

Empowering Nepali Women in the Digital Economy

*Increasing women's employment in the digital economy in Dharche
Gaunpalika, Gorkha District*



Executive Summary

PROBLEM

Access to Education

By the time girls reach higher secondary school, more than **80%** have dropped out of school due to sociocultural and economic factors, widening the school-to-work transition gap. There are a number of barriers to education for women in rural Nepal, not to mention entering the digital economy. Below are the main factors contributing to the general lack of education and digital literacy:

1. High Secondary Dropout Rates
2. Lack of Access to Digital Education

SOLUTION

E-Learning + Tourism

Our solution consists of 3 major aspects in addressing the lack of access to education.

1. Enhancing infrastructure in all Dharce communities
2. Developing a homogenous platform for digital learning for women and girls
3. Empowering women to find and create their own employment opportunities in e-commerce and tourism

OUTCOMES

Skills + Employment

Our solution will increase digital literacy and skills for women and girls, and pave the way for effective career opportunities in the digital economy within the next 5 years.

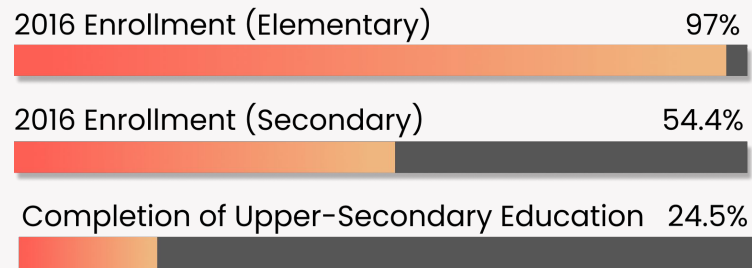
This will be evaluated through a(n):

1. **8% increase** in the female employment rate
2. **52% decrease** in the female secondary drop-out rate
3. **31% increase** in the female digital literacy rate
4. **\$203,000 increase** in income obtained through tourism

The Problem: Overview

01

The Discontinuation of Education



Although the general Nepalese school system remains plagued by high dropout rates, girls are more likely to leave school earlier or miss school days than boys for a wide spectrum of reasons. When situations affect them both and resources are limited, boys will be prioritized.

1. Travel Distance
2. Chhaupadi Huts (menstrual seclusion ritual)
3. Grade 8 District-Wide Final Examination
4. Household Duties
5. Lack of Infrastructure (due to earthquake)
6. COVID-19

02

Lack of Access to Digital Education

This is due to the following reasons...

1

Access to Internet

Although some places have access to the internet, it tends to be slow and unreliable, especially in rural communities. The internet bandwidth costs are also high due to the low volume of users.

2

Electricity Shortage

Some places in Nepal, particularly rural places, are off the electricity grid. They use renewable energy, which is unreliable. This affects the residents ability to connect to the internet and use devices.

3

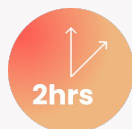
Scarcity of Educational Devices

There are a limited amount of computers in schools in rural areas. Students don't get enough opportunities to use the computers, and are given a limited amount of time when they do.



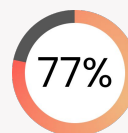
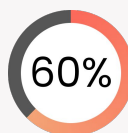
Travel Distance

Due to the mountainous terrain of Dharche, travel distances and times are long and arduous. Travel between villages may take one to several days on foot, and cover dangerous routes. In Keraujabesi for instance, it takes 2 hours for students to travel to school every day.



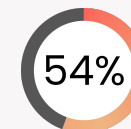
Chhaupadi Huts

Women in Nepal are secluded in a hut for the duration of their periods due to the belief that women are impure during menstruation. Laws were passed to make these huts illegal in 2017, but are slow to be enforced. Although 60% of the girls knew, 77% continued practicing it, leading to multiple deaths.



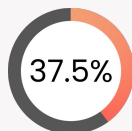
Grade 8 District-Wide Final Exam

Grade 8 concludes with an examination that determines admission into secondary education. As girls start to menstruate and take on more duties in Grades 6-8, less time is spent on studying and many fail this exam. Only 54% of students enroll in secondary school.



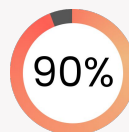
Household Duties

In many households, a girl's education is not prioritized compared to a boy's education. On average women in rural areas work over **4 hours a day**, and at least three hours in urban areas. A study shows that girls work on average **37.5%** more on household chores compared to men.



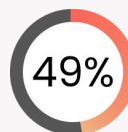
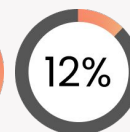
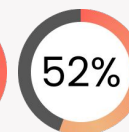
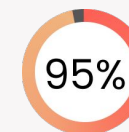
Lack of Infrastructure

The lack of infrastructure is mainly due to the 7.9 earthquake in 2015 destroying many buildings and taking many lives. This also exacerbated the difficulty in traveling to school. **90%** of schools were destroyed in the Gorkha, Sindhupalchok, and Nuwakot districts.



COVID-19

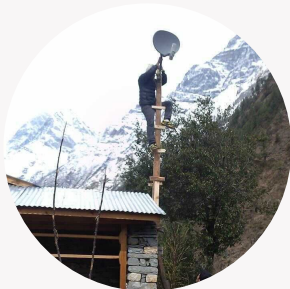
According to a UNICEF survey, **95%** of children had stopped attending school, and **52%** were not even studying at home, with only **12%** attending classes online or via radio/television. During pandemic lockdowns in Nepal, **49%** of the girls were at risk of not returning to school.





Access to Internet

1. Due to electricity outages in Dharche, the internet can be subject to go out at any time..
2. WIFI signals are weak and is only around 20 mbps once it reaches Dharche, which must be shared amongst all users.
3. The WIFI there is mainly used for email and browsing. Currently, only 4 villages are connected to the internet.



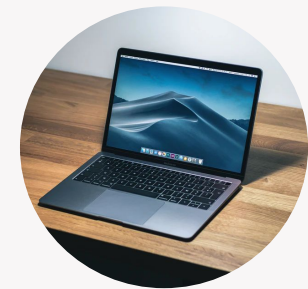
Electricity Shortage

1. Dharche does not get its electricity from the main grid line of Nepal. The communities are off-grid.
2. Dharche's electricity comes from small renewable energy system from local areas which can be unreliable.
3. The equipment used to generate electricity is highly dependent on the weather, causing power outages.



Scarcity of Educational Devices

1. There are a limited amount of computers in school. Students do not get enough opportunities to use the computers.
2. Each student gets only 15- 30 mins of time on a computer, which is not enough to learn and develop digital skills.
3. Most people don't have the money to purchase devices like laptops.





Meet **Bhagirathi Bajagain**

Bhagirathi Bajagain is a 20 year old who grew up in Nepal, specifically in a district called Tikapur. She has dreams of attending college to study accounting, getting her master's degree and then become a banker. However, Bhagirathi like the majority of girls, started her period at the age of 14. Her parents forced her to sleep in the “**Chhaupadi**” hut. She also was not allowed to touch anything, eat dairy products, or even do homework as she would have to spend her days in the dark, windowless hut.

In our own makeshift shelters.

The exchange of information between the children from two sides, included the aftermath of the earthquake especially regarding safety of schools and the situation of health care; about issues regarding child labour; child marriage; about their villages; about festivals, and how they brought together diverse people.

Responding to the question on *chhaupadi* by children in Barpak, Priyanka Timilsena in Bajura said that **because of education, social taboo of *chhaupadi* is being gradually reduced.** "Previously, we even couldn't go to school during menstruation for five days since schools have shrines for goddess of learning. But now the situation has been changed. We don't miss out on school."

