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Table of Contents

Evaluating the Policy Claims of Migration in Nepal <i>Asmod Karki</i>	1
Unlocking the Relationship between Entrepreneurship and Socioeconomic Integration <i>Biswash Praja</i>	13
An Analytical Model for Strategic Promotion of Growth-Oriented Women Entrepreneurship in Rural Nepal <i>Chhitij Bashyal and Tara P. Panthi</i>	23
Perception of Environmental Change Relationship to Labor Migration in the Chitwan Valley <i>Jessica Miller</i>	41

Evaluating the Policy Claims of Migration in Nepal

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Abstract

The Government of Nepal published the landmark Compact Rural Settlements Policy (CRSP) in 2013. The policy paper argued for clustering settlements in rural Nepal in order to improve quality of life for people. One of the main arguments of this paper is that rural out-migration happens due to lack of services. This paper analyzes the relationship between migration and availability of services in Nepal. The results demonstrate that the relationship among migration decision, availability of health and education services is statistically insignificant. In other words, the claims of the CRSP paper needs to be reevaluated and a comprehensive cost–benefit analysis of resettlements should be conducted before government led clustered settlements are built in the country.

Keywords: Migration, Resettlements, Compact Rural Settlement Policy, Access to Facilities

1. Introduction

The Compact Rural Settlements Policy (CRSP) 2013 assumes provision of basic services crucial to economic development. This claim is not new in the arena of development. First, the argument goes, the access to basic services will help people improve their life standard (NPC, 2013). The second argument is more implicit, which assumes that availability of these services will help enhance human capabilities (Sen, 2005). The rationale behind the second argument is that the capable individuals will then propel forward the economic development.

This paper will closely examine the first argument in the context of a policy brief related to resettlement in Nepal. The CRSP argues that poor people in rural Nepal migrate from places with low availability of basic services such as healthcare and education to those places with high availability of services. In other words, the policy brief is making a claim that rural out-migration in Nepal is primarily propelled by lack of access to basic services. Thus, the rationale behind setting up clustered settlements as per the policy brief is that people in such settlements will have access to basic services, which will help them improve their lifestyle (NPC, 2013).

The need to examine these arguments arises

from the fact that the policy brief does not provide adequate explanation for their assumptions related to migration in rural Nepal. Moreover, there are very few studies that look at the migration pattern in different regions of Nepal. Gurung et al. (1983) studied the regional migration in Nepal but it was well before the rapid urbanization and out-migration began in Nepal.

In 1990s and 2000s, Nepal saw massive increase in out-migration (Seddon et al., 2002) and the population in urban centers rose dramatically (Thapa and Murayama, 2010). The recent studies in the area have mostly focused in Chitwan, which lies in the Terai region of Nepal (Shrestha and Bhandari, 2007; Bohra et al., 2011). However, results from a town in Terai cannot be used to generalize findings about Nepal because Terai region is geographically different than the mountains and hills. Terai also has comparatively greater percentage of population and numerous town centers than the other two regions. These factors might affect the migration pattern in Terai differently than in the hills and mountains.

While the assumptions in the CRSP might work for a country or a region that is largely homogenous in terms of ethnicity and race, provision of services by the state, and income distribution of people in different regions of

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the country, the assumptions need to be tested in a country like Nepal, that has diverse quality of services and socio-cultural contexts. This is because here we are discussing variations in not just one of the variables, i.e. geography, that was supposed to remain constant in the assumption but in a wide range of variables, such as level of infrastructures and presence of a town center nearby, that often interact with each other factors to produce complex decision-making frameworks.

The diversity in population, with more than 120 ethnic groups (CBS, 2012), means that there are different socio-cultural contexts in which people live. With our socio-cultural contexts influencing our decisions, we can infer that the greater the diversity in this arena, the greater the difference in frameworks under which people make decisions. Similarly, the diversity in geography might also influence the migration

patterns. The variation in the administrative region also adds complexity to the migration dynamics.

2. Literature review

There have been mixed findings regarding the relationship between migration and the availability of resources. Some studies show that rural out-migration happens primarily due to scarcity. People migrate from places with scarce resources to places with ample resources. Bilsborrow (1998) argues that the rural out-migration can in part be attributed to the “official neglect of rural economic conditions, despite rhetorical commitments to rural development.” Following the same line of argument, Ezra and Kiros (2001) extend the argument to environmental resources. In a study about the rural out-migration in Ethiopia, they found that “impoverished rural communities” have minimal mobility for schooling purposes, and vulnerability to food crisis is positively associated with rural out-migration.

In other words, they are claiming that people migrate from situation of scarcity of resources to places with ample resources as a risk-diversification strategy for households. This is consistent with the new economics of migration theory. This theory states that households and sometimes even communities use migration as a risk-diversification strategy. They use migration to mitigate risks and maximize income (Massey, 1999). Similarly, in a study in Chitwan valley in

Nepal Bohra et al. (2011) found that movements within the vicinity is predicted by the time taken to collect firewood.

However, some studies have shown contrasting finding to the above studies. For instance, White and Lindstrom (2005) found that social processes are strong predictors of rural out-migration in least developed countries. They argue that the explanation of rural out-migration related to the “geographical differences of economic opportunities and resources” fails to explain the origin of the migration pattern in some places and not others. Similarly, Gray (2009) extends the argument to the availability of environmental resources. His study of smallholder farmers in rural Ecuadorian Andres shows that years of higher migration in the region is correlated with years of higher rainfall. Similarly, Nawrotzki et al. (2013) present similar finding in their study of migration patterns in rural Mexico. They found that households with more resources have more migration rates than their neighbors who have low resources. The resources in question was the crop patterns.

3. Hypothesis

As Nepal is also a least developed country with a significant percentage of the population living in rural areas, the migration pattern can be explained either by scarcity of resources, as claimed in the Compact Rural Settlements (CRS) policy brief or by relative abundance of resources in the place of origin. Had Nepal been largely homogenous in its geographical, ethnic and economic makeup it would have been relatively straightforward to make assumptions. In general, we should expect the individuals to migrate to places with more access to resources, which is the assumption made in the CRSP.

4. Method

Description of the Sample:

I used the National Living Standard Survey (NLSS) III for the purpose of analysis. The NLSS surveys are administered by the Central Bureau of Statistics in Nepal with the support of the World Bank. The first NLSS was administered in 1995/6. Nearly a decade after the first survey, NLSS II was administered in 2003/4. NLSS III, which is used in this paper, was administered in 2010/11.

There are three units of analysis in NLSS

III. Data is collected at individual, household, and community level. The NLSS III enumerated 5988 households from 499 Primary Sampling Units (PSUs). In addition, it also tracked 1032 households that were enumerated in NLSS I and NLSS II. Thus, in total 7020 households were enumerated.

The PSUs in NLSS III are classified into fourteen strata, and both the rural and urban areas have their own datasets. I used the datasets of rural Nepal because the claims of the CRS pertain to rural parts of the country. In NLSS III, rural Nepal is classified into eleven strata that considers both the geographical and administrative differences. The regions in the Terai and in the Hills are classified based on the development regions, whereas the whole of the Mountain region is treated as one strata. The Hilly and Terai PSUs in five development regions constitute the remaining ten strata. The eleven strata used in the analysis are: Mountain, Eastern Hill, Central Hill, Western Hill, Mid-Western Hill, Far-Western Hill, Eastern Terai, Central Terai, Western Terai, Mid-Western Terai and Far-Western Terai.

Inclusion of the Regions:

In order to take the various diversities into account, I analyze the influence of the five development regions and the three ecological regions separately. Before we proceed, it is worthwhile to briefly discuss about the different regions in Nepal. Nepal is ecologically divided into three different regions: Mountain, Hill and Terai. The basis of division is the altitude of different regions. The Mountain region lies to the north of the country and is dominated by the presence of tall snow peaked mountains. The Terai region lies to the south, extending from the east to the west. The Terai is relatively flat compared to the Mountain and the Hill regions. It also has some of the most fertile land in the country and is called

the bread basket of Nepal. The Hilly region lies between the Mountain and the Terai.

Administratively, the country is divided into 75 districts, 14 zones and 5 development regions. Each district has multiple Village Development Committees (VDCs) or Municipalities depending on the population and facilities present in the area. Several districts are aggregated to form a zone and several zones are combined to form a development region. Each development region has all the three ecological regions present in it. The five development regions in the country are: Eastern, Central, Western, Mid-Western, and Far-Western.

One of the reasons for including the development regions is that there is uneven distribution of resources and services in different regions of the country. The regions around central Nepal, where Kathmandu is located, has been historically endowed with higher concentration of development activities. The regions in the western part, especially the mid-west and far-west regions, have not seen the same level of investment in basic resources from the state as regions around Kathmandu have.

As for the ecological classification, the NLSS III does not further classify the mountain districts into different regions. There are also no major town centers in the mountain region that has a population of more than 20,000 (Aparicio and Muzzini, 2013). As development of a town center requires a hub of services including access to roads and a functioning market place large enough to sustain the population residing within close proximity, absence of a large town center in this region might suggest that this region in Nepal remains either unattractive, or in the least unfeasible, for clustered settlements. Thus, inclusion of this region even without further dividing into sub-regions will likely yield us insight into the behaviors of people living in terrains with challenging geography.

