

INCOME GENERATION



FISH FARMING II

Sarlahi, Janakpur, Nepal

PROPOSAL

August 2018 - Hoste Hainse

1. INTRODUCTION

Hoste Hainse, a non-profit non-governmental organization (NGO), was founded in 1990 by Sulochana Shrestha-Shah, and had the initial purpose of ensuring sound working conditions for the employees of its sister concern, Formation Carpets, a for-profit hand-knotted rug exporting business. The efforts of Hoste Hainse included hygiene programs with complimentary health insurance, provident fund facilities, and paid maternity leave, to name a few, for a 100% female workforce advocating women empowerment. Programs like a day-care and pre-school facility for the children of the employees, to ensure the children would not end up playing on the streets (which was a problem that plagued Nepal then), were one of the first milestone efforts of Hoste Hainse. As the children grew up, Hoste Hainse started to become involved in obtaining full/partial scholarships for them to attend school with the proceeds of Formation Carpets business. This catapulted Hoste Hainse into the education sector.

In parallel, Sulochana Shrestha-Shah was at the forefront of battling child labor issues in Nepal, hand-in-hand with 2014 Nobel Peace Prize Winner, Kailash Satyarthi, which led to the establishment of Goodweave (then known as Rugmark) in 1995. Goodweave is dedicated to ending illegal child labour primarily in the hand-knotted rug manufacturing industry, via a certification program that allows companies like Formation Carpets that pass inspection to attach a label certifying that their product is made without child labor. More importantly, Goodweave rescues children forced into child labor and has facilities for rehabilitation, which includes education and reunification with parents.



By 1997, Sulochana Shrestha-Shah was awarded the Advocates for Human Rights Award for her continuous spearheading of social issues from the business sector, her work at both Formation Carpets as well as Hoste Hainse, pushing her motto "business with ethics." The Human Rights Award yielded in multiple synergies with like-minded individuals and organizations, and launched the Hoste Hainse Schools across rural Nepal, primarily where poverty levels are high and education penetration low.

Hoste Hainse currently runs four schools, grades ECD (Early Childhood Development) through 10, across four villages in the district of Sarlahi, which lies in the Terai, the plains in the south of Nepal. Sarlahi is considered a "durgam chhetra" which means that poverty-levels are very high, gender discrimination rampant, access to basic facilities difficult, and education penetration in the average household extremely low. Sarlahi, with a literacy rate below 50%, is one of the least educated districts in Nepal. Our programs in Sarlahi started in 1998, and 20+ years later we are proud to share that our high school matriculation rate (SLC/SEE) has always been over 90%

since inception, with the national average being at about 40%, and the government school average being at about 20%. As of now, the number of girls in high school is climbing up to the same level as boys. Because our schools are so high performing, even children not enrolled in our schools flock to our classrooms, and we do not have the heart to turn them away. Further, our education programs are complemented by Income Generation Programs, such as fish farming, which is indigenous to the region, and are run by parents and other members of our schools, which in turn generates funds to make our schools as self-sustaining as possible.

Hoste Hainse also provides educational support to schools in Jhapa, Nawalparasi and Bajura in conjunction with partner organizations, *Chance for Life Nepal*, *Nepalhilfe Bietigheim-Hersfeld*, and *Zukunft Entwickeln*, to name a few. Post-earthquake (2015), we started educational support programs in Sindhupalchowk and have re-built schools in the region.

A paragon in providing educational support to underprivileged children across Nepal, Hoste Hainse has more success stories than it has been able to tell, public relations being one of its weaknesses. To tackle this, we have recently started an informal blog, which aims to tell stories expediently as they happen, before they get lost: www.hostehainse.org/blog.

Hence, what started as a simple scholarship project for five underprivileged children at a carpet factory is now an organization that supports over 2,500 across Nepal.