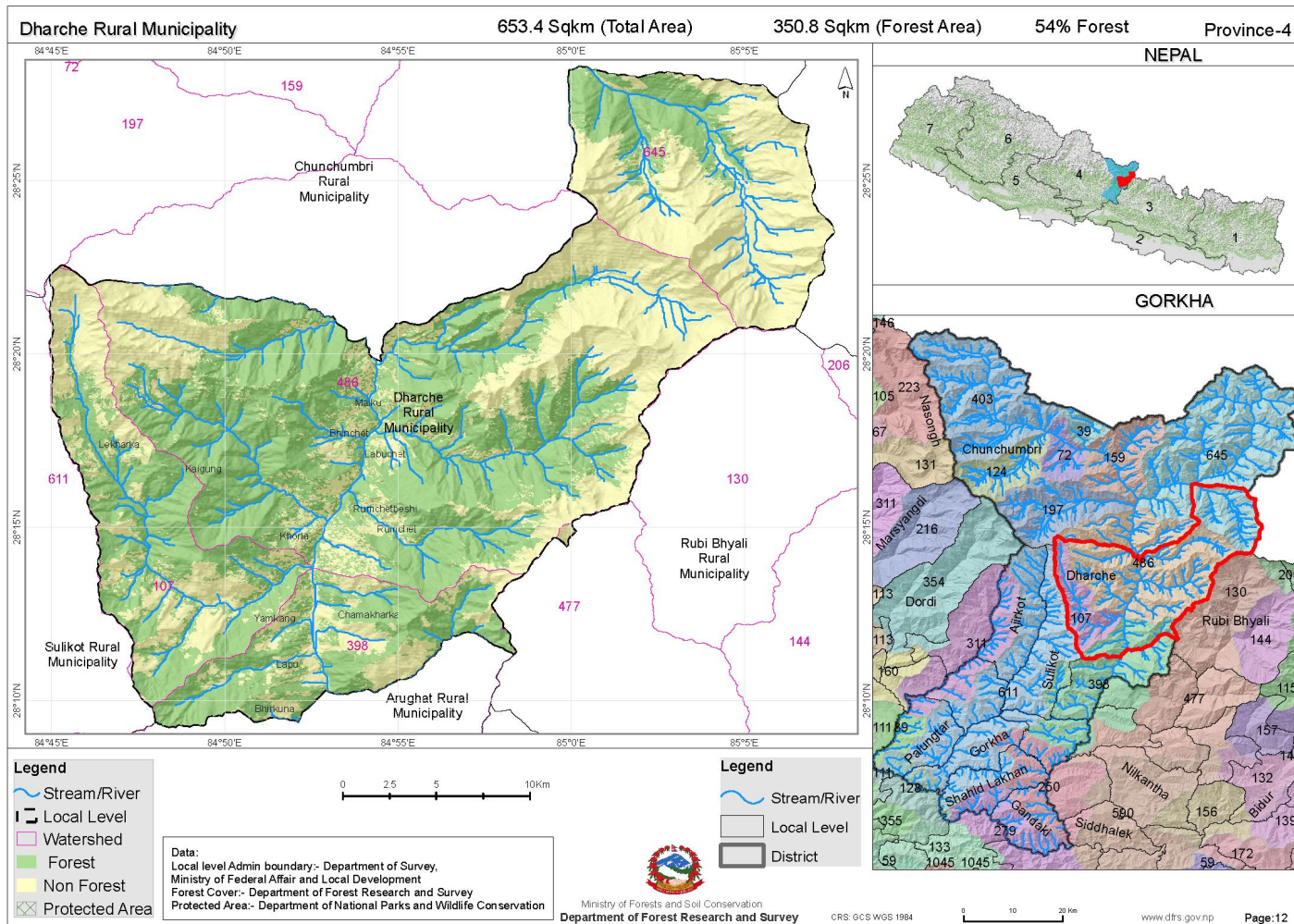
10 months x 5 days (average period length) = 50 days of school missed due to the practice of *chhaupadi*

50 ÷ 180 compulsory school days

= **28% of school days missed** 🚫

Although **education has been decreasing the continuation of Chhaupadi**, it still is an issue in rural areas where people aren't as educated, as they are not informed about the dangers of this tradition. This is evident even in Gorkha district, especially in the rural communities that live by the mountains.

Location of Interest: Dharche Rural Municipality



Dharche Rural Municipality (called a Gaunpalika), is located in the Gorkha District in Gandaki province.

It was formed in 2017 by the dissolving of 6 Village Development Committees (VDCs): Kerauja, Uiya, Lapu Kashigaun, Gumda, and Laprak, with the municipal headquarters located in Machhakhola.

Population: 13,229
Households: 3,128
Schools: 29

The communities here are among the most remote villages of Nepal, with a lack of infrastructure due to the **difficult terrain and high altitudes** (630 to 7309 m). The region was also in the epicentre of the 2015 Gorkha Earthquake (7.9 magnitude).

Despite this, Dharche is gifted with the natural beauty of the Himalayan mountains, and is the gateway to the famous Manaslu circuit trek.



The Opportunity



Internet

Internet has already been extended into Dharche. However, it is slow and often unreliable, and does not reach all villages.



Support of Girls' Education

Families are not against higher education for a girl, and would fully support them if it weren't for their other duties.



Electricity

As Dharche is off-grid, communities use alternative sources of electricity that are not as powerful or reliable. Different geographic locations favour different sources of energy.



Tourism

Dharche has a large potential in the tourism industry, being the gateway to the Manaslu Circuit Trek and Rubina-La Glacial Lake in the Himalayan mountains.



Digital Literacy

Most residents of Dharche have a basic understanding of technology and own mobile phones. However, digital skills are still underdeveloped, due to a lack of qualified teachers and devices.



Agriculture

While much of Dharche is based off of agriculture, it is largely for subsistence farming rather than generating an income.

The Solution: Overview

INFRASTRUCTURE

1. Internet Access

Internet connection will be improved and extended to all communities in Dharche that have not yet been connected.

2. Alternative Energy

A hybrid model for electricity generation will be introduced, combining wind, hydro, and solar, to improve upon the current electricity infrastructure.

3. Laptop Distribution

Females ages 11 to 49 will be eligible to sign up for a laptop, free of charge, every February before the start of the school year in April.

PLATFORM

4. Education

Following Nepal's national school curriculum, course content created by certified Nepali teachers will be added and organized on the platform by grade, in addition to a short course on the potential harms of Chhaupadi huts.

5. Employment

Courses will be provided for women to hone and refine their skills, earn certificates of completion, and connect directly to employers. Special courses will also be implemented to empower them to create their own job opportunities with skills and resources they already have.

Internet Status Quo

In recent years, Nepal has been making rapid advancements in internet penetration. At just 9% in 2011, it increased to 35% January 2020, and was extended to remote areas in 41 districts by July 2020. Much of this success can be attributed to the **Nepal Wireless Networking Project (NWNP)**

NWNP: A social enterprise that provides Internet access to remote villages in Nepal using wireless technologies. The project is led by **Mahabir Pun**, a widely known figure in Nepal who has received international recognition for his work in this field and been inducted into the Internet Hall of Fame. Since 2002, he has expanded the network and services to over 175 remote villages in 15 districts of Nepal.

While most homes in the city are usually connected to the internet through *fibre optic cables* to each home, that isn't typically the case for rural areas. **Laying fibre optic cables is expensive**, not to mention far more difficult with hilly terrain. Given the small population of rural areas, it isn't profitable for Internet Service Providers to connect them by fibre optics. As a result, internet is transmitted **wirelessly**, as done so by the NWNP.



Members on the team were able to get in contact with Mahabir Pun, and have many questions and facts regarding the technology and area answered and verified.

Dharche Wireless Network

Write a description for your map.



The **base station** is located in the **Gorkha Bazaar**, where it is connected by fibre optic cables to [India](#): Nepal's source of internet.



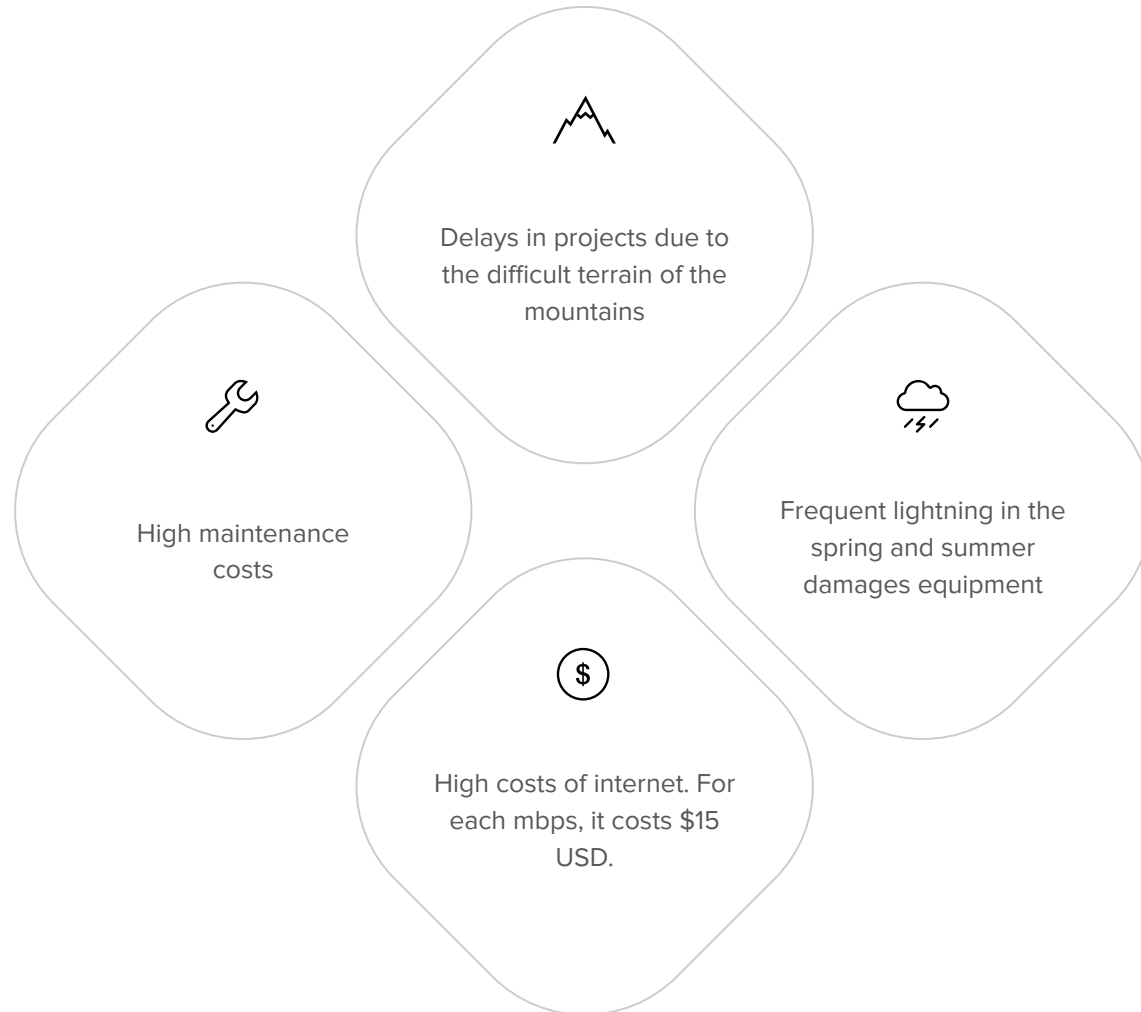
The map shows where the **relay stations** are in the **yellow**. They receive and transmit the signal from the transmitter at the base station, in order to bring internet to Dharche.