Description of the Variables:

Number	Source	Variables	Description	Values	Mean	Standard Deviation
1	HH	Migration	Has the individual migrated before?	0 - No 1- Yes	NA	NA
2	HH	Time_HealtPost	Time taken in minutes to walk to the nearest sub-health/ health post	Min = 0 Max = 840	52.37	50.67
3	HH	Time_School	Time taken in minutes to walk to the nearest primary school	Min = 0 Max = 840	21.06	41.48
4	HH	Food_Consumption	Annual nominal amount in 1000 Rs. Spent by an individual for food.	Min = 0 Max = 840	16.89	5.85
5	HH	Age	Age of the individual	Min = 5 Max = 99	28.19	19.53
6	HH	Sex	Sex of the individual	0 - Female 1 - Male	NA	NA
7	HH_	HH_Size	Size of the individual	Min = 0 Max = 99	6.15	2.60
8	HH	Geography	Different geographical regions	NA	NA	NA
9	HH	Perception_Health Facilities	How does the household perceive the available health facilities?	0 - Less than adequate 1 - Adequate or more than adequate	NA	NA
10	HH	Perception_Education Facilities	How does the household perceived available education facilities/	0 - Less than adequate 1 - Adequate or more than adequate	NA	NA
11	HH	Recentness	Has the individual lived outside of two months or more?	0 - No and once 1 - More than once	NA	NA

12	HH- 2 and 9	Interaction_ Health	Is an individual who has migrated for two months or more in the past five years more likely to live away from a health facility?	Min = 0 Max = 1680	101.45	100.07
13	HH- 3 and 10	Health_ Education	Is an individual who has migrated for two months or more in the past five years more likely to live away from an educational facility?	Min = 0 Max = 2890	40.65	80.60
14	HH	wt_ind	Individual Weights	Min = 280.33 Max = 29247.31	7023.32	3395.82

Analytic Approach:

I used the probit regression method to analyze the data. The model can be represented as:

$$\text{Pr}(Y) = aU + bV + cW + dX + Z$$

The dependent variable of interest is the probability of an individual migrating to a destination. Here Y represents whether or not an individual has migrated. Our main independent variable of interest is the time taken to walk to the facilities. We are interested in two facilities, i.e. a health post and a primary school. In the equation they are represented by U and V, respectively.

Before proceeding, I analyzed if the two main independent variables are collinear. It might be the case that the time taken to walk to the educational facility might impact the time taken to reach the nearest health post. A collinearity check of the access to two variables showed that they have low correlation, around 0.19, which makes it safe to include both in the regression.

Several factors might influence the decision of people to move to a certain place in rural areas. We included these factors as controls, which is represented by W in the equation. For instance, people's socio-economic status might influence both the distance they live from the health post and the migration decision. Thus, it is important

to control people's socio-economic status. I choose the annual nominal amount spent on food by an individual as a proxy of people's socio-economic status. The reason behind selecting people's consumption comes with the assumption that people's socio-economic status correlates positively with their spending on food.

Similarly, age is another control factor included in the equation. Those who are of working age might be more likely to migrate than people located at the extremes of the age spectrum, i.e. children and old people. I hypothesize that people aged 15-30 should migrate more than the younger population but less the older population. This is because age might determine how people access basic services. For instance, young people in general might access the services more than old people and children because accessing services requires travel, which is both physically and mentally demanding especially when people have to travel a long distance. Similarly, young people also might migrate more than the children because children usually stay with their parents at home. However, I hypothesize them to migrate less than the older population because migration to rural Nepal usually means relocating to places where the market economy is under-developed. As a result, people who would migrate to these places would want to be familiar with the agriculture and farming technique. The

assumption I am making here is that old people have more experience and knowledge about agriculture in general than younger people living in rural areas.

People's gender might also influence the migration pattern and access to services. Women in Nepal generally move to their husband's house after marriage. Moreover, women sometimes have different needs than men, especially regarding maternal health (Sharma et al. 2007). Thus, they might use the services differently than men in rural areas. Vast literature exists regarding relationship between access to education and gender (Fentiman et al. 1999; Llyod et al. 2005). Thus, I hypothesize that being a male is positively associated with migration than being a female.

Another control that is included in the model is the household size. People with small family size might have different flexibility regarding migration decisions than people with large family size. Similarly, family size might also determine the type and quantity of different resources available to a person, including access to basic services. As rural Nepal is mostly agricultural, households would need family members at home to do farm related activities. Thus, I hypothesize that individuals from larger households are more likely to migrate than those from smaller households.

As discussed earlier, the unequal level of development in different regions might affect both the migration decisions of individuals and the time required to travel to the nearest facilities such as a health post and a primary school. In the analysis, we compare migration of individuals in different regions of the country compared to those who live in the mountain region. This is because the mountain region has a low percentage, i.e. 6.73, of total population as compared to the Terai and the Hills, which have 50.27 and 43 percent of the total population respectively (CBS, 2012). In general, we should expect people to move less into the mountainous regions and more into the

Terai regions because the rugged geography of the mountain region might make it difficult for individuals to get access to basic services.

Another control included in the model is the recentness of migration. It is because people who have migrated for two months or more in the last five years might demonstrate different patterns than those who have not migrated before. Similarly, the recentness of the migration might also influence whether people are likely to live near the facilities or not. Thus, I hypothesize that people who have left their home for more than two months or more in the last five years should be more likely to migrate.

To examine the impact of prior migration and the time taken to access facilities, I included interaction terms as a control. There are two interaction terms in the equation. One for the interaction between access to a health facility and recentness of migration, and the other for access to a primary school and recentness of migration. The interaction terms are denoted by W in the equation.

Perception is another important factor to consider because people might perceive the availability of same facilities differently depending on their needs and various other factors, which might affect the migration decisions. Moreover, distance from facilities might also influence the perception people have towards usage of that facility. I hypothesize that the more unsatisfactory this perception is, the more people are likely to migrate. The coefficients, a , b , c and d are the marginal effects at the mean of the independent variables. I used marginal effects because the coefficient obtained from the probit regression only gives us an idea about the change in z-score. Marginal effects on the other hand, describes us the percentage change in the probability of the dependent variable keeping the control variables fixed at the mean.

Results:

VARIABLES	(1)	(2)	(3)
	Migration	Migration	Migration
Time_HealthPost	-0.000590***	-0.000577***	0.000390
Time_School	(0.000108)	(8.92e-05)	(0.000628)
	-0.000400	-0.000354	-0.00233
Food_Consumption	(0.000302)	(0.000270)	(0.00202)
	0.00468***	0.00237***	0.00236***
Age(15-30)	(0.000553)	(0.000460)	(0.000459)
		0.275***	0.269***
Age(30+)		(0.00935)	(0.00914)
		0.412***	0.407***
Sex		(0.00837)	(0.00819)
		-0.307***	-0.308***
HH_Size		(0.00742)	(0.00725)
		-0.00255*	-0.00578***
Recentness		(0.00148)	(0.00143)
		-0.0136	-0.0296
Terai		(0.0144)	(0.0248)
			0.122***
Eastern			(0.00837)
			0.0818***
Central			(0.0151)
			0.0585***
Western			(0.0149)
			0.0756***
Mid-Western			(0.0151)
			-0.00702
Far-Western			(0.0155)
			0.108***
Perception_Health			(0.0175)
			0.00492
Perception_Education			(0.0103)
			-0.00516
Interaction_Health			(0.0103)
			-0.000218
Interaction_Education			(0.000320)
			0.00109
			(0.00102)
Observations	11,358	11,358	11,358

Table 1: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The interaction term relates Time_Health post with the Frequency.

The main hypothesis being tested in this analysis is whether or not access to basic services is related to people's migration decision. The results show that access to a health post is negatively correlated with people's decision to migrate when the geographical and administrative differences are not taken into account. A minute increase in the time taken to travel to the nearest health post is associated with 0.03 percentage point increase in the probability of migration, measured at 52.57 minutes. The result is statistically significant at 1% level. However, the result is not statistically significant when we control the influence of geographical and administrative regions in the country. Similarly, the relationship between people's migration decision and the access to a primary school is also statistically insignificant in the second case.

We found that people's socio-economic status is positively correlated with their decision to migrate. A thousand rupees increase in the consumption of food is associated with 0.2 percentage point increase in the probability of moving into a place, measured at 16.89 thousand rupees. The result is significant at 1% level.

Young people are more likely to migrate than children. People belonging to the age group of 15-30 years are 26.9 percentage point more likely to migrate than children. Similarly, population aged 30 years or higher are 40.7 percentage point more likely to migrate than children. Both results are measured at 28.19 years and are significant at 1% level. Similarly, being a male is associated with 30.8 percentage point decrease in the probability of moving into a place. The result is significant at 1% level.

Household size also exhibited negative relationship with the likelihood of rural migration. A unit increase the household size is associated with 0.6 percentage point decrease in the probability of rural in-migration, measured at 6.15 members. This result is significant at 1% level. However, the relationship between the recentness of migration and the likelihood of moving into a place in rural area was not statistically significant. However, the geographical and administrative region does seem to significantly influence people's decision to move to a place. The relationships between the perceptions of people towards the facilities they use and their migration decision was statistically insignificant.