In case you are wondering, the colloquial Nepalese expression "Hoste Hainse" can best be translated into English as "Heave Ho" which is the term most used in Nepal while collectively working on a challenging task. **So, let's Hoste Hainse!**



Related links:

- Formation Carpets: www.formationcarpets.com
- Goodweave: www.goodweave.org
- Advocates for Human Rights: www.theadvocatesforhumanrights.org

2. BACKGROUND

Sarlahi is a district in the south western region of Nepal that Hoste Hainse has been actively involved in since 1998. Sarlahi has a high proportion of Dalits (“untouchable caste”) and people of low-castes. Historically, different social and ethnic groups have had uneven access to basic services, resources as well as opportunities. With the belief that education is the path out of poverty, and that it is a fundamental right to all people, Hoste Hainse has built schools in Sarlahi and has been operating them since the turn of the millennium.



Hoste Hainse is engaged in various educational programs in four localities, known as VDC's (Village Development Committees), of Sarlahi, namely Dhangada, Sahodwa, Shreepur and Padariya. These educational programs entail not only the operation of schools, but also income-generation programs in an attempt to make the schools self-sustainable, as well as increase the livelihood of the people from the localities. The schools are set up in a non-profit free-for-all manner for the education of marginalized and needy children, while the income-generation programs are run with the people of the localities in mind, with a preference to the parents of children enrolled in the Hoste Hainse schools.

The bulk of the expenses (about 80%) of running the Hoste Hainse schools is attributed to teacher salaries, which are, however, about 50% lower than government teacher salaries. Still, the teachers at the Hoste Hainse schools are content with their lower salaries, as they know their pupils are matriculating at a rate of 90%+ while the government students are at about 20%. In the future, once the Hoste Hainse schools become self-sustainable via their income-generation programs, Hoste Hainse plans to revisit teacher salary structure, viz-a-viz, raise them.

About 20% of the total expenses of operating the schools consists of books, stationary, and other supplies, inclusive of teaching aids. The Hoste Hainse central office charges a 0% overhead to keep expenses low.



Hoste Hainse firmly believes the education empowers people, and this is especially important when people are misrepresented in the decisions that affect them. In seeking to educate the underprivileged and low-caste students, Hoste Hainse hopes to ignite a social reform where people are recognized and given equal opportunities regardless of their caste. This has already started, which can be seen with the positive rate of development in the Sarlahi district.

3. PROJECT

Food, shelter and clothing have always been the basic needs of human beings. Although we live in the 21st century, and the World Bank claimed last fall that global poverty has fallen to about 10%, parts of the world in that 10% still struggle due to the lack of these basic needs. Sarlahi finds itself in that struggling part of the world.

Access to basic needs is directly proportional to income. Income in Sarlahi has been dependent on age-old traditions handed down over generations. These traditions include farming and fishing, to name a few. But the reality is that these traditional approaches of income generation are not sufficient for families to generate enough earnings to sustain basic needs. It is not the profession that is flawed, but the inadequate methodologies as well as the limited know-how of these families that forces them to conditions in which they are not able to generate enough income.

Therefore, income generation programs in the form of skill development are needed to enhance income of these families for them to be able to sustain themselves. The key is not to "reinvent the wheel" by introducing them to something brand new, but to teach them to do something they have been doing for generations, but better. This teaching also needs to be complemented with one-time investment for them to pass the critical mass tipping point so that the families can continue the programs with the momentum they have gained via the initial investment.

Indigenous Knowledge - Families in Sarlahi have been engaged in traditional fish farming for generations.



Strategy

Self-sustainability is the key strategy as well as objective of the income generation program in question. This can also be translated to "invest once; run forever." Families engaged in fish farming in Sarlahi are limited to performing it on a community basis and often without the tools and/or technologies which allows them to scale their operations. These problems can easily be solved with 1.) skill development training and 2.) seed funds to invest into facilities which allow for scaling.

Both skill development training and seed funds go hand in hand. The seed funds primarily allow for a critical mass pond to be dug using heavy machinery, which allows for operations to be scaled, as well as enough required tools and required produce to be purchased up front. Skill development training teaches the stakeholders how to efficiently leverage the purchased tools and methodologies to efficiently scale fish farming into self-sustainability.