Mahabir Pun connected 4 locations in Dharche through the relay stations: **Laparak, Gumda, Khorla, and Machakhola**

- Although some villages in Dharche have WIFI, others were not reached by the NWNP. These people must travel to the municipal headquarters (Machakhola) for something as simple as sending an email.
- To transmit these signals, two main relay stations were set up, with minor ones also in place to ensure the point-to-point connection is in a line of sight.
- To connect another village, a new relay station simply has to branch off from ones already built.

Current Issues and Infeasible Solutions:



Increasing Number of relay stations to *improve* WIFI

This only extends the range, but does not improve connectivity.



Using Mobile Data instead of WIFI

Requires a licensed spectrum band, whereas WiFi is unlicensed and cheaper.



Using Wimax

Although WiMax has a longer range, it is more expensive.



Using Fibre Optic Cables

Very expensive to establish fibre optic lines with mountainous terrain.

Part I: Internet Access

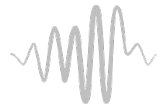
How Mahabir's **current** WIFI system works *and how it will be improved* ...

Click here to see the [financial aspects](#)



Transmitter in Gorkha Bazaar

2.4 GHz unlicensed spectrum band
Transmitter: Cambium - 80 mbps



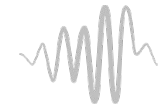
Main Relay Stations

Relay stations that bounce the signals to Dharche



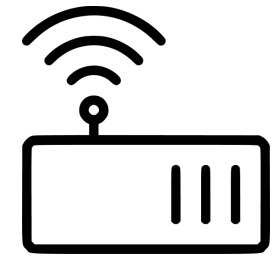
Sub Relay Stations

Bounces the signals to 3 villages within Dharche



Receiver in Dharche

2.4 GHz unlicensed spectrum band
Receiver: Cambium - 80 mbps



Router at WIFI hubs

Routers are placed at WIFI hubs (schools, hospitals, etc.)

01

Upgrade the Transmitter and Receiver

Replace the 80 mbps transmitter and receiver to a [300 mbps](#) transmitter and receiver in Gorkha Bazaar and in Dharche.

02

Construct More Relay Stations

Extending WIFI services to villages without WIFI. Materials needed: [Pole](#), [Solar Panels](#), [Lightning Arresters](#), [Antenna](#), grounding system

03

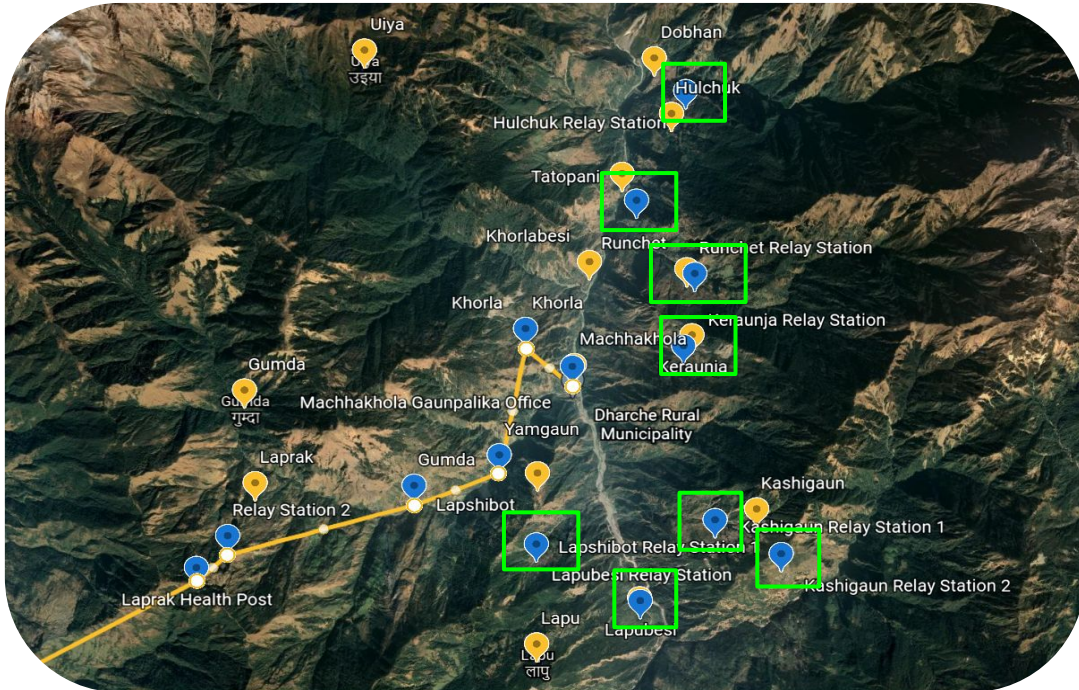
Provide Routers for Every Household

Allows for easy access to WIFI by providing [routers](#). Households are already connected to a local electricity distribution network.

underlined texts are links

Part I: Internet Access

Where the new relay stations are going to be placed ...



Install 8 new **relay stations** with **lightning arresters** and **solar panels** in:

- Uiya (Khorlabesi)
- Kerauja (Hulchuk, Runchet, Keraunja)
- Kashigaun (2x)
- Lapu (Lapshibot, Lapubesi)

Click [here](#) to explore our mapped out area on Google Earth



Why hasn't reliable internet been provided to all communities in Dharche? A lack of funding. However, with the UN's funding, we can **extend and improve** the current system.

Using the same methods of installation, Mahabir Pun and the NWNP have already successfully brought internet to over 175 remote villages in 15 districts in Nepal. With our plan, we will simply be **building upon what has already been replicated** and **proven to work** in hundreds of villages in Nepal.

What the upgraded system will result in:

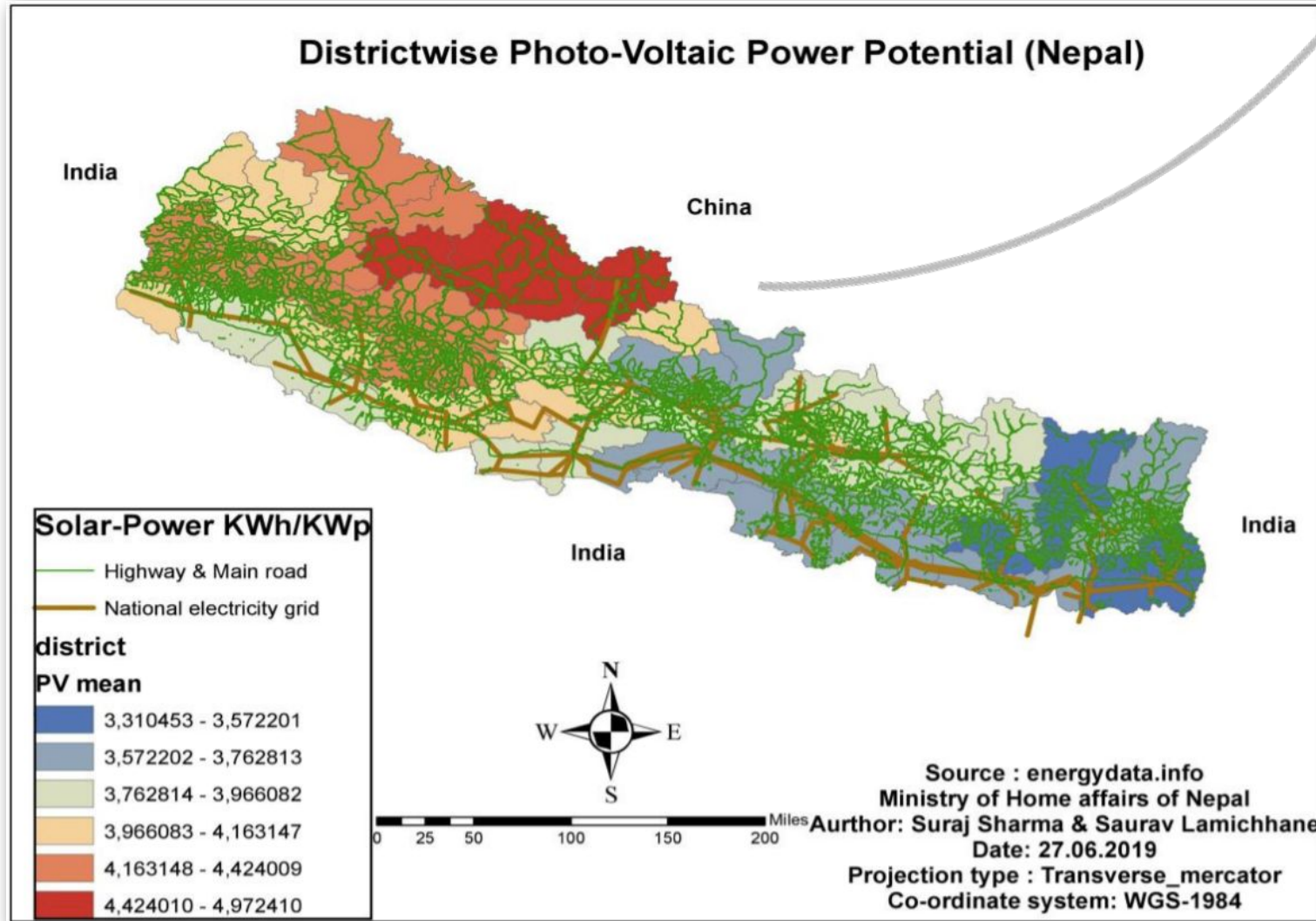
- 1 **Better Connectivity** - By upgrading the transmitter and receiver
- 2 **Extending WIFI to the rest of Dhache** - By constructing relay stations
- 3 **Decrease in lightning damaging equipment** - By placing lightning arresters
- 4 **Lowering the Cost of Internet** - By increasing the volume of users of internet (the more users, the cheaper the price for each person)