Results for Regions

The correlations for the relationships between migration and living in different administrative regions are mixed. Living in Eastern region is associated with 8.2 percentage point increase in the probability of migration, whereas living in the Central region is associated with 5.9 percentage point increase in the probability of migration. Similarly, living in the Western and the Far-Western regions are associated with 7.6 and 10.1 percentage point increase in the probability of migration. All of these results are compared against the probability of migration in the Mountain region. These results are significant at 1% level.

In contrast, we found that the relationship between living in the Mid-Western region and the probability of migration is not statistically significant. This was not the case for geographical regions though we found that living in Terai is associated with 12.2 percentage point increase in the probability of migration. This result is significant at 1% level.

5. Findings and the CRSP

Two of the main arguments for establishing CRSP are that it is the poor people who migrate, and they migrate in search of access to basic services. The findings in this chapter suggest that these arguments are either not as strong as claimed in the CRSP or are contrary to the dynamics on ground. If we just look at people's migration decision and the availability of basic services at a place, we find that the relationship is statistically insignificant once we control for the variations in the geographical and administrative regions. This suggests that we cannot make a causal claim that people are primarily considering the availability of basic facilities when they decide to migrate. We can conclude that in the least, the arguments put forth in the CRSP need further examination before the policy is put into practice.

Another finding in the chapter that contrasted with the arguments in the CRSP is related to the socio-economic status of people. The policy paper claims that it is the low quality of life in rural Nepal that propels the rural out-migration. If this were true, then we should expect to find that people belonging to lower socio-economic strata should migrate more than those belonging to a higher socio-economic strata. However, we

find that people with higher socio-economic status, as measured by their expenditures on food consumption are more likely to migrate than those with lower socio-economic status. This means that the richer the people are in rural Nepal, the more likely they are to migrate.

We also identified few other factors that had major influence in people's migration decision. Sex, household size, and the region of residence have significant impact in people's migration decisions. This suggests that perhaps gender roles in Nepalese society plays a major impact in migration decision than the access to basic services. This is something worthwhile while making policies for resettlement. Unfortunately, the CRSP does not consider the role of gender and its impact on migration in its argument for compact settlements in rural Nepal.

Household size is another factor that the CRSP does not include in its discussion. The findings regarding the relationship between household size and an individual's migration decision contrasted with the hypothesis I presented earlier. The analysis found that people from larger households are less likely to migrate than people from smaller households. There are few reasons as to why this might be happening in Nepal. Members in large households might contribute more non-financially to the household than those who belong to a small household. For instance, an elder child in a large household might be expected to take care of his siblings. His likelihood to migrate, thus, reduces as the number of siblings increase because he needs to take care of them.

This finding might be explained with the new economics of labor migration theory. The theory states that households, and sometimes communities, use migration to mitigate risks, and maximize income and status (Massey, 1999). As the household size and gender roles are also shown to influence people's migration decision (Shrestha and Bhandari, 2007), it might be that the need for labor for agricultural purposes might hold people from larger family from migrating.

This might be problematic while establishing CRS in Nepal because CRS would require that people live near each other. For a larger household, this would either mean less space per household member or the need to switch to nuclear families, which is not the usual family structures in rural Nepal. As living in cramped spaces might mean unhygienic conditions for family members, it does not seem an attractive

option to reduce the per capita space available for living for an individual. The other option, which would entail having separate households is usually not practiced in rural Nepal. It is common for males to stay with their parents even after they are married. Children are generally expected to take care of their parents. Thus, asking people to live in separate households is not realistic in rural Nepal.

One possible argument against this could be that cultural norms are dynamic, i.e. they keep on evolving through complex mechanisms in society. If it benefits the society at large, then perhaps the government should intervene and redefine the cultural norms. In the case of CRS, the argument could be something that if people are going to have better quality of life at the end, perhaps the government should intervene and redefine cultural norms. While redefining cultural norms might not be problematic in itself, it is problematic to do so on the assumption that the people would want the type of norms imposed by the government bureaucrats on multiple accounts.

The evidence suggests that the major factors that influence people's decision to migrate are not as suggested in the CRSP. This leads us to infer that the diagnosis of the dynamics by the policymakers is not always representative of the situations on ground. I used the term "representative" rather than "accurate" here because given the diversity of Nepal, it might be difficult to form an accurate picture of what is happening in each nooks and corners of the country. Changing cultural norms for the sake of productivity if done abruptly can be counter-productive as we have seen in the case of disasters related to compact settlements in Tanzania, which will be discussed in another chapter later on.

This brings us to the findings from the analysis that contrasts with the claims in the CRSP. We find that in Nepal the marginal effects on the relationship between living in different regions and the probability of migration are significant. For instance, those living in Terai are more likely to have migrated there than those living in the hills. In other words, those living in the mountains are far less likely to have migrated there from other districts in the Mountain or from Hills, and Terai.

For instance, to make the argument for CRS more concrete, one can point out the enrollment status in the schools in different regions. The left-hand chart in Figure 2 shows us that a

primary school in the Terai has more than double the number of students than a school in the Mountain. One might argue that given the scattered settlements in the Mountain and fewer students enrollment, it makes sense to move forward with the compact settlements that ensures provision of facilities in a cost-

effective way. In the right-hand chart in Fig. 2, we can observe that the Terai and the Hills have four times as many primary schools per square kilometer than the Mountain region. Thus, the student enrollment and the density of schools do seem to point towards both the lack of facility and less use of them in rural Mountain areas.

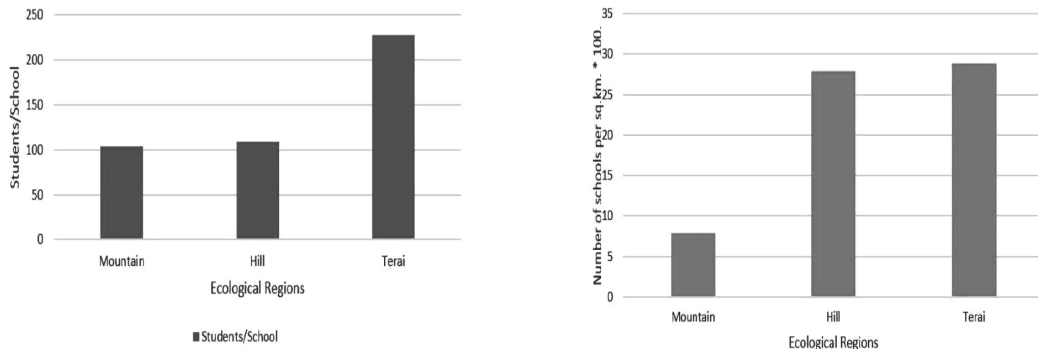


Fig 2: Data from CBS(2012) and DoE(2012).

However, this should not lead us to claim that the people would migrate to the Mountain region if facilities are established. Two findings from our analysis support this claim. First, we found that an average person in Nepal is more likely to move into a district in Terai region compared to the Mountains and Hills. Moreover, we also found that the time taken to facilities is not a significant predictor of people's migration decisions. Thus, claiming that having more schools would lead to more enrollment and more migration is unfounded at best.

Another aspect of the results related to the compact settlements is the perception of the existing facilities. We found that perception of the adequacy of basic service facilities is not a crucial factor in influencing people's migration decision. For instance, it might be because people in rural Nepal look into other factors more than the availability of basic services. As majority of the people in the rural places are farmers, people might look at the irrigation facilities and the productivity of the land more while migrating. Similarly, social ties might also play a role in the migration, which we could not measure through the NLSS data.

It could also be that people might not be expecting too much out of basic facilities such

as a health post or a primary school given the sub-standard quality of services these facilities provide. Thus people with low expectations might be relatively content with the facilities they get as they might not have had access to better basic facilities to compare their experiences with. If this was the case, the perception of basic service facilities would not influence people's migration decision significantly. This is important to note because we would expect that more discontent people are with the services, the more likely they would seek other services keeping all other things constant.

One other reason could be that it is the poor people who are usually discontent with the services that are available to them. Poor people have limited means to provide themselves with resources as people from higher socio-economic status do. As a result, poor people might be limited to using facilities that have minimal costs. These kinds of facilities usually tend to be public facilities in Nepal as they are subsidized by the government. The rich people on the other hand, might be using private health service facilities. While the poor are discontent, they are left with few options whereas the rich can perhaps afford facilities that cost more. This aligns with the finding that the poor people are also less likely

to migrate than the rich people. If this were the case, the important driver for migration would not be whether people live closer to facilities but if they can use the type of facilities they need, which depends on their socio-economic status.

6. Conclusion

To conclude, we analyzed migration patterns in different regions of Nepal to test the claims in the CRSP. Understanding the migration patterns also helped us identify the prominent factors that result in migration. As CRS would mean resettlement of people, identifying these factors would help us better design effective interventions.

We noted that distance to services does not significantly impact migration decision of people. We also found that people from lower socio-economic status are less likely to migrate in Nepal than people from higher socio-economic status. The latter finding contrasts with the arguments for CRS in Nepal. We also observed that age, sex, household size and the regions people live in are stronger predictors of people's migration decision than access to facilities.

Sex was one of the most prominent factors that determined migration behavior. Being a male is associated with around 31 percentage point increase in the probability of migration than being a female when controlled for distance to a primary school and other factors. Similarly, we noted that generally younger people between the age bracket of 15 and 30 migrate more in rural Nepal. Finally, the analysis suggested that the perception of facilities people use does not have a statistically significant impact in people's migration decision.