In addition to self-sustainability, a demand of return-on-investment also aids in the longevity of the project, as the project will be run with the mindset of a business. The idea is to get the project started with seed funds of USD 20,000, but demand a return of USD 3,000 annually, which will be donated to the Hoste Hainse Sarlahi Schools. In theory, the project will pay for itself in seven years.

The best part is that Hoste Hainse has already successfully implemented its first Fish Farming Income Generation project and realized a gain of USD 3,000, which was donated to the Hoste Hainse Sarlahi Schools. We shall refer to this project "Fish Farming I." Fish Farming I is currently in its second year of operation. The first year was plagued with first-time implementation challenges as well as a monsoon flood which set the project back by a few months, but the project was so successful that albeit all the problems faced, it was able to generate its promised income.

Further, Hoste Hainse has been operating income generation programs in Sarlahi for the last 10+ years, primarily via the Poverty Alleviation Fund (PAF). The programs via PAF, although at a smaller level, have given Hoste Hainse enough experience how to run income generation programs. Programs include chicken, duck, goat and buffalo keeping, irrigation management, tailoring, shop keeping and also fish farming. Because of our experience in fish farming via PAF projects, we feel even more confident in formulating this proposal, as necessary due-diligence and feasibility studies have already been performed.



Fish Farming I – Pond

Plan

As mentioned in the Strategy section, the fish farming income generation program in Sarlahi can be broken down into two main sections: skill development training and seed funds required for scaling, which go hand in hand.

The fish farming income generation program will be operated by Hoste Hainse under the leadership of local coordinator, Binay Chaudhary. Five locals from the community will drive the project and will be the main stakeholders. These five can opt to engage more stakeholders if required, depending upon the volume of work, but will hire as many people as needed for the success of the venture.

The stakeholders are parents of children currently attending the Hoste Hainse Padariya School, and were selected based upon their experience as well as interest in fish farming. They are active in their community and have shown entrepreneurship which this project needs.

The population of Padariya is approximately 6,000 people. The Hoste Hainse Padariya School has attendance of about 330 children, encompassing roughly 660 parents. The fish farming

venture, although led by five, will benefit about 50 people, including but not limited to, the 660 parents. For example, villagers who help catch fish will work on a commission basis and will get 10% of the sales price of the fish.

Skill Development Training

Traditional community-based fish farming may involve two or more families heading out into a public pond or river with a net, catching fish, and serving it as part of a daily meal, and selling excess fish in the local market. Often times, the nets are too small, have holes and/or the techniques used by the families yield in an inadequate number of fish caught, not to mention the type of fish or whether it disturbs the local ecosystem for natural re-generation.

Skill development training in fish farming will teach stakeholders and associated members of the project on how to run a balanced eco-system which will constantly generate enough catch, not only to feed families of the stakeholders and their associates, but also to generate additional income via the sale of catch.

Additional training will address accounting and management, as well as leadership.

Seed Funds for Scaling

In scaling, viz-a-viz business via volume, the concept of critical mass is not foreign. Critical mass is the amount of volume required for a venture to run at profit. Often times critical mass is not achieved due to lack of sufficient initial investment which dooms a project from the beginning. In fish farming, there are a number of factors that aid in achieving critical mass:

a.) Land

Adequate land for ponds required for fish farming. The land will be leased from the Government of Nepal for 10 years at a subsidized rate of NPR 30,000 per year. This cost will be borne by the stakeholders. The Government of Nepal has special lease programs for development activities, which is what we are taking advantage of. The lease can be renewed every 10 years, provided productivity is shown to the government.

Minimum amount of land needed: 2 bigha's (145,800 sqft.). Traditional fish farming is performed in 1/40th of the minimum amount needed.