Total Cost for WIFI Implementation + equipment needed

\$58,631.60

All in USD

Alternative Energy : Status Quo



While solar power is still a popular option in remote areas like Dharche and can still generate ample amounts of electricity, it may not be the most fruitful option for the area, when compared with the potential in other locations in Nepal.

- 1 The electricity in Dharche comes from a small hydroelectric power plant in Runchet or solar panels.
- 2 Dharche does not get its electricity from the main energy grid of Nepal, as it is an off-grid community.
- 3 The shortage is mainly due to the 2015 earthquake that damaged most of the infrastructure, one of which being the 45 kW hydroelectric system.





In order to improve electricity, Kerauja in Dharche is a place of interest. The major communities are: Runchet, Keraunja, and Hulchuk.

Total Cost for Wind Power Implementation + equipment needed

\$312,000



There is currently no plan for electrification in Kerauja.



Since it is a North facing village blocked by mountains, solar power is not as effective.



A small-case study on wind power potential was done in Kerauja. The study suggested that, at height 50m, with an average wind speed of 8.94 m/s, would be a great choice for wind power.



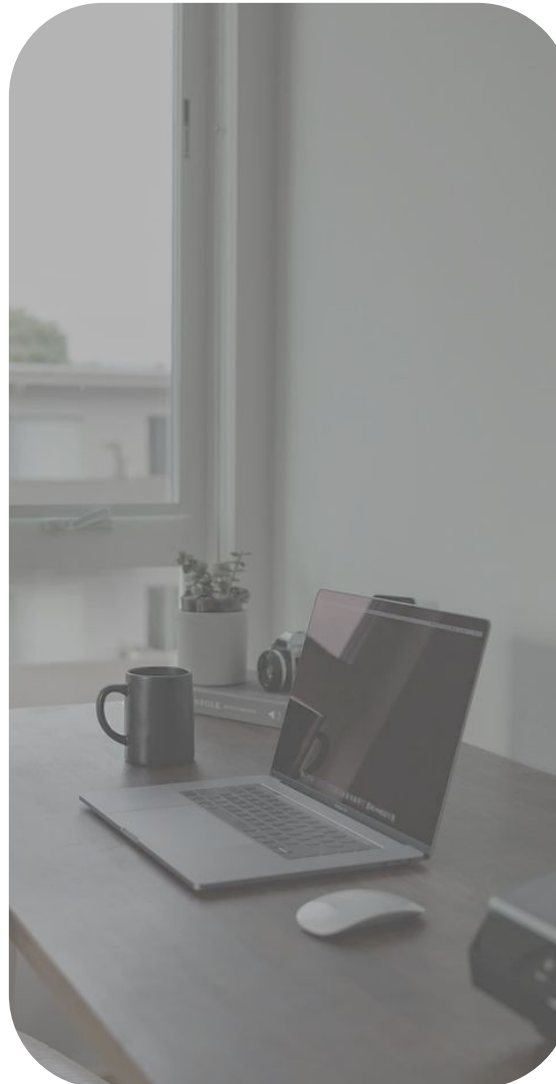
Six 10kW wind turbines will be placed in Kerauja (2 per community) and distributed to the rest of Dharche through their electricity network distribution. (Financial sheet breakdown)

Access to Computers: Status Quo

Access to Computers in School

Currently in Dharche schools, there is a lack of access to computers, **hindering digital literacy** and education.

- 01 In the most privileged schools, students learn basic skills such as typing and word processing software.
- 02 There is a lack of certified computer teachers in Dharche.
- 03 Only **3 schools** in Dharche provide access to computers.
- 04 Even with access to computers at school, students do not get enough chances or adequate time to use them, with only 15-30 mins a time.



Access to Computers at Home

Although people have phones, very few households in Dharche have computers.

- 01 Most of the Gaunpalika runs on solar power, but the energy generated from solar power is not enough to power a desktop computer.
- 02 Most people do not have the money to purchase a laptop or PC.

However, solar power can generate enough electricity to charge a laptop, as they use **4x less** power than a desktop.

Part III: Laptop Distribution



Total Cost for 4620 Laptops (Cost Breakdown):

\$900,900.00

01

Battery Life

- Long battery life in case of electrical outage

02

Biometrics

- The laptop is unlocked with **fingerprint** recognition to ensure it is only accessible by the female owner
- Without this, it could easily become a shared family laptop, taking away from the girls' education

03

Anti-Theft System

- Requires each laptop to periodically make contact with a school-level server to renew its cryptographic lease token
- If the token expires before the server is contacted, the laptop will be locked until a new one is provided

Distribution Strategy:

1

Sign-Up

- Each household will be **mailed** a laptop request form in February, 2 months before the start of the school year in April

2

Distribution

- The laptops will be **distributed at the nearest schools (table in appendix)** to them based on the neighbourhood they live in at the end of March **by our volunteer team in Nepal**
- There will be a UN representative at the school to:
 - Verify the identities of the females
 - Help with the setup of the laptop (biometrics setup)

3

Protection of Property

- **\$30 deposit** for each laptop
- **\$200 fine** if the laptop is not returned, is missing, or has been sold by the end of the year

Part IV: Education

Features of Siknuhōs Nepal:

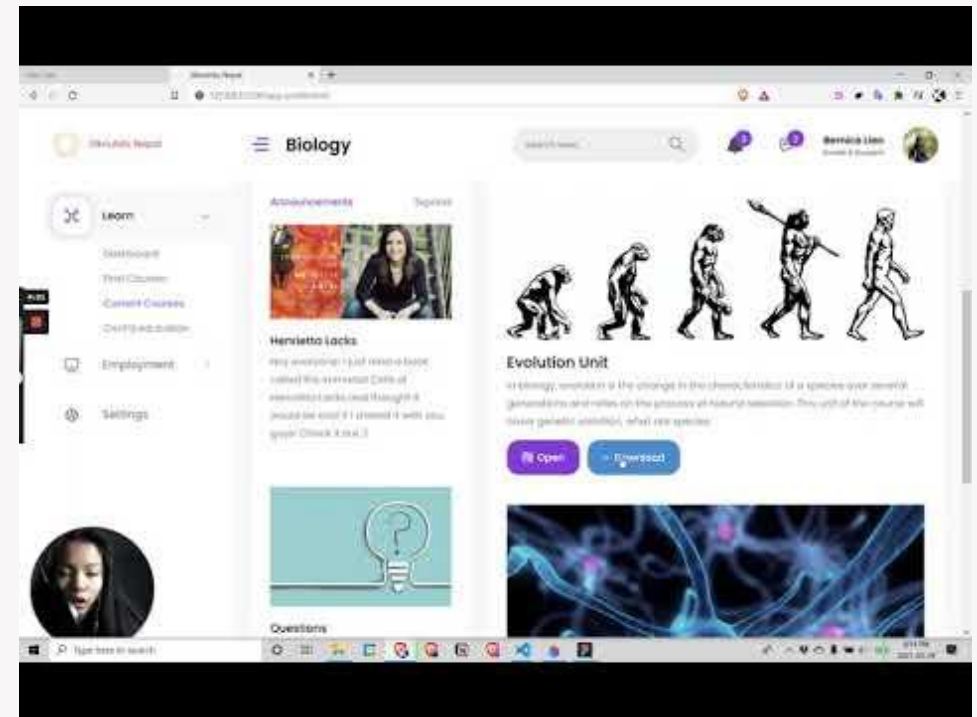
- 01 Course material created by certified Nepali teachers, following Nepal's national school curriculum will be implemented on the platform for **Grades 6 and up**.
- 02 Course content is organized by grade, subject, unit, and lesson, and can be easily filtered.
- 03 An additional mini-course for education on **Chhaupadi huts**, created in partnership with the [Be Artsy NGO](#), will be added.
- 04 Individual lessons can be downloaded in a zip file format, with .mp4 video lessons and .pdf lesson notes and quizzes, as a backup in case of internet outages.

Total Cost for Web Developer for First Year: [\(financial breakdown\)](#)

\$61,200.00

This is when girls tend to dropout as they get their periods and have more chores to do.