These findings suggest that rather than focusing on providing more services, it might be more cost effective to focus on improving the quality of services provided, reducing gender gap and providing economic opportunities for younger people if the state is concerned with improving the quality of life for Nepali people. This is because we saw that the factors such as age and sex are more important predictors than the distance people need to travel to get access to services when people choose whether or not to migrate.

Similarly, the large differences in the migration patterns in different regions suggest that perhaps development activities in future be conducted on a more proportional level to include different parts of the country. Having CRS would mean concentrating development activities in a small locality neglecting other areas because CRS are by their nature resource intensive. It would be a mighty task, if not impossible and counterintuitive, for a developing country like Nepal to spend its resources both on developing CRS and helping people in marginalized places get access to basic services at the same time while also addressing the issues relating to gender inequality and youth unemployment.

For now, it suffices to suggest that CRS might not be the ultimate solution as claimed in the CRS policy paper to improve the low quality of life for the majority of the people in rural Nepal. Focusing on issues relating to quality of public services, gender inequality, lack of opportunities for youth and regional disparities in development activities will perhaps be more cost effective for the state than venture out in developing CRS, which might use valuable state resources to perpetuate the cycle of low quality of life even more profoundly.

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Unlocking the Relationship between Entrepreneurship and Socioeconomic Integration

A study based on Nepali entrepreneurs in Lisbon, Portugal*

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Abstract

This research project uses immigrant entrepreneur's perspectives on how entrepreneurship has influenced or facilitated in integration processes in host country. The study is based on Nepali immigrants engaged in entrepreneurship in Lisbon. Semi structured interview was used to interpret the narratives of the conversation with the respondents, which is coded into themes using thematic analysis. Twelve Nepali entrepreneurs were interviewed who owned small or medium scale business ventures in Lisbon. Being Nepali as well as migrant here in Portugal, enabled the researcher to reflect, analyse and interpret insider perspective for the study which controls the possible limitations of understanding the social milieu of the respondents during the study process. Social capital theory was used to analyse immigration, and entrepreneurship start-ups in host country. As a whole, it has been found out that, the entrepreneurial ventures helps Nepali immigrants to integrate in the host societies by facilitating them in easy adjustment process from the period of arrival until they settle down. The implications of this research are useful for local authorities in host country to further strengthen bonds between immigrants and host society through entrepreneurship. The social capital that is evident in community can be strength for authorities to support in establishing entrepreneurial ventures for Nepali immigrants.

Keywords: Immigrants, Entrepreneurship, Socioeconomic Integration, Nepali Entrepreneurs, Social Capital

1. Introduction

Immigrants' population has been rising in developed countries and Portugal is not spared from the trend. Persistent rising trend of immigrants to developed countries has been one of the major concerns for integration in host countries (Abranches & Di Sciullo et al, 2008). According to International Organization for Migration (IOM), one fifth (22%) of the total population in Portugal are immigrants (Oliveira, 2010; IOM, 2015). Emigration of Portuguese is considered as one of the major factors driving the immigration rate in the country (Justino, 2016).

Rise in immigrants' population poses opportunities as well as challenges to the host countries. Integration of new-comers is crucial for efficient socio-economic development of

the host country (Goodman, 2010). Although Portugal ranks second in the migrant integration policy index (MIPEX) indicator after Sweden (MIPEX, 2015) there is no formalized monitoring system in Portugal to assess integration of immigrants. There are several discourses of integration strategies and measuring integration of immigrants in host society. Some considers integration as process of socialization in the host society (Barou, 2014), other defines integration process as engaging in host country's labour market (Entzinger & Biezeveld, 2003; Ladygina & Kharchuk, 2008; Ager & Strang, 2008; Goodman & Wright, 2015; Maxwell, 2017). Some emphasizes on learning language as major component in integration (Delander et al., 2005). Integration is necessary for immigrants as well

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as host society. Integrating immigrants helps to avoid stigmatization of migrants, prevent negative feelings in host society (Entzinger & Biezeveld, 2003). Integration is crucial in overcoming present rising issue of religious conflicts attacks and several other conflicting social issues in the world (Wiesbrock, 2011).

In recent days, entrepreneurship has become popular among immigrants. Immigrants are more probable to initiate new business in the host nation than the native population (Desiderio & Mestres-Domènech, 2011; Blume & Ejrnæs et. al, 2009; Hou & Wang, 2011; Kerr & Kerr, 2016; Hou and Wang 2011). More than one fourth of the immigrants are self-employed in Portugal, Ireland, and Spain (Van Tubergen, 2005).

There are considerable number of Nepali immigrants in Portugal (Dahal, 2016; Oliveira & Gmes, 2017) and many of them are engaged in entrepreneurship, such as hotels, restaurants, grocery shops and other service-oriented business. There is dearth of literatures related to Nepali immigrants and their integration in the foreign countries. No single study so far has been done on Nepalese immigrants engaged in entrepreneurial activity and their process of integration within Portuguese society in Lisbon. Therefore, the present study aims to find out the socio-economic integration process of Nepali entrepreneurs in Lisbon, Portugal.

2. Theoretical framework: Social capital theory

Putnam's social capital theory constructed by bonds, trusts, reciprocity in society is used as theoretical lens to analyse three dynamics including; immigration process, entrepreneurship establishment and integration in host society through social capital in this study. Social capital is one of the old concept that has been influential since 1990's. Putnam, Evans and Bourdieu during 90's are pioneers in explaining social capital theory. Several interdisciplinary fields ranging from sociology, economics, political science and education has been extensively using it in explaining their outcomes (Bick, 2010). Putnam (2001) states networks, and associated norms of reciprocity as central ideas in social capital. The value is generated within the circle for the people in the circle. Social capital is one kind of unique bond that is generated within alike gender, ethnicity, religious groups and so on within specific area (Bick, 2010). These networks help in cooperation and coordination for mutual benefit which helps in

linking and connecting with the society that they are living (Bick, 2010; Jung, 2017). "Social capital refers to the norms and networks that enables people to act collectively" (Woolcock & Narayan, 2000: 3). Social capital is characterized by trust, tolerance and reciprocity (Coleman, 1988) and this benefits through network. This further facilitates in creation of human capital within the network that people possesses (Coleman, 1988). Similarly, Conduluci, (2014) states social capital as the 'social glue' that holds the society together. Social capital is an intangible asset that emerge from social interactions, social networks, norms, trusts, good will and respects (Conduluci, 2014). This also acts as instrumental role in socio economic adaptation processes in the host society (Marger, 2001). This helps each other to confront social issues in society such as poverty, crime, mitigating disasters and resolve disputes (Cheung & Kam, 2010). Social capital has power to bring the cohesion from the weaker section of society as well, which becomes strength within the community (Granovetter, 1998). Hence linking these micro levels with the macro section of society is widely used theoretical framework in today's social sciences.

3. Research design

This is a qualitative study and it brings out informed perspective on how entrepreneurship facilitates in socioeconomic integration process for immigrants. The main motive to use qualitative method in this study is for gaining in-depth information in a non-directed way which is more open ended and contains more reflective based life experiences of individuals (Shaw & Gould, 2001; Edwards & Holland, 2013). Engel & Schutt (2013) states the use of qualitative research is to explore, describe and evaluate through the participants' social world. This approach is useful in understanding the lives of participants, and aspects of their experiences through an interactive process (Edwards & Holland, 2013). This approach enables researchers to know their experiences and how they interpret their social life in their own environment (Edwards & Holland, 2013). The researchers interpret the findings by placing themselves in the researched participants' shoes (Denzin & Lincoln, 2005). Qualitative research further enables researchers to be sensitive according to the contextual factors by understanding the symbolic dimension in the research process (Bryman & Bryman et al, 2012).

4. Participants

Total of 12 participants were selected who were originally from Nepal and had started enterprise on their own. To bring out the inclusive ideas, different sectors of business were selected ranging from restaurants, hotels, groceries, handicraft shops and saloon. A benchmark was set to select the participants for instance, one must have a legal status here in Portugal, have started a business and tentatively operated business lesser than ten years. Setting benchmark would avoid the biases that could arise in selecting participants (Biernacki & Waldorf, 1981). Selecting participants having their business running for less than ten years was to get fresh experience of immigrant entrepreneurs and to find out how it helps in initial phases of integration process in host society. Snowball approach was used to find out the entrepreneurs in Lisbon to collect their views and experiences. This approach is especially applicable for the hidden population in a large group through connections, social networks between each other (Browne, 2005). The interview was carried out using saturation strategy; conducted an interview until the point where additional interview was no longer required as no new information are received from the respondent (Guest & Bunce et al., 2006; Walker, 2012). Having relatively lesser amount of sample size enabled the researcher to analyse interview in in-depth way (Maxwell, 2008). This also preserves the individuality of each in their analyses (Maxwell, 2008). This further enables the researcher to understand how events, actions and meanings are shaped by their individual unique experience in their circumstances.