Reference: https://en.wikipedia.org/wiki/Nepalese_customary_units_of_measurement

The land will be located close to the Hoste Hainse Padariya School, approximately 1 kilometer from the school.

b.) Pond(s)

For fish farming, a minimum of one pond is required, but two ponds are preferred, so that the baby fish can be separated from the bigger fish. Each pond should be six to eight feet deep. The pond for the baby fish can take about 10% of the total land, while the pond for the big fish the remaining land.

An excavator is required to dig the pond, which will be the bulk of the cost. Local Sarlahi business people with excavators have already been approached and they are ready to work at heavy discounts since this project is for the good of their communities. The excavator cost listed in the budget section of this document reflects the discounts that have been offered.

c.) Irrigation

A pond requires water. The easiest method to fill a pond with water in the Terai is via shallow-boring up to 150 feet. The Department of Agriculture provides complimentary boring facilities for projects in Sarlahi because of the poverty level of the people in the region. A boring machine as well as a 5-kva generator is provided by the Department of Agriculture. Stakeholders are required to supply the diesel required to run the generator, which the stakeholders have agreed to do at their own cost.

d.) Shed

A shed that houses an office, supplies as well as monitoring equipment for the fish farm. It can be a simple room 10 feet by 15 feet.

e.) Baby Fish ("Bhurra" in Nepali)

The initial baby fish to start the fish farming venture. 5,000 baby fish which are between 15 and 30 days old, and which should be measured at 1 kg. for every 100 fish, for them to be considered healthy. Four types of local fish which can co-exist will be bought, namely, *Rohu (Labeo Rohita)*, *Naini (Cirrhinus Mrigala)*, *Common Carp (Cyprinus Carpio)* and *Silver Carp (Hypophthalmichthys Molitrix)*.

"Bhurra" costs between NPR 5 and NPR 10 per baby fish depending upon size/weight.



Rohu (*Labeo Rohita*)



Naini (*Cirrhinus Mrigala*)



Common Carp (*Cyprinus Carpio*)



Silver Carp (*Hypophthalmichthys Molitrix*)

Reference:

Rohu (*Labeo Rohita*):

<http://www.mpfisheries.gov.in/en/rohu>

Naini (*Cirrhinus Mrigala*):

<http://www.mpfisheries.gov.in/en/mragal>

Common Carp (*Cyprinus Carpio*):

<http://www.mpfisheries.gov.in/web/fisheries/camancarp>

Silver Carp (*Hypophthalmichthys Molitrix*):

<http://www.mpfisheries.gov.in/web/fisheries/silvercarp>

Implementation

With the critical mass pre-requisites fulfilled, the actual fish farming will include cultivating baby fish in the smaller pond for usually three months after which they are transferred to the bigger pond. Not all fish are expected to grow to the desired transfer size, and therefore only the fish that are big enough will be transferred from the smaller pond to the bigger pond. Smaller fish are left to feed more and grow bigger in the smaller pond. After approximately another three months in the bigger pond, the fish can be caught and sold. In essence, on the average, a fish farming lifecycle lasts six months in terms of aquaculture. What is important to note that the

decision to transfer fish from one pond to another will depend upon the size of the fish at transfer time. Transfers can be delayed if fish are not deemed big enough at the time.

For each subsequent month after the first month, another 1,000 baby fish will be bought and introduced into the smaller pond. This cost will also be taken on by the stakeholders. Fish can be filtered by different sized nets or manual selection by hand, as labor is relatively cheap in Sarlahi. Therefore, starting in month six, each subsequent month will yield in monthly "harvests" as the baby fish go through the six-month "raising" lifecycle.

Fish require food. Feed is estimated to cost NPR 1,000.00 per day and is directly proportional the size of fish that is desired (overfeeding can also be a problem in fish farming). The fish farming skill development training will address the optimal feed per month per pond, as well as maintaining a healthy breed. Regular tests will also be carried out to determine how healthy the fish are. Feed may have to be modified to an optimal level depending upon the outcome of these tests. Feed for the first six months will be purchased by Hoste Hainse, while any feed after that will be purchased by the stakeholders.