Click below to watch a walkthrough of the platform.



Or, explore the platform yourself [here](#).



Learn

Dashboard

Find Courses

Current Courses

Cont'd education



Employment



Settings

Departments



FILTER



Filter for specific courses by grade, subject, etc.



In partnership with [Be Artsy](#), an NGO helping to end Chhaupadi in Nepal, we offer a mini-course on the potential harms of Chhaupadi huts.

Quick Filter

Grade 8

Math

Chhaupadi Huts

Based your your recent searches

Salary

Newest

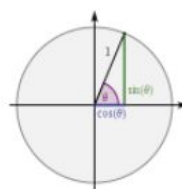
Geometry

This course is always *featured* on their Dashboard and Find Courses tab if they have not looked at the course. This course brings awareness **not just about the legality** of Chhaupadi huts, but why they are **dehumanizing and immoral**.



Algebra

Mr. Lama



Trigonometry

Mr. Pariyar

Calculus

Mrs. Joshi

This course introduces the student to the deductive method of proof with the use of points, lines, and planes. Solid geometry is integrated with plane geometry to lead the student to consideration of two- and three-dimensional figures and to develop the

Part V: Employment → Tourism

Opportunity

1. Tourism is the largest industry in Nepal, and provides **56%** of the country's income
2. Santosh Gurung, the chairman of Dharche, is already set on turning Dharche into a prosperous tourist hub
 - He has built the infrastructure for all types of activities (adventure sports, community, agrotourism)
 - He even created the slogan: “mera lagi paryatan, paryatan ka lagi ma (Tourism for Me, I for Tourism)”
3. Dharche has become a tourist hotspot after the *2015 Gorkha earthquake*
4. Remote Dharche is the gateway to two popular mountaineering destinations
 - **Manaslu** and Ganesh Himal (8th tallest mountain in the world)
 - Rubina-La Glacial Lake



Partnering with TripAdvisor

- Through the special course on the platform on TripAdvisor, women will learn how to market their own businesses & services and use the platform to their advantage.
- Potential job opportunities:
 - Tea shops
 - Homestays
 - Local guides



Community Homestay Case Study

- Royal Mountain Travel, a locally-run tourism company, has a program called **Community Homestay**
 - a network of family-run homestays throughout Nepal
 - allows travelers to get the “authentic experience” for a greater understanding of life in Nepal, rather than a hotel-centric one
- Women do not have to leave their homes or neglect their household duties in order to generate an income.
- The collaboration with TripAdvisor will provide women with the platform and resources to launch and manage homestay programs within Dharche
 - Arms them with the ability to financially support themselves

Part V: Employment → E-Commerce

Opportunity

1. Nepal remains a highly rural economy where **subsistence farming** is the main economic activity for women.
 - Communities in Dharce at an altitude of 1500 m and below rely heavily on agriculture
 - Subsistence farming generates no income for them. Thus, Nepal's economy is losing out on much of the production potential of women.
2. Nepali women are skilled in pottery, jewelry-making, and weaving, and can produce beautiful products.
3. Although the terrain makes it difficult to place items for sale in product markets, e-commerce and online advertising offers a way to increase efficiency around that.
 - Products can be discovered before they are brought all the way to market
 - Villagers can find what they want much more easily



Partnering with Haat Bazar

- One of the other projects of the NWNP is the Haat Bazar, an e-commerce platform that allows villagers to advertise local products for sale
- To help generate income, our platform will educate villagers & farmers about e-commerce and how to effectively advertise products on the site
- This gives women the opportunity to put skills they already have to use in generating income for themselves



Cont'd education allows for girls and women to gain **basic and advanced digital skills** to prepare them for the digital economy.

- Learn
 - Dashboard
 - Find Courses
 - Current Courses
 - Cont'd education
- Employment >
- Settings

Departments

Quick Filter: UI design, **Web Development**, TRIPADVISOR

Based your your recent searches

Salary

Newest



HTML

In partnership with **TripAdvisor**, we will teach girls and women to market their own businesses & services and attract tourists to Dharce.

After completing a course, a **certificate** will be given, which can be seen by employers.

Mr. Pariyar

HTML

Mrs. Joshi

CSS

Why Learn HTML?

HTML is the foundation of all web pages. Without HTML, you wouldn't be able to organize text or add images or videos to your web pages. HTML is the beginning of everything you need to know to create engaging web pages!

Take Away

- Learn
- Employment**
- Search Job
- Applications
- Companies
- Settings

Around You

Search by Title

Suggestions: Your Skill, Software Engineer

Showing 246 Jobs Results

Based your preferences

	Senior UX Designer	\$14,000 - \$25,000 Monthly Salary		London, Canada Location	Apply Now
	Maximoz Team	\$500 - \$1,000 Monthly Salary		Kathmandu, Nepal Location	Apply Now
	Junior UX Designer	\$8,000 - \$12,000 Monthly Salary		Mumbai, India Location	Apply Now

Allows these women to find jobs after completing courses on the continuing education tab of the platform.

- Learn
- Employment**
- Search Job
- Applications
- Companies
- Settings

Showing 246 Jobs Results

Based your preferences

Fulltime Freelance Details Salary

Newest

ID	Date Applied	Company	Type	Position	Contact	Status
#APL-0001	June 1, 2020, 08:22 AM	Highspeed Studios Creative Design Agency	FULLTIME	Senior UX Designer		Candidate
#APL-0002	June 1, 2020, 08:22 AM	Funk Inc. IT Department	PART TIME	Junior UI Designer		On-Hold
#APL-0003	June 1, 2020, 08:22 AM	Mosciski Inc. Creative Design Agency	FREELANCE	Intern UI Designer		Pending
#APL-0004	June 1, 2020, 08:22 AM	Mosciski Inc. Creative Design Agency	FREELANCE	Intern UI Designer		Pending
#APL-0005	June 1, 2020, 08:22 AM	Highspeed Studios Creative Design Agency	FULLTIME	Senior UX Designer		Candidate
#APL-0006	June 1, 2020, 08:22 AM	Funk Inc. IT Department	PART TIME	Junior UI Designer		On-Hold

A tab to see which companies they have applied to



Learn >



Employment ▾

Search Job

Applications

Companies



Settings



Around You



Search by Title, Company or any jobs keyword

FILTER

FIND

Quick Filter

Freelance

Part Time

Fulltime

Rating: ★★★★★

Showing 246 Jobs Results

Based your preferences

Salary

Newest ▾



A tab to view companies we have partnered with, and companies that have signed up on our platform.



Funk Inc

IT Department



Highspeed Studios

Creative Design Agency



Highspeed Studios

Creative Design Agency

[Reach Out](#)



80-100

Employee



4.5

Reviews



London, England

Location

About Company

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.

Financial Breakdown

Investments	2021	2022	2023	2024	2025	2026
WIFI System + Setup + Maintenance	\$58,631.60	\$2,000.00	\$2,000.00	\$2,000.00	\$2,000.00	\$2,000.00
Energy System + Setup + Maintenance	\$319,800.00	\$7,800.00	\$7,800.00	\$7,800.00	\$7,800.00	\$7,800.00
Laptops + Maintenance		\$195,400.00	\$390,400.00	\$390,400.00	\$58,900.00	\$58,900.00
Website Development + Maintenance	\$61,200.00	\$30,060.00	\$30,060.00	\$30,060.00	\$30,060.00	\$30,060.00
Creation of Courses	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00	\$5,000.00
Marketing	\$1,000.00	\$2,500.00	\$5,250.00	\$7,166.67	\$7,166.67	\$7,166.67
Total Cost	\$445,631.60	\$242,760.00	\$440,510.00	\$442,426.67	\$110,926.67	\$110,926.67

Summary of Solution

INFRASTRUCTURE

1. Internet Access

- Internet will be extended to all communities in Dharche
- A 300 mbps transmitter will replace the current one to increase connectivity
- 8 new relay stations will be built with solar panels & lightning arresters
- All homes will be provided with a router

2. Alternative Energy

- Solar panels will be installed for all new relay stations
- A hybrid model for electricity generation will be introduced, combining wind, hydro, and solar
- 6 wind turbines will be installed in Kerauja, a north-facing community with little sunshine, but high wind speeds

3. Laptop Distribution

- Females ages 11 to 49 will be eligible to sign up for a laptop every February
- Laptops are secured with biometrics and an anti-theft system
- Laptops distribution and setup will occur at the nearest school
- \$30 deposit and \$200 fine if laptop is lost, not returned, or sold

PLATFORM

4. Education

- Nepal's school curriculum, which is set in a *national* curriculum framework, will be implemented on the platform for Grades 6 and up
- Videos, readings, quizzes, and other course material will be in Nepali, created by certified Nepali teachers, and organized by grade, subject, unit, then lesson
- An additional mini-course will be added for education on Chhaupadi
- Course material can be downloaded by lesson in a zip file, with videos in .mp4 format, and lesson notes and quizzes in .pdf format

5. Employment

- A Continuing Education section will house courses to refine their skill set, including career skills, marketing, design, and web development, and will be curated and designed by members of Girls in Tech Nepal
- Special courses will be offered by working with Trip Advisor to encourage women to create their own job opportunities in tourism, and with Haat Bazaar for e-commerce and semi-subsistence agriculture
- Completed courses will show on profile, and allow direct connections to employers