First field visit was conducted to see, observe, and meet Nepali entrepreneurs at their own business setting. Semi structured interview was conducted using native language; Nepali as a means of communication between participant and interviewer after preparation of interview guide which is attached in appendix section. Use of semi structured interview is “flexible and powerful tool” that captures the voices and meaning of their experience (Rabionet, 2011). Open-ended questions enabled the participants to express their own opinion and further give an opportunity for the researcher to probe and go in-depth based on the research objective (DiCicco-Bloom & Crabtree, 2006). This method of data collection further considers interviewees as experts in their own. It enables to understand

the events, situations and actions participants are involved in how it influences their behaviour (Maxwell, 2008). Semi structured interview further enables to co-create meanings and reconstructing perception and events of experience (DiCicco-Bloom & Crabtree, 2006).

Thematic analysis was used as one way of identifying, analysing and reporting themes from the coded themes based on information from participants (Braun & Clarke, 2006). Thematic analysis is a step by step and rigorous process that is trustworthy and provides insightful meaning with the thick description of analysis of data (Braun & Clarke, 2006). The recorded interview is transcribed and coded into specific themes based on dimension of analysis. Use of semi structured interview in thematic analysis helped the researcher to analyse and find out the reality beyond lived experiences and get deeper insights.

5. Findings and discussion

Based on field visit, it was found that, there is an international market representing different countries in specific place; Martim Monez area in Lisbon. The participants shared their experiences of establishing their business ventures nearby their community within specified area which is particularly crowded by immigrants. Every participant had varied opinions of engaging in entrepreneurship. Some studies reveal, the reason for immigrants engaging in entrepreneurship being children and their intergenerational mobility (Raijman & Tienda, 2000; Kloosterman, 2010; Skandalis & Ghazzawi, 2014) which was reflected in Nepali community as well. However, there are several other pushing factors influencing immigrants into entrepreneurship.

The themes generated from twelve participants revealed that, engaging in entrepreneurship was to overcome oppression in the previous job. The terms such as low payment, work pressure, work timing, unfriendly work environment and unfair treatment from the employers in the previous work place made them start their own business. This notion is supported by several scholars where immigrant appear to engage in self-employment to overcome the challenges of underpayment, racial discrimination in the labour market and exclusion (see, Blancflower, 2000; Constant & Shachmurove et.al. 2007; Mickiewicz & Hart, 2017; Skandalis & Ghazzawi,

2014). The participant reflected the experience of working under someone's restaurant and did not want his staffs to feel the same. Use of terms like oppression, challenges, exploitation, workloads he had to undergo while working in others restaurant illustrates several difficulties faced by the respondents.

Based on reflections from participants, a person with strong economic status is more probable to participate in social events, gatherings, meetings and other ceremonies, which enables them to widen their network with the native population in a foreign society. Strong economic situation of immigrants helps them to enjoy freedom, increase their participation in social activities, which eventually supports them to feel home in the host nation (Ladygina & Kharchuk, 2008). Self-employment helps in reducing poverty, increasing living standard and enhancing social well-being, which ultimately helps them in integrating into the host society (Grosu, 2015 and Sahin & Nijkamp, 2007). This makes an individual independent of several day to day activities, which eventually assist individuals to engage and participate in the host society.

Nepali entrepreneurs seem to use their business as a means to enter into the society making a way to integrate in society through networks and interactions. It helped in interaction and exchange of knowledge, cuisine, and information help native population to gain from people with different cultural backgrounds. Such interaction and exchange activities help immigrant to be part of the native/host society (Eraydin & Tasan-Kok et al., 2010). Entrepreneurship activity assist immigrants to cross cuts the structural barriers, limited employment choices and exclusionary treatment in the labour market and support them to be accepted in the host society (Constant et al., 2007).

Having their own start-ups became a pathway for Nepali immigrants to familiarise with each other help build trust with the locals. According to Constant and Colleague (2007), "Self-employment is powerful instrument to integrate immigrants economically into the host country". Self-employment has been a way to adjust in society. They state this strategies as an antidote to unemployment by creating jobs. Entrepreneurial ventures promote intercultural competencies, active interaction with people of different cultures which plays

crucial role in socialization in society (Dimitra-Evangelia, 2016).

Engaging in entrepreneurship is not just about starting a business and bringing new product to the market but is also to liberate oneself for freedom and autonomy (Verduijn & Dey, 2014; Jennings & Jennings et.al, 2016). The freedom that comes with entrepreneurship, helped respondents to live independent life without any external support from the government in the host country. Several scholars support the notion that entrepreneurship liberates oneself from social, technological or other institutional constraints (Verduijn & Dey, 2014; Jennings & Jennings et.al, 2016). This is considered integration as it helps to gain equal status as natives in the society where they live (Bartkeviciene & Raudeliunaite, 2013). However, the illustrated ideas can be criticised as well depending on the time an entrepreneur is engaged in their business. Some may be profit oriented guided by monetary value rather than other elements.

6. Perspectives on integration through entrepreneurship

Migrants engaged in entrepreneurship contributes to the economy as entrepreneur as well as an employee (Desiderio & Mestres-Domènech, 2011). This is one form of integration in the host society. Entrepreneurs not only employs themselves but also create employment opportunities for others (Entzinger & Biezeveld, 2003; Ladygina & Kharchuk, 2008; Euro stats, 2011; MIPEX, 2015).

Entrepreneurs or the business owners requires to communicate, negotiate, bargain for their product with wholesalers, retailers, customers in the market. Findings illustrates that participants were reinforced to learn host country language, which is one major indicator of integration for immigrant in the host society (Dimitra-Evangelia, 2016; Remennick, 2004; Dimitra-Evangelia, 2016). Numena (2008) illustrates the criteria for being integrated in society through family reunion in host country, where starting business eases this process in host society. Allowing immigrants to unite with their family connects immigrants with different individual, social and cultural aspects of life. This created sense of belonging in the society where they are living. Respondents further shared their experience of how owing a business facilitated in broadening social

network in a community where they lived. Although, some participants shared their experience of excessive time spent on their business, networking was limited within their own community groups and not having time to socialise and interact in society, most of them shared their experience of positive impact of entrepreneurship that helped in integration process in society. Some authors support this notion that business and networking could limit the exposure of newly arrived individuals to integrate in the host society which may not necessarily integrate him in the host society (Perkins & Hughey et al., 2002; Leonard, 2004; Martinovic & Van Tubergen et al, 2009). Rather it might isolate and marginalise from the main stream society as the entire process of arrival to business start-up is dependent on fellow nationality. Inequality may exist within the community itself which might also isolate the individual with limited networking (Leonard, 2004; Farrell, 2007). This can rather be constraint in itself for individual's action and choices (Leonard, 2004). Farrell (2007) states that social capital may not necessarily be always positive which sometimes can be guided by self-interest leading to oppression.

7. Business venues as a space for 'informal organizations and a place to socialise

Business venues of Nepali entrepreneurs is used as a space for meeting, socialisation and discussion among fellow nationality. It was found that, these informal organizations have been providing free language classes and job training as per the demand of the labour market in Lisbon to the Nepali citizens. The free training session enhanced the capability of Nepali immigrants in host society. This social capital benefitted individuals by increasing their possibilities to find jobs in the labour market especially, for those who cannot start small and medium scale firms on their own (Sanders & Nee et al, 2002). Furthermore, entrepreneurs were found providing job and other logistics information like official registration process, locations etc. for the newly arrived immigrants. Participants shared their business venue as a place to meet, gather, socialize and share their stories of joys and sorrows. This plays significant role in enriching the affective commitment within the nationality and the Nepali community.

8. Social capital, entrepreneurship and integration

Despite being far away from home country, Nepali immigrants find someone to support especially in their initial days of arrival through family network, relatives, friends, same ethnic groups. The trusts, bonds, connections and reciprocity between each other enables to overcome most of the challenges that might come across in foreign countries (Sanders & Nee et.al, 2002; Potocky-Tripodi, 2004; Hernández-Plaza & Alosó-Morillejo et al, 2006; Eraydin & Taskan-Kok et al., 2010). Hence, the migrants who get the support from the established immigrants face less challenges in their process of adjustment in society. These available social networks help to overcome less explored challenges of entrepreneurship and unanticipated risks that might come across (Levitte, 2004). The bonding in the community bridge and link the natives in host society facilitating the process of integration.

Nepali immigrants who have the experience of operating business act as counsellor and mentor for other fellow nationality willing to start a venture. These informal networks and supports among themselves helps to integrate immigrants in host society. According to Farrell (2007) social network and society plays major role in connecting beyond the community and providing platform to interact, participate and mix in the host society which is a major indication of integration in the host society. Furthermore, linking and bonding through informal networks help in confronting several problems and issues that comes across. Hence, it is necessary to establish the strong bond that is present within the community to the outer area of their community i.e. native inhabitants.

Summing up these findings, social capital and social network available in the community supported immigrants, since their arrival to establishment of their business including adjustment, fulfilling official procedures, finding jobs, residence and business registration in the host society. The business they owned further facilitated in integration process. Moreover, entrepreneurship facilitating family reunion, acquisition of language, broadening social networks, cultural exchange via business spaces sharing gradually helped in deeper localization process in the host society. The business venues worked as informal institutions such as parcel office, hostel, focal place to

contact for fellow Nepali nationality and place to organize cultural events.