In Sarlahi, fish traders flock to fish farms on harvest days to purchase catch on location. This local tradition solves the problem of transporting fish to the market for selling. Fish will be sold at market rates, which fluctuate between NPR 300 and NPR 400 per kg. Off-Season is considered the Nepali months of Ashad and Shrawan, which translates to June 15 to August 15 approximately on the English calendar. The NPR 300 sales price is seen off-season, while the rest of the year commands sale prices at least NPR 350 per kg., up to NPR 400 per kg.

Once the project is in full operation, at least 300 fish are expected to be caught every month, which brings monthly income between NPR 90,000 and NPR 120,000. Operating costs should be less than 40%, of which 25% are catch commissions (10% of the sales price), 30% is fish feed, and 45% everything else (administrative as well as managerial overhead, production as well as distribution expenses).

On the average, income of NPR 1,10,000 per month can be expected, of which at least NPR 66,000 is profit. After the first six months, this yields in an annual net margin of about NPR 7,92,000. At an easy-to-calculate exchange rate of 1:100, this is almost USD 8,000.

To share risk with the stakeholders, the stakeholders are required to rent the land required for the fish farming. Since land renting in Sarlahi can be performed with deferred payments, this should be possible, as stakeholders can promise rent payments to landlords after generating funds from the sale of fish. In this case, the stakeholders are leasing the land from the Government of Nepal at a subsidized rate of NPR 30,000 per year. The same amount of land if leased from private parties would cost between NPR 50,000 and NPR 1,00,000 per year.

The fish farming venture will be insured in case of disease or other unforeseen covered events. Total coverage is capped at USD 10,000, which means 50% of the investment is covered.

Thanks to fish farming experience Hoste Hainse has gained via Fish Farming I and its PAF fish farming projects, a 15% annual return-on-investment can be demanded from the stakeholders, who are expected to earn anywhere between 20% and 80% of initial investment.



Fish Farming I – Inspection

With an initial investment of USD 20,000.00, estimated earnings of USD 8,000.00 per year are expected. After USD 3,000.00 is donated to Hoste Hainse to run its education programs in Sarlahi, USD 5,000.00 is left to be divided amongst five stakeholders at USD 1,000.00 per person per year. USD 1,000.00 per person per year is approximately USD 83.33 per person per month, which to about USD 2.77 per day which is well above the international poverty index of USD 1.00 per day. An individual in Sarlahi earns about USD 0.90 per day on the average at the present.

USD 83.00 per person per month translates to about NPR 8,300.00 per person per month. As mentioned above in USD, the average income of an individual is Sarlahi at the present is NPR 2,700.00 per person per month (USD 27.00 per month = USD 0.90 per day).

Although it seems like the main beneficiaries of this project are only the stakeholders, over 50 villagers, who are either directly or indirectly tied to the Hoste Hainse Padariya School, stand to benefit from this venture. Further, we should not forget that this is an "invest once, run forever" project, in which the initial investment of USD 20,000 should yield a USD 8,000 margin from which USD 3,000 is donated to the Hoste Hainse Schools every single year, theoretically in perpetuity.

Theory apart, Fish Farming I provides enough empirical data for us to vouch for the sustainability of this project.

Risk Analysis

Fish farming in the Terai region of Nepal is a relatively low risk venture because it has been tried and tested for decades in the region. The general population would rather be engaged in fish farming as opposed to land farming because of fish farming's better rate of return. However, because of high investment, it is more difficult for the average local to get into efficient fish farming, and therefore only traditional inefficient fish farming is rampant.

Since this project has been tried and tested via Fish Farming I, Fish Farming II is relatively lower risk.

Further, Hoste Hainse's involvement in fish farming through its PAF income generation programs give Hoste Hainse an added benefit in terms of experience. The PAF income generation fish farming projects, however, have been lower investment projects, which ran on two-year rotations, with lower yields. For example, NPR 2,00,000 (USD 2,000) was invested in 10 villagers of Sakraul in Sarlahi via the PAF project. The initial investment of NPR 2,00,000 was paid back by the villagers within two years, during which they had an additional income of almost NPR 2,000 per month. This project started five years ago. The lower investment yields in a lower return.