Five Year Plan

2021

May 2021

- With some guidance from the NWNP's expertise, conduct land surveying
- Finalize measurements for relay station & wind turbine installation
- Finish platform prototype

July 2021

- Purchase all necessary equipment to build WIFI, electricity infrastructures and some laptops for beta users for next year
- Begin installation

2022

January 2022

- Finish installation
- Begin testing relay stations & turbines
- Finalize platform development

April 2022

- Finish testing and adjustments
- Distribute routers to households
- Begin platform beta testing

May 2022

- Begin platform beta testing
- Gather certified teachers for digital course material creation
- Gather members of Girls in Tech Nepal for course development
- Finalize collaboration details with TripAdvisor and Haat Bazar

September 2022

- Finalize initial course material
- Finalize initial cont'd education courses to release on platform
- Test courses on platform

2023

January 2023

- Continue to contact and partner with companies to add their job hirings on our platform
- Continue to add courses on our platform

February 2023

- Mail out laptop signup forms
- Official platform release to public
- Purchase laptops based on requests

March 2023

- Distribute laptops at local schools
- Help locals with initial setup

2024

January 2024

- Infrastructure maintenance as needed
- Maintenance of platform & bug fixes
- Update platform with 5 new courses

February 2024

- Send out renewal/return/request laptop forms
- Review number of cases of fines and make adjustments to program
- Add new features to platform based on feedback

March 2024

- Collect & redistribute returned laptops
- Place new orders as per request
- Address complaints in 1st year of laptops

2025

January 2025

- Check infrastructure & address complaints
- Platform maintenance
- Update platform with 10 new courses

February 2025

- Send out renewal/return/request laptop forms
- Categorize most popular courses

March 2025

- Collect & redistribute returned laptops
- Place new orders
- Evaluate new potential laptop models

2026

January 2026

- Evaluate growth in tourism & e-commerce using GDP
- Evaluate female drop-out rate
- Platform maintenance
- 20 new courses on platform

February 2026

- Mail out renewal/return/request laptop forms
- Gather data from tourists on experience

March 2026

- Collect & redistribute returned laptops
- Place new orders
- Use metrics to evaluate success

Outcomes



Decrease in Chhaupadi Huts, Increase in Education

As education becomes more accessible through the laptop distribution and platform, there will be a decrease in the number of girls in Chhaupadi huts. The platform also includes a mini-course in partnership with Be Artsy that educates on the issue of Chhaupadi.



Increase in Employment in the Digital Economy

The Siknuhōs Nepal platform and this proposal provides girls the opportunity to learn digital skills and connecting them with companies. Hence, increasing digital literacy which allows women to contribute to the digital economy.



One Step Closer to Gender Parity

Currently, there are 22% more girls than boys in Dharche, but the number of boys in schools are higher at every grade level. By implementing this proposal, there will be an increase in the number of girls in high school, and thus, the workplace and digital economy.

Success Metrics

Current rates and percentages and projected values by 2026.



Female Employment Rate

22% to 30%, 8% increase



of Female Transitions to Semi-Commercial Farming

144 transitions



Female Drop-Out Rate

Grade 8 to 9: 10% to 5%
Secondary: 82% to 30%



of Female Establishments Added to TripAdvisor

290 additions



Female Digital Literacy Rates

23% to 54%, 31% increase



Girls in Chhaupadi Huts

19% to 15%, 4% decrease



Income Obtained through Tourism

\$297,320 to \$590,800,
\$293,480 increase



of Women Who Find Jobs Through our Platform

46 jobs landed

On A More Personal Note...

Dear United Nations,

We'd like to thank you for giving us this amazing opportunity to help increase employment in the digital economy for women in Dharche! We really appreciate the time you dedicated to making this possible.

Undoubtedly, there were many hardships and roadblocks along the way. We had to scourge the depths of the internet for information and statistics relating to the remote area of Dharche, map out the entirety of the Gaunpalika on Google Earth, and learn how internet even works. Nonetheless, we cherished every moment, especially when we were able to meet with Mahabir Pun!

The four of us are extremely excited to see what the future holds for Dharche, and hope to embark on the Manaslu Circuit Trek as soon as it's safe again.

Best Regards,
Bernice, Samantha, Hana, Siyana



Bernice Lien



Samantha Ouyang



Hana Ahmad



Siyana Lalani

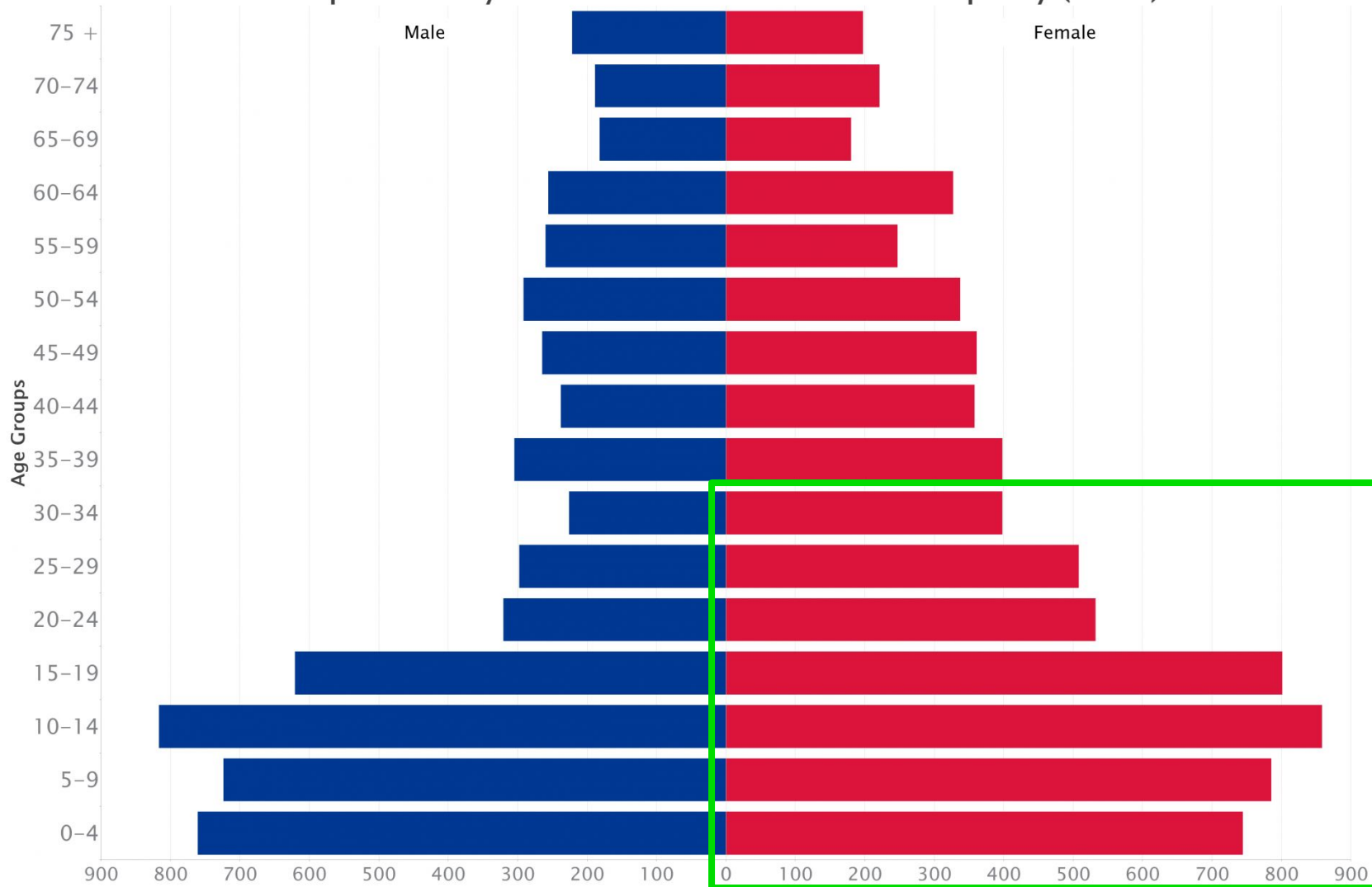


The background features a blurred image of a workspace. On the left, a laptop keyboard is visible. In the center, a hand holds a pen over a notebook. On the right, a stack of books or papers is partially seen. The entire scene is overlaid with a semi-transparent red gradient.

APPENDIX

Female Population of Dharche

Population Pyramid of Dharche Rural Municipality (2011)



(Copyright: NepalArchives.Com. Data: CBS, Nepal)

Since this information is from 2011, we take the number of girls ages 0 to 34, as they would be 10 to 44 in 2021.

To discount the number of 10 year old girls, we can take 80% of the number of girls ages 10 to 14.

$$0.8 \times 744 = 595$$

of Females Ages 11 to 44 in 2021:

- 11 to 14 → 595
- 15 to 19 → 801
- 20 to 24 → 858
- 25 to 29 → 801
- 30 to 34 → 532
- 35 to 39 → 510
- 40 to 44 → 390

Total: 4620

Financial Breakdown

Wifi and Energy System Equipment Cost

Most of the equipment is purchased wholesale from Chinese manufacturers, hence the low cost.

