Less gambling
- End of *chhaupadi*

Measuring development

The results of the 2022 Mahabai Community Survey were largely similar to those from the 2017 Odanaku Household Survey. However, there were some significant changes in the community between 2016 and 2022.

Population

The total population and its breakdown by sex and caste are about the same in 2022 as they were in 2016 (5% or less change). The average household size is smaller than in previous years—in 2016 it was 8.35, but in 2022 it is 6.99. In the time between the two surveys, the

government built 18 new houses in Oda. People moved from cohabitating in larger homes to these smaller homes, which they pay the government for via mortgage.

Agriculture and income

People reported getting about the same amount of food from their fields—between 3 and 4 months—in both surveys. However, in the 2016 survey, 89% of families reported being employed in the agriculture sector, while 2022 survey results indicated only 78% remain in the agriculture sector.

79% of families reported sending a family member out of the country for work in 2016. In 2022, 79.8% of families have a member absent for work, but only 33.19% of families have a member working in a foreign country.

Water shortage

A significant issue faced by the community at the time of the 2016 survey was a water shortage. In 2022, there is no longer a water shortage. More public water taps have been built and water is widely available. However, 75% of participants still find it difficult to access water, and many said they want to see water access improved. Although water is available, it must be carried back from taps over difficult, hilly terrain.

One change that may be attributed to more consistent availability of water is an increase in the average frequency of bathing. In 2016, people reported bathing one time per week in the warm months and three times per month in the cold months, while in 2022 they reported bathing four to five times per week in the warm months and one time per week in the cold months.

Household amenities

In 2016, 32% of respondents did not have a toilet. Despite new construction and progress, this percent has declined only slightly since then to 29%. Proper disposal of human waste is essential to prevent contamination of land and water from harmful disease-causing agents.

At the time of the 2016 survey, solar panels installed by a missionary group were powering lightbulbs in the village, but 13% of households lacked solar panels. Due to the Karnali *Ujjyalo* (Light) Programme, the government has installed more lightbulb-powering solar panels. All households were equipped with these solar panels, although three were reportedly broken.

There has been a change in how many people sleep in the same room where cooking occurs. In 2016, 64% of households had people sleeping in the cooking room, whereas now this occurs at only 38% of households. This is likely attributable to the government's housing project, which saw 18 new homes built with separate kitchens and fewer occupants, rather than to behavior change.

COVID-19

The COVID-19 pandemic hit Nepal in multiple waves from 2020-2022. Participants of the 2022 survey were not asked how they were affected by COVID-19, but many people became ill with the disease and work opportunities were significantly lessened. The Nepal-India border was closed from March 2020 to September 2021, preventing migrant laborers from seeking employment abroad. People are rebounding in 2022 as rates of external employment are back up to 2016 levels.

Future opportunities

The results of the 2022 Mahabai Community Survey show concrete areas for improvement in the village of Oda. In particular, there are opportunities for further education, advocacy, and data collection.

Education through trainings and existing interactions can be a simple and effective way to create behavior change and improve health outcomes. Survey results indicated a mixed understanding of when children should start brushing their teeth. **One opportunity for intervention is for health workers to inform or remind children and their caregivers about good teeth brushing habits when they visit the Mahabai Community Hospital**.

Another area for education is family planning. Many women reported using contraceptive injections, but health staff at the Mahabai Community Hospital report that women do not come at regular intervals for their shots, making the birth control less effective. **Health workers should host women's health workshops to ensure women are better informed about their options for family planning.**

Given that 73% of participants said they were not aware of government health insurance and 12% of patients said they had difficulty affording medical care, **government officials and health workers should prioritize informing people about health insurance and getting them registered.**

Nearly 30% of households do not have a toilet, including all houses that were recently built by the government. **Funds need to be put toward building toilets in the village.** Advocates should encourage the government to build toilets wherever they are building houses.

Data collection is another tool that can make a significant impact in the community. Further data collection is essential for tracking progress over time and targeting interventions to what is needed most. Firstly, the Mahabai Community Survey should be expanded to all wards of the Mahabai municipality. This will allow for comparison between wards and create understanding of the reach of the Mahabai Community Hospital and OF. The prevalence of water-borne diseases and lack of toilets suggests that a more comprehensive WASH survey

could be beneficial for advocacy and improving health outcomes. Lastly, education and literacy levels are important development indicators that should be tracked.