General risk remains in terms of force majeure and/or political disturbances, both of which reigned in 2015, first with the earthquake and then the unofficial blockade, but apart from that, no major risk is at play.

In the off-chance that fish die due to disease, fish farming insurance covers up to USD 10,000 in claims the first year. Theoretically, 50% of the investment is insured.

Monitoring & Evaluation

Monitoring will be performed in the same mechanism monitoring is performed at all other Hoste Hainse income generation programs in Sarlahi, i.e., via regular visits by our Sarlahi coordinator, Binay Chaudhary. Passbooks at the working level and spreadsheets at the official level will continue to collect data which can be analyzed on demand.

A fish farming expert from the Department of Agriculture will also aid us in the monitoring with visits as required.

Evaluation checkpoints will be at the initial three-month and six-month stages, in addition to the milestone dates as listed on the timeline. The size and health of the fish will be the main indicators.

4. TIMEFRAME

	2019	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.
Skill Development Training										
Fish Farming		1.								
Accounting & Management		1.								
Leadership		1.								
Land Rental										
Ponds Preparation										
Manual Labor										
Excavator										
Irrigation		2.								
Shed										
Baby Fish Introduction			3.							
1st inter-pond fish transfer						4.				
1st batch of fish ready for sale									5.	
Inter-pond fish transfer										...
Fish ready for sale										...
Monitoring & Evaluation										...

Milestones:

1. Skill development training complete.
2. Pond ready for introduction of baby fish.
3. Introduction of 1st batch of baby fish.
4. 1st transfer of fish from small pond to big pond.
5. 1st batch of fish ready for sale.

5. FINANCES

	Particulars	Amount
		NPR
1.	Skill Development Training	
a.)	Fish Farming	10,000.00
b.)	Accounting & Management	10,000.00
c.)	Leadership	10,000.00
2.	Seed Funds for Scaling	
a.)	Land Rent (borne by stakeholders)	0.00
b.)	Ponds Preparation	
	Manual Labor	1,00,000.00
	Excavator	12,50,000.00
c.)	Irrigation (borne by Department of Agriculture)	0.00
d.)	Shed	1,00,000.00
e.)	Initial Baby Fish	1,20,000.00
f.)	Initial Fish Feed	2,37,000.00
3.	Monitoring & Evaluation	51,000.00
4.	Fish Farming Insurance	57,000.00
5.	Miscellaneous	50,000.00
	Total in NPR:	19,95,000.00
		NPR
	Exchange Rate:	1:100
	Total in USD:	19,950.00
		USD

6. CONCLUSION

Hoste Hainse has been facilitating income generation programs in Sarlahi for over 10 years, but this is the second time Hoste Hainse is attempting to run an income generation program with a return-on-investment, which will support the educational programs Hoste Hainse is running in Sarlahi. The first time was with Fish Farming I, the income generation program in its second year at the present. If everything goes as planned, initial investment will be recovered in seven years and additional income will be realized in perpetuity, one more step towards self-sustainability for the Hoste Hainse Schools in Sarlahi.

Hoste Hainse will work with local stakeholders who are also ready to put not only their time, but also their money on the table, for the success of the project. For example, the land rent, fuel required to run the boring machine, fish feed after the first six months, subsequent baby fish after the initial baby fish, etc., are all borne by the stakeholders. This sort of "working together" in more of a business paradigm is expected to bring more effective results as opposed to a program where every aspect is provided/donated.

Fish farming is a popular income generating venture in the Terai because of its higher return on investment, in comparison to farming grain and/or vegetables, or farming sugar cane. Hoste Hainse is also developing income generation programs in these areas.

Thank you for your support!

8. DOCUMENT REVISION HISTORY

DATE	VER.	AUTHOR	COMMENTS
2018/08/06	1.0	Krishna Shah	Initial Version.