Purchase	Amount	Unit Cost	Total Cost
Routers	3200	\$4.90	\$15,680.00
Transmitter/Receiver	2	\$95.00	\$190.00
Antenna	8	\$48.00	\$384.00
Long Poles	8	\$74.05	\$592.40
Solar Panel (360W + 72 cells)	24	\$79.20	\$1,900.80
Lightning Arresters	8	\$12.00	\$96.00
Long Poles	8	\$74.05	\$592.40
Solar Panel (360W + 72 cells)	24	\$79.20	\$1,900.80
Grounding System	8	\$2,000.00	\$16,000.00
Lighting Arresters	8	\$12.00	\$96.00
Wind Turbines	6	\$2,000.00	\$12,000.00
Total			\$49,432.40

Financial Breakdown

Wifi and Energy System Equipment Installation & Maintenance

Service	Amount/Years	Unit Cost	Total Cost
Wind Energy Installation	6	50,000	\$300,000
Wind Energy Maintenance	5 years	1,560	\$7,800
WiFi Installation	8	\$300	\$2,400
WiFi Maintenance	5 years	2,000	\$10,000

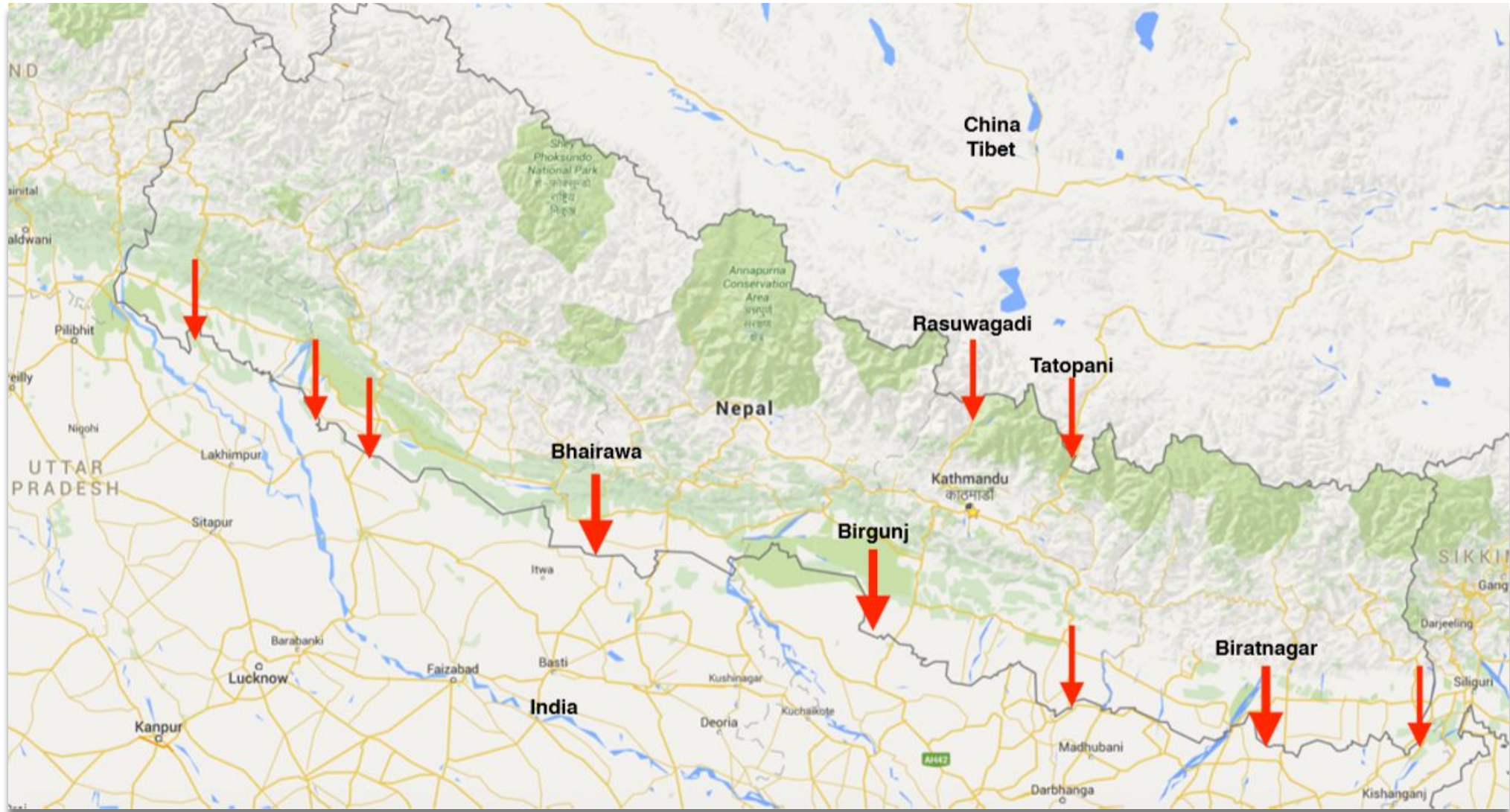
Laptop Distribution

Purchase	Amount/Years	Unit Cost	Total Cost
Laptops	4620	\$195	\$900,900
Laptop Maintenance	5 years	\$800	\$4,000

Schools in Dharche for Laptop Distribution

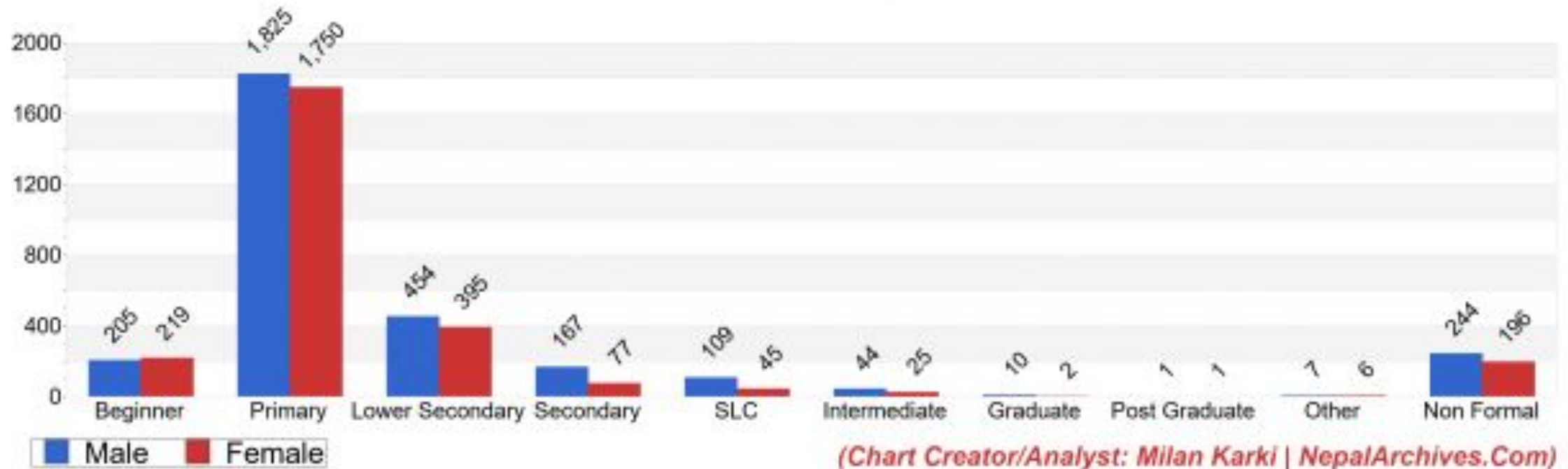
 SCHOOL INFORMATION				
VDC	School name	School Code	Ward Number	Location
Gumda	Jana Jagriti Pra V	360280001	5	Machhakhola
Gumda	Janasewa Pra V	360280002	4	Yamgaun
Gumda	Amar Nath Pra V	360280003	5	Lapsibot
Gumda	Singha Devi Ni Ma V	360280004	3	Singla
Gumda	Suryodaya Ma V	360280005	6	Gongrchet
Kashigaun	Manjushri Ma V	360320001	3	Mijhiku
Kashigaun	Surya Devi Pra V	360320002	2	Yarsa
Kashigaun	Chandra Devi Pra V	360320003	9	Dharakhola
Kerauja	Kerauja Ma V	360340001	4	Danda Gaun
Kerauja	Ichha Ni Ma V	360340002	7	Hulchuk
Kerauja	Gandaki Ni Ma V	360340003	6	Runchet
Kerauja	Shiva Pra V	360340004	3	Kerauja Besi
Kerauja	Ganesh Himal Pra V	360340005	9	Dhobhan
Laprak	Manikam Devi Ma V	360370001	6	Phyapchet
Laprak	Laprak Boarding School	360370002	9	Laprak
Lapu	Gorakh Nath Pra V	360380001	6	Khani Gaun
Lapu	Ganga Jamuna Pra V	360380002	4	Bhirkuna
Lapu	Prabhat Kiran Ni Ma V	360380003	3	Lapubesi
Lapu	Kal Ratri Ma V	360380004	8	Majhgaun
Lapu	Shanti Pra V	360380005	2	Pautu
Lapu	Himalaya Pri School	360380006	1	Lapu
Uhiya	Parwati Ni Ma V	360660001	4	Thankhola
Uhiya	Dungala Pra V	360660002	8	Dungla Faiwang
Uhiya	Satkanya Devi Ma V	360660003	3	Khorla
Uhiya	Tatopani Pra V	360660004	1	Khorlabesi
Uhiya	Lakpal Pra V	360660005	8	Lakpal
Gumda	0_UNDECIDED_SchoolName			
Kashigaun	0_UNDECIDED_SchoolName			
Kerauja	0_UNDECIDED_SchoolName			
Laprak	0_UNDECIDED_SchoolName			
Lapu	0_UNDECIDED_SchoolName			
Uhiya	0_UNDECIDED_SchoolName			

Cross-Border Points of Fibre Optic Cables



Enrollment at Every Education Level by Gender

Education Levels by Gender



Primary to Lower Secondary Female Drop-Out Rate:
 $1750 \div 4 = 438$ students in two grades; to scale
 $(438 - 395) \div 438 = 10\%$

Primary to Secondary Female Drop-Out Rate:
 $(438 - 77) \div 438 = 82\%$

Justification of Success Metrics

8% increase in female employment

22% of working-age women, defined as age 15 and above, are unemployed in Nepal. Referring to the population pyramid from 2011, there are 5992 females ages 5 to 69, who would be ages 15 to 79 in 2021.