9. Implication and recommendation for practice

Immigrants engaging in entrepreneurial ventures not only strengthens the economic aspect but also helps in deeper localizations through ethnic enclaves which helps immigrants to fit in local environment (Zhou & Liu, 2015). Hence this is one of the alternative path for integration of immigrants in host societies (Zhou & Liu, 2015; Brozozowski, 2017; Batsaikhan & Darvas et al, 2018).

The bonding, trusts, reciprocity between Nepali immigrants is found to be strong supporting each other in host society. The bonding among immigrants turns into tangible resources which helped poor communities to uplift overcoming limited resources they had in the community (Levitte, 2004). Embracing social capital could be one of the tool for professionals, agencies working with immigrants by utilizing the relationships of trusts, mutual caring and mutual support to each other (Nieman, 2014).

Proper coordination and collaboration between these informal networks of immigrants and local municipalities can be helpful in making integration plans. Proper support system for immigrants and their business brings economies and societies together (Thornton & Ribeiro-Soriano et al, 2011). This could help them to know each other and can further seek support when needed. Local authorities can lobby with different actors and policy makers to design policies that favours immigrants and facilitate them to integrate in host society. Developing policy to support through their own network can be another recommendation for professionals working with immigrants to utilise the bonding available in the community.

Entrepreneurs can further be educated on local procedures, culture, markets etc. This can be done through community-based workshops where there is collaboration between internal and

external actors. Further programs like setting up mentors as mentioned by Evansluong (2016) for the immigrants in the host country could link each other and provide a platform to learn from each other in the host society. Business support programs to raise capital, understanding bureaucracy of the governmental process, establishing contacts, providing training are some forms of support that could be provided to immigrants (Riddle & Hrivnak et al, 2010).

10. Conclusion and further research

In a nut shell, entrepreneurship enables to make difference in societal perception towards social and cultural attitudes of immigrants like recognition, respect and friendly attitudes. These are also part of integration process in the host society. It is also necessary to first understand that immigrants are not super entrepreneurs (Naudé & Siegel et al, 2017) but the ones who are engaged in entrepreneurship like Nepali immigrants in Portugal due to different circumstances or situations facilitated them in integration process in society. This research does not intend to exacerbate every immigrant to be entrepreneur but to develop policies for immigrants who are willing to do business on their own and train them to be entrepreneur.

However, one needs to be cautious about generalizing the findings with the overall immigrant populations as this could depends on the types of immigrant group (Tegene, 2015). Putnam's concept of social capital; where informal bonding and networking is present in certain immigrant groups not necessarily present in all immigrant groups. Entrepreneurship can be a comprehensive model to integrate immigrants in host society and this can be innovative strategy for local authorities to solve issues of social exclusion. Researcher would further recommend carrying out research on comparative analysis of informal supports and networking's among immigrants from different countries to generalise recommendation.

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An Analytical Model for Strategic Promotion of Growth-Oriented Women Entrepreneurship in Rural Nepal

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Abstract

Entrepreneurship promotion initiatives in Nepal have paid limited emphasis on helping the growth-oriented micro-enterprises transform into small enterprises. There is also a lack of knowledge and effort in customization of entrepreneurship promotion strategy to meet specific needs of entrepreneurs, particularly for women. This formative study seeks to explore such gaps and also propose an ecological framework to help future programs and policies to better address the issues identified. The study conducted interviews and enterprise observations of selected entrepreneurs of an enterprise accelerator program. The findings inform the development of a holistic framework for analyzing and designing growth promotion strategies across the dimensions of four Es: Entrepreneur, Enterprise, Ecosystem, and Economy. The study underlines the importance of forming a grounded understanding of key dimensions across the 4 Es while creating entrepreneurship promotion strategy.

Keywords: Entrepreneurship, MSMEs, Enterprise, Ecosystem, Economy, Rural Entrepreneurship

1. Introduction

Entrepreneurship plays an important role in poverty reduction and economic development. Existing theoretical perspectives and empirical evidence point to three big ideas. First, for structural economic transformation from a traditional to a modern sector to occur, 'entrepreneurial ability' is a critical determinant for enterprise promotion and growth of the economy (Murphy et al., 1991; Nelson and Pack, 1999; Michelacci, 2003; Gries-Naude, 2010; Hasumann and Rodrik, 2003). As such, the interventions must go beyond traditional approaches of improving skills and education to developing new strategies for kindling abilities for innovation. Second, the government's role in addressing market failures is important for enabling entrepreneurship activities and growth, particularly in assessing if existing market-competition or regulatory policies erode the 'innovation space' for entrepreneurial growth (Hasumann and Rodrik, 2003; Acs and Naude, 2013). Third, an entrepreneurial pursuit itself is important for expanding one's capabilities, increasing personal satisfaction and happiness,

and overcoming ecological and socio-cultural barriers for social development (Sen, 2000). Although the three big ideas provide a common conceptual foundation, it is essential to critically examine specific contextual variables at the individual level and within a household, society, and nation.

In Nepal, promotion of entrepreneurship is seen as a critical tool for improving livelihoods and fostering economic growth. With one-quarter of its population living below the poverty line and GNI per capita at only 790 USD (World Bank), the Government of Nepal (GoN) has identified entrepreneurship as an important tool for poverty reduction and accelerating inclusive and job-led economic growth. For instance, the five-year development plans have continually emphasized entrepreneurship promotion and have implemented a range of national-level programs: Micro-Enterprise Development Program (MEDEP), Poverty Alleviation Fund (PAF), Youth and Small Entrepreneur Self-Employment Fund (YSEF) and so on. While most of the government initiatives have poverty reduction as the primary agenda with focus on creating and promoting micro-entrepreneurs,

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many non-government sector initiatives (Rockstart, Antarprerana, Business Oxygen, etc.) have focused on supporting small and medium entrepreneurs. However, there are two fundamental gaps in the strategies that must be addressed.

Limited strategic focus on ‘graduation out of poverty’: The initiatives in the Micro, Small, and Medium Enterprise (MSME) landscape have either focused on improving lives of the very poor at the scale of micro-enterprises, or in incubating and improving businesses at the scale of small and medium enterprises (SMEs). However, there is limited understanding and emphasis on helping micro-enterprises, usually operated by the poor with small economic yield, transform into growth-oriented small enterprises. Existing livelihood strategies often result in making only marginal improvements in lives, rather than becoming a transformative force for pulling people out of poverty and into sustainable livelihoods and generating wider positive externalities through innovation, market efficiency and job creation (Hashemi and Montesquiou, 2016). The entrepreneurship promotion strategies, therefore, must think beyond income generation and necessity enterprising activities, which are undeniably a starting point, and instead develop effective strategies that enable growth-oriented micro-enterprises graduate into more productive small enterprises.

Limited customization of entrepreneurship promotion strategy to meet specific needs of women entrepreneurs: The second gap is the limited effort in customizing entrepreneurship promotion strategies for women. While most initiatives have substantial inclusion of women, along with other marginalized groups, the strategies are often universal and do not cater to unique contextual factors under which women operate their enterprises (Sattar 2011, p63), including their gendered roles (Parasuraman; 2001), risk-taking behavior (Goffee and Scase, 1985; Greene 1999), integration within the social system (Shapero 1982), and the types of supportive policy and structures needed (Mayoux 2003).

To address these gaps, Daayitwa¹ has been experimenting with an innovative community-driven model of identifying, supporting, and promoting growth-oriented women entrepreneurs. The lessons from first phase of the Rural Enterprise Accelerator Program (REAP), which were open to both women and

men, showed the need for greater customization of interventions to women entrepreneurs. The main reason behind this finding was that women entrepreneurs faced unique set of constraints in their household and society compared to men, who were deemed to be competing in the District Enterprise Challenge (DEC) from a different playing field. In addition, the constraints also prevented women from accessing support services to the same extent as men. Many women struggle to increase their visibility as entrepreneurs and grow their enterprises. This unequal growth and visibility between men and women is a problem of national and international concern because inclusive growth is a key stepping stone toward overall poverty reduction and socio-economic prosperity of Nepal. With this view, a new program was designed catered to the needs of the women: Women Rural Enterprise Acceleration Program (WREAP). The program was implemented in the Palpa district of western Nepal.

2. Methodology

2.1 Rationale

The strategic gaps identified in the previous section have not been studied well in the context of Nepal’s MSME sector. There is a lack of conceptual underpinning to explore the nature of these gaps and their implications on project design, implementation and impact. A grounded approach in investigating these issues helps develop critical insights into what drives micro-entrepreneurs, especially the growth-oriented, to operate, persevere through, and scale up their enterprises; how transformation pathways may manifest; and what strategic options must be considered by policy planners and project designers to catalyze the transformative process. The study is designed to explore such questions with top growth-oriented women entrepreneurs, selected through a district-wide competition organized by Rural Enterprise Acceleration Program (REAP) of Daayitwa. This study specifically sought to take a formative approach, using qualitative methods, to help develop a strategic framework for promoting growth-oriented women entrepreneurs. The

¹ Daayitwa, a non-profit organization based in Nepal, works in entrepreneurship promotion. www.daayitwa.org

study specifically seeks to answer the following key questions in the process:

- What are the key qualitative dimensions and features in an enterprising ecosystem of growth-oriented women entrepreneurs?
- What aspirations drive women entrepreneurship?
- What personality/traits are most common among highly-driven women entrepreneurs?
- What are the key economic, financial, behavioral, cultural challenges and difficulties affecting women entrepreneurs in the district of Palpa?
- How are women situated in enterprising ecosystem of Palpa, particularly in the context of (a) access to gender-sensitive financial services, (b) access to gender-sensitive business development services, (c) access to markets and technology and (d) representation of women entrepreneurs and participation in policy dialogue?
- What are existing resources and actors that play a role in addressing key challenges and difficulties affecting women entrepreneurs in Palpa?
- How are women entrepreneurs' challenges and difficulties similar to and different from those of men entrepreneurs?
- What is a common pathway in growth trajectory, particularly in starting from low-scale micro-entrepreneurship?
- What strategic opportunities are present in promoting growth-oriented women entrepreneurs?
- What would a strategic framework look like that helps program and policy planners devise effective strategies for promoting growth-oriented women entrepreneurs?