$0.22 \times 5992 = 1318$ females currently working

Between 2015 to 2018, Nepal's female labour force increased from 2.08 million to 2.24 million, and we expect to match this rate.

$2.24 \div 2.08 = 1.08 = 8\%$ increase over 3 years

$22\% + 10\% = 32\%$

$0.30 \times 5992 = 1798$ total females working

$1798 - 1318 = \mathbf{480}$ more females employed

144 female transitions to semi-commercial farming

In SAHAS Nepal's [2017 Annual Report](#), it was noted that they were able to transform 819 farmers from subsistence into semi-commercial farmers (pg. 7).

This was in one year where they reached 80,000 households across Nepal however. Since we are only operating in Dharce, with 3128 households, but for 3 years with the platform launch, we made the following calculations:

$(819 \div 80000) \times 3128 = 32$ using identical proportions

$32 \times 3 \text{ years} = 96$ transitions

However, given that we are partnering with the Haat Bazar as well whereas SAHAS Nepal was not operating with a popular e-commerce platform, we expect at least 50% more transitions, for a total of $1.5 \times 96 = \mathbf{144}$ transitions.

Since 66% of the working population are farmers:

0.66×1318 working females = 870 female farmers

$144/870 = \mathbf{17\%}$ of female farmers will transition

Justification of Success Metrics

290 female establishments added to TripAdvisor

There are 13 community homestays in Hemjakot, an area similar to Dharche, also in Western Nepal. However, Dharche is also already hoping to create 250 community homestays over approximately the next 7 years.

Estimating that $(3 \div 7) \times 250 = 107$ new government supported community homestays in 3 years, with 75% of them being female-led and also choosing to add them to TripAdvisor, we expect to match this number ($0.75 \times 107 = 80$) and obtain the following distribution of establishments:

- 80 + 80 = 160 homestays
- 80 local guides
- 50 tea shops, pottery classes, yoga classes, jewelry shops, etc.

$160 + 80 + 50 = \mathbf{290}$ female establishments added

46 jobs landed through our platform

With the projected growth rate of 8% and 480 more females employed, that would leave:

$480 - 285 - 144 = 51$ jobs landed through the platform

Only 2% of job applicants will receive an interview.

Since our platform is accessible to 4620 females, that would mean:

$0.02 \times 4620 = 92$ would receive an interview, assuming they all apply

Assuming 50% get the job after the interview, that would be **46 jobs landed**.

Justification of Success Metrics

31% increase in female digital literacy

Nepal currently has a 31% digital literacy rate. Assuming digital literacy is taught in schools, we can benchmark values through the literacy rate. The adult literacy rate is 67.91%, but there is a wide gap between the genders: 59.72% for females and 78.59% for males.

$$67.91\% - 59.72\% = 8.2\%$$

$$31\% - 8.2\% = 22.8\% = 23\%$$

0.23×6890 females ages 10 and up = 1585 digitally literate females

Assuming that our platform is accessible to 4620 females and that 80% will become digitally literate through the courses:

$$0.8 \times 4620 = 3696$$

$$3696 \div 6890 = 54\%$$

$54\% - 23\% = \mathbf{31\% \text{ increase in female digital literacy}}$

\$293,840 increase in income obtained through tourism

Nepal has a population of 28.61 million and its tourism sector earns \$643 million. Dharce has a population of 13,229. Making an estimate with proportions:

$$(\$643 \div 28.61) \times 13229 = \$297,320$$

The [per capita income](#) in Nepal is \$1012 as of 2018.

$\$1012 \times 290$ new female establishments = **\$293,480 increase in income per year from tourism**

$$\$297,320 + \$293,480 = \$590,800$$

52% decrease in secondary drop-out rates

Our platform is available to 595 girls of Grades 6 to 8 age and 801 girls of secondary school age. Currently, the drop-out rate from primary to higher secondary is 82%, and 10% from primary to lower secondary.

Estimating that our plan will keep 70% of girls in higher secondary school and 95% of girls in lower secondary:

$$\frac{2}{3} \times 595 = 397 \text{ girls in two years of school}$$

$0.7 \times 397 = \mathbf{278 \text{ girls still in school in higher secondary}}$

$0.95 \times 397 = \mathbf{377 \text{ girls still in lower secondary}}$

$$(397 - 278) \div 397 = 30\% \text{ drop-out rate}$$

$82\% - 30\% = \mathbf{52\% \text{ decrease in higher secondary drop-out rates}}$

$$(397 - 377) \div 397 = 5\% \text{ drop-out rate}$$

$10\% - 5\% = \mathbf{5\% \text{ decrease in lower secondary drop-out rates}}$

Justification of Success Metrics

Be Artsy Case Study & Partnership

Be Artsy NGO's [Rato Baltin project](#) reported that 91.7% of the respondents admitted to having made changes to their practice of Chhaupadi. Their project involves a four-step plan that tackles the two main issues - lack of education and access to safe menstrual care products:

- 1) Hold sex education workshops to teens in local schools
- 2) Provide education through workshops to all women on healthy and hygienic menstrual health care practices
- 3) Distribute menstrual cups & provide support on use and care
- 4) Create participative photography workshops to help the girls showcase how their feelings on periods and Chhaupadi

Partnering with Be Artsy NGO will allow us to help directly in tackling the issue of Chhaupadi, with their knowledge and expertise and already curated resources, curriculum, and education materials through their workshops, as well as provide them with a broader reach in the transfer to an online platform.

While the course on our platform only tackles the education aspect, it can open up doors to the last two steps of the plan. Assuming a 50% leak in the pipeline to success with only the first two steps of their plan, we estimate $0.5 \times 91.7\% = \mathbf{46.5\% \text{ will change}}$.

4% decrease in number of girls in Chhaupadi huts

There are 4842 women ages 15 to 50 (menstruating age) as calculated from the population pyramid. Given that 19% still practice:

$0.19 \times 4842 = 920$ females practicing Chhaupadi
 0.19×390 (females ages 45 to 49 not reached by platform but still menstruating) = 74 not reached

Estimating that 60% of the 4620 females on the platform, subtracting 595 for girls ages 11 to 14 = 4025 menstruating females on the platform, actually take the course:

$0.6 \times 4025 = 2415$ will take the course
 $0.19 \times 4025 = 765$ females on platform practicing Chhaupadi
 $0.6 \times 765 = 459$ females on platform practicing Chhaupadi will take the course
 $0.465 \times 459 = \mathbf{213 \text{ females no longer in Chhaupadi huts after taking our course}}$

$920 - 213 = 707$ still practicing
 $707 \div 4842 = 15\%$ (**4% drop** from 19%)

Secondary Education Examination Scores



GMIN UK

Secondary Education Examination (S.E.E) 2073/2074 result was published last week in Nepal. And we are pleased to share the result of the SEE students from Shree Prabhat Kiran Secondary School in Lapu Besi, Lapu -3, Gorkha. Out of the total 11 students:

7 scored grade B,
4 scored grade C+
1 scored grade C.

This year's result has improved significantly compared to last year. We would like to congratulate to all the students and teachers. Well done everyone and the best ahead! 😊

After the recent local election, this village development committee VDC has been changed to Dharche Gau Palika (Rural Municipality) Ward No 7 - Lapu Besi, Gorkha. GMIN UK/ #TeamGMIN has been supporting Lapu Besi village and other around since the beginning of our relief effort till the ongoing community redevelopment projects. Once again we would like to Thank all our donor, supporters and our team on and behind the scene.

Regards,
GRASSROOT MOVEMENT IN NEPAL UK (GMIN UK)
UK Charity Reg No. 1163803

Timeline Photos · Jun 20, 2017 · 🌐

Upper Secondary (National Exam Board) Grading Scale

PERCENTAGE	DESCRIPTOR	WES CONVERSION
75-100	Distinction	A
60-74	First Division	A
45-59	Second Division	B
35-44	Pass Division	C
0-34	Fail	F

Shree Prabhat Kiran Secondary School in Lapubesi has a total of 11 students.

- 7 scored a B (45 to 59%)
- 4 scored a C+ (41 to 44%)
- 1 scored a C (34 to 40%)