2.2 Study Design

The study employs a qualitative research method to explore aspirations, experiences, and needs of women growth-oriented entrepreneurs selected through the rigorous process of District Enterprise Challenge (DEC) as part of the implementation of WREAP. The ecological model is adapted based on the Daayitwa's "4Es" framework for strategizing and planning interventions across the enterprising ecosystem, namely (a) entrepreneur, (b) her enterprise, (c) the ecosystem consisting of the value-chain and other market actors, and (d) the economy, i.e. the macro-economy, geo-political actors and other national and international factors.

The primary data collection involved using research guide to interview entrepreneurs and observe their enterprise and business processes. Observation notes and transcripts were produced from this stage for analysis. Embedded research was conducted with the top three entrepreneurs from previous REAP programs to more closely understand the business processes and more sensitive factors, which might not come out through standard methods of inquiry. The purposive sampling allowed us to select the following participants:

- Seven growth-oriented women entrepreneurs who were selected as top 10 women entrepreneurs by the jury of experts in WREAP program
- Seven growth-oriented women entrepreneurs who were selected as top 20 but were not selected as Top 10 by the jury of experts in WREAP program
- Three growth-oriented men entrepreneurs who were selected as top 3 by the jury of experts in a previous REAP program

The characteristics of sampled participants is presented in the chart below:

Characteristics		WREAP All (Top 40)	WREAP Top 20 (Excl. Top 10)		WREAP Top 10		Total Sampled
			Total	Sample	Total	Sample	
Overall		40	10	7 (70%)	10	7 (70%)	14
Enterprise Category	Agriculture	14	4	2 (50%)	5	5 (100%)	7
	Goods & Handicrafts	4	2	2 (100%)	2	1 (50%)	3
	Livestock	20	4	3 (75%)	2	1 (50%)	4
	Services	2	0	0	1	0 (0%)	0

2.3 Limitations

Identification of growth-oriented entrepreneurs for the study sample would have been a tremendous challenge had it not been for the WREAP program (and previous REAP programs), which had done so already through a rigorous process incorporated in the District Enterprise Challenge (DEC). Hence, the qualitative study was easier to conduct, and the sampling technique only required picking entrepreneurs to represent key differences, i.e. whether participants were selected in the top 10 or not, the type of enterprise (i.e. agriculture, goods, livestock or services), and whether they were male or female (by comparing with men entrepreneurs from previous REAP program). Because growth-oriented entrepreneurs are known to be in low number in a district, it is fair to assume that DEC was successfully able to identify all, if not most, of the growth-oriented entrepreneurs in the district, and the representative sampling done for the study is not sufficient to make population-wide conclusions. Nonetheless, it is likely that some growth-oriented entrepreneurs may not have been captured through the DEC. Aside from the sampling-related considerations, given the qualitative and interpersonal approach to data collection, some information may only be partially accurate. Some measures were taken with field researchers to build confidence with respondents, especially in asking for sensitive information such as enterprise strategies, financial management, and personal challenges in the household.

3. Results

3.1 Promoter and inhibitors of women entrepreneurs' growth-orientation

Self-perception and confidence of women entrepreneurs' own status in their household and their ability to do "gendered" physical tasks can diminish their conviction for growth. Vocational or technical knowledge seems to boost confidence and capability, even in absence of adequate formal education. Ability to manage time between enterprise work and other responsibilities in household and/or society can be restrictive. Interest in pursuing leadership roles in the community-based committees or cooperatives is high among top growth-oriented entrepreneurs. The family may be supportive, unsupportive or

restrictive in women's entrepreneurial pursuits. Members of the society, such as other women in informal circle, neighbors, and community may dismiss or discourage the experimentation with entrepreneurship.

3.2 Importance of business and management skills for enterprise growth

A systematic approach in strategy and planning is largely missing in most microenterprises. Human resource for labor intensive agriculture and livestock-based enterprises is scarce due to increasing out-migration. Financial literacy and management skills are highly valued since most enterprises do not have a functional record-keeping system or practice. Enterprises that can pose negative consequences in the environment (such as farms that use pesticides) require specialized management skills and environmental safeguarding knowledge. Technical capability needs can vary by the sector, such as agriculture, livestock, goods or services. Primary sources of financial resources are local cooperatives or savings groups which make access to small loans only a minor issue. Enterprises established in areas that lack necessary ecological resources, such as drying water sources for irrigation, face systemic constraints in growth.

3.3 Efficient interfaces with ecosystem actors for nurturing growth

The ecosystems, under which the entrepreneurs and enterprises operate, have inefficiencies and constraints along the value chains and business environment. Some ecosystems require specific services, such as market price information or monitoring demand and supply fluctuations. One major challenge encountered by some ecosystems is harmonizing competition and collaboration in horizontal linkages. The growth-oriented entrepreneurs not only value constructive competition to improve productivity and give room for innovation, but also need collaborative platforms and arrangements for collective bargaining, product marketing, and streamlining vertical linkages for reducing marginal costs and enhancing value-chain efficiencies. In addition, there is a need for leveraging the expertise of academia, research institutions, technology service providers, and

more experienced entrepreneurs for efficient use of resource and knowledge optimization in the ecosystem.

3.4 Enabling macro-economic and regulatory environment for enterprise growth

Due to top-down approach to policy making, entrepreneurs and enterprises have difficulty in influencing the policy-level factors, a strong mediatory role from the system-level actors such as the Federation of National Cottage and Small Industries is lacking. Given the volatile political-economic system of Nepal, the ecosystem-level associations must campaign for a commitment from political system to avoid policies that hinder operations of enterprises. Similarly, there is still dearth of research and evidence at the local level to guide policy and program planning process at the higher levels. Even with ongoing programs and projects, the capability to implement services and create enabling environment needs further strengthening. Other macro-economic phenomenon such as increasing out-migration has contributed to both shortage of labor supply and decreased incentive for wives receiving

remittance to work.

4. Discussion

4.1 Growth stages of growth-oriented enterprises

Enterprises go through different phases in its growth path. The assessment of underlying process by which an entrepreneur decides to become an entrepreneur and start an enterprise helps identify critical determinants that shape her growth path. Popular models depicting the growth phases of enterprise are adapted forms of classical product lifecycle model with 5 stages. Churchill and Lewis (1983) have identified these 5 stages for small enterprises as: existence, survival, success, take-off, and resource maturity, Scott and Bruce (1987) have identified these stages as: inception, survival, growth, expansion, and maturity. The study proposes that a women entrepreneur's startup journey in Nepal be divided into three critical components as she ventures into an enterprise, namely inception, promotional, and growth phases. The three phases are described in this section and summarized in Figure 1 below:

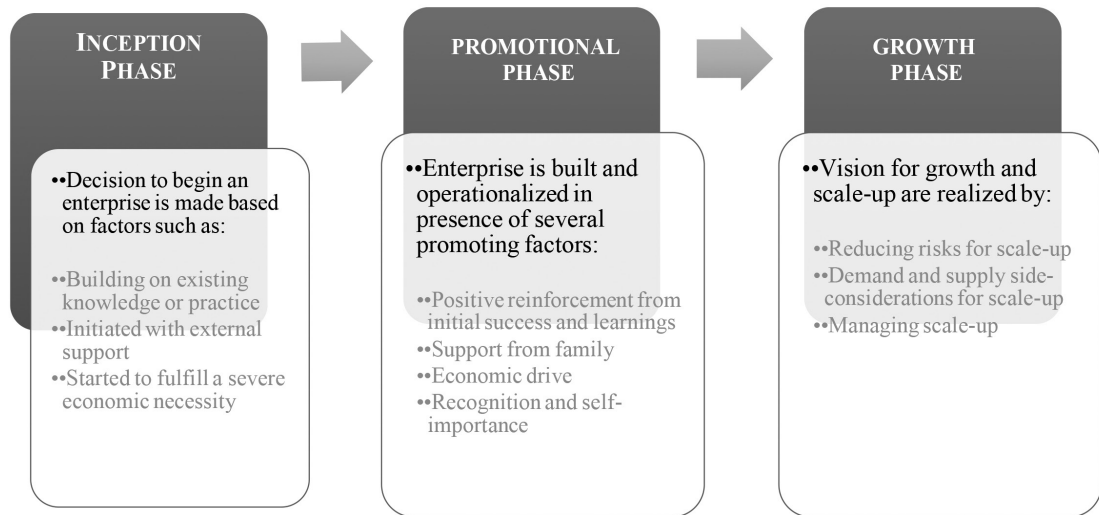


Figure 1: Three phases of the startup journey

Inception Phase

The study finds that entrepreneurs take into consideration a range of factors from one's

capabilities, resources availability and gaps, financial benefits to risks to make decision to start an enterprise. While it is seemingly important to consider all these factors, the decision often

hinges on one or more contextual factors that ultimately push the person into entrepreneurial journey, as described in detail below:

1) Enterprise built on existing knowledge or practice: It is common for rural households to be engaged in subsistence agriculture and livestock rearing. Over time, such households accumulate local knowledge to assess ecological and technical prospects of activities such as growing vegetables and rearing goats or chicken. When such knowledge and practices are catalyzed by additional technical capability building efforts, such as through local NGOs or extension services, the person can venture into a specialized area of product (such as goat farming as illustrated by a goat entrepreneur who now raises 15 goats):

“We had around 4-5 goats at home already, and then we thought of expanding it further and turning it into an enterprise. Also, I took a four day-long goat keeping training 2 years ago from District Women and Children Development Office, where I was given one goat for free. In the training, I learnt about different breeds of goats, diseases, and types of forage grass. What other trainings have you taken? I did not take any other except the 4 days goat keeping training. I chose this because the location of our house is suitable for livestock farming as there are plenty of places for grazing. So, I felt that it would be easier for me to keep goats.”-An entrepreneur of Palpa district

2) Enterprise initiated with help from external support: A more common factor for starting an enterprise is receiving start-up support from local NGOs, such as International Development Enterprise (IDE), District Women and Children Development Office etc., or from governmental programs, such as the Department of Cottage and Small Industries (DOCSI). Some common forms of support include provision of trainings (such as in non-farm products like hand loom or dhaka accessories and clothes), and supply of saplings (for lemon entrepreneurs) or seeds (for vegetable entrepreneurs).

3) Enterprise started to fulfill a severe economic necessity: While most entrepreneurs are driven by the financial gains, some specially chose to venture into entrepreneurship out of economic needs to make ends meet. Such

households often have issues such as an alcoholic husband who does not contribute much to the household income, unsupportive in-laws, or limited assets for productivity. The entrepreneurs are often driven by their desire to provide better education to their children and improve their own financial independency.

I was compelled to start this. My children were young and my husband is an alcoholic. If their husbands were working hard and doing well, women wouldn't have to suffer as much.

I really wanted to study but my father got me married when I was still in grade 7. So I couldn't continue my studies. Even though I couldn't study further, I felt that my children should get good education. That's why I wanted to do this... I acted very brave and didn't bow down in front of any one. I said, “I should be allowed to work to be able to get my father-in-law's medicine. If I don't get I will go elsewhere and work. Either give me a leave, or let me do farming”.

Promotional Phase

Once the decision is made, the hard work of operationalizing the enterprise begins. This phase is characterized by multitude of challenges that often test entrepreneur's technical and adaptive capabilities to solve problems, seek support, and persist towards a set vision. The study finds a range of promoting factors that enable an entrepreneur to deal with such issues, as described in detail below:

1) Positive reinforcement from initial success and learnings: The initial results of enterprise are critical for one's motivation and determination to continue the entrepreneurial pursuit. The positive reinforcement can come in the form of improved earnings, increased productivity, realization of potential for scale, and increased attention from agricultural extension service providers. In contrast, when the initial optimism is met with continued external issues, entrepreneurs are compelled to discontinue, as in the case of a lemon farmer who switched from vegetable farming in response to problems caused by wild animals.

After seeing myself succeed, I constructed a tunnel. Then even the personnel from District Agriculture Office started coming to my place to

visit... When we began vegetable farming, and started earning some money, I felt encouraged to do more. So, I made a tunnel and from that I added more and more tunnels. Now I have 7 tunnels!

I was getting good results from tomato and cauliflower farming, but gradually, there was increasing problems from rabbits, deer, and monkeys all day. As they did that, I thought of an alternative and tested out a few lemon saplings in my nursery. We had one plant already, and after examining the saplings, they gave really good results. Then I realized that this is really suited for this location, and soil. So, I decided to change from vegetable farming because of wild animal problem and switched to lemon farming as an alternative

2) The support from family: For an entrepreneur to continue her aspirations, an enabling household environment seems critical. While most women entrepreneurs are expected to carry out household chores, from preparing meals to helping children, the level of support from family, particularly from the husband is important in order to devote significant time on the enterprise. Two types of support are common: (a) direct support, in which family supports directly by giving time for the enterprise, such as in going to buy raw materials, seeds and cattle feed or taking products to markets; or (b) indirect support, in which family helps in reducing the household chores for the entrepreneur so that she can devote more time to her enterprise. In cases of single mothers, the situation is rather dire, often requiring the entrepreneur to balance both household and enterprise-related responsibilities. The following quotations demonstrate such differences:

Being a woman, my additional role is also that of a housewife. So, I have to look after kids, cook, and manage forage for livestock and so on. I am also a fulltime teacher in a school nearby. I teach LKG kids. At home, there is my husband and my in-laws. I help-out in the mornings and evenings, and go to school during the daytime. My husband helps me out at home...

My children were young and my husband is an alcoholic. If their husbands were working hard and doing well, women wouldn't have to suffer as much. There wouldn't be a need for them to

go abroad. So we have to work hard because they don't do that.

I have to look after my home as well as the shop. When my husband is available, he also helps me out and sits at the shop from 7-10 a.m. So, I come after giving food to my husband and children. Also, when he comes back early from his office he sits here and I go home early, otherwise I go back directly around late evening.

3) Economic drive: Another critical promotional factor in the entrepreneurial journey is the aspiration and vision for higher economic benefits from the enterprise. Most entrepreneurs had some clear goals for the next five years, whether it was to increase the number of goats or to purchase new land to increase vegetable production. Such goals are justified based on the current results and contextual factors such as one's age, ability to find labor, the level of support from the family, and other practical constraints.

4) Recognition and self-importance: One important aspect of the entrepreneurial journey is also the local recognition, which increases their confidence and gives importance to their profession. The District Enterprise Challenge (DEC) of Daayitwa seems to increase the "celebrity" status of entrepreneurs who were selected in the Top 20 and Top 10. The entrepreneurs point to the significance of such recognition and reward for good performance in entrepreneurship, particularly for making family members more supportive towards the enterprises, getting attention from financial sectors, and receiving support from extension services. Following quotation from an entrepreneur's son and entrepreneur respectively highlight the importance of recognition:

You have shown so much determination in working even when it's difficult to find labor here. Even in Daayitwa, you have been selected in the top 40, top 20, and then in top 10 as well. Now you have to be selected in the top 5 as well. Let's increase the farm area

If everything is there, lemon, vegetables, etc., whatever is needed, I want to grow them and want people to say, "a woman like this is doing so much." I want to set my name like that.

Growth Phase

The process and nature of growth are found to be dependent on the type of product or service. The growth prospects, definition and possible trajectory can be different depending on preference, for example, whether the entrepreneur is focused on agribusiness (such as vegetable or lemon farming), livestock (goat rearing, poultry, dairy), goods (clothing, retail shop) or services (beauty parlor). While an expansion across labor, capital, and market is common across most sectors, the aspiration and ability to grow enterprises is contingent upon several contextual factors. Below is the description of how enterprises in the study view the scale-up and growth.

1) Reducing risks before scale-up: Given the initial two phases are often fraught with high uncertainties, some enterprises focus on managing and mitigating risks so that growth can be achieved in more stability and controlled manner. As such, goat entrepreneurs, for instance, emphasize the importance of insuring their livestock first and then increasing the number of goats. In case of vegetable farmers, the experimentation of different vegetable seeds, land, farming methods, and market relationships, also provides significant learning opportunities to identify risks and potentials for growth. With shop-oriented entrepreneurs, the growth phase is informed by the understanding of customer demands, strategic markets, and relationships built with input suppliers.

2) Considerations for scale-up: While most scale-ups seek to increase revenue by ultimately increasing output, the study finds the nature by which scale-up is envisioned can be either based on demand-side or supply-side considerations.

- o Demand-side considerations: Where market demands are high, the entrepreneurs can be confident on their scale-up efforts with focus on increasing production and improving the linkages with the market. Service-oriented entrepreneurs, such as those with retail shops, aspire to relocate to more urban areas or establish retail outlets in bigger cities.
- o Supply-side considerations: In many cases, however, entrepreneurs face their own supply-side constraints resulting in their

limited ability to meet the demand. Such considerations often include investments (on capital and machinery), labor, time shared by the family, and technical capability to manage growth. Interestingly, some entrepreneurs are hesitant to take loans from banks which tend to have strict collateral requirement with cumbersome paper work, and instead prefer to borrow from local cooperatives.

3) Managing scale-up: A successful scale-up requires that both demand and supply side constraints are adequately addressed during the scale-up process. Given the risks involved, greater support from family, technical advisory services from extension workers, and persistence in the face of challenges are critical for effective transition management.

I am thinking that since my husband has a temporary job, he can also resign from his job so that we both continuously work in this and make 500 plants. Recently, we bought more land.

My husband sold the tomatoes that I planted, and didn't give me any money. Still undeterred, I continued to pursue my goal without being let down by the lack of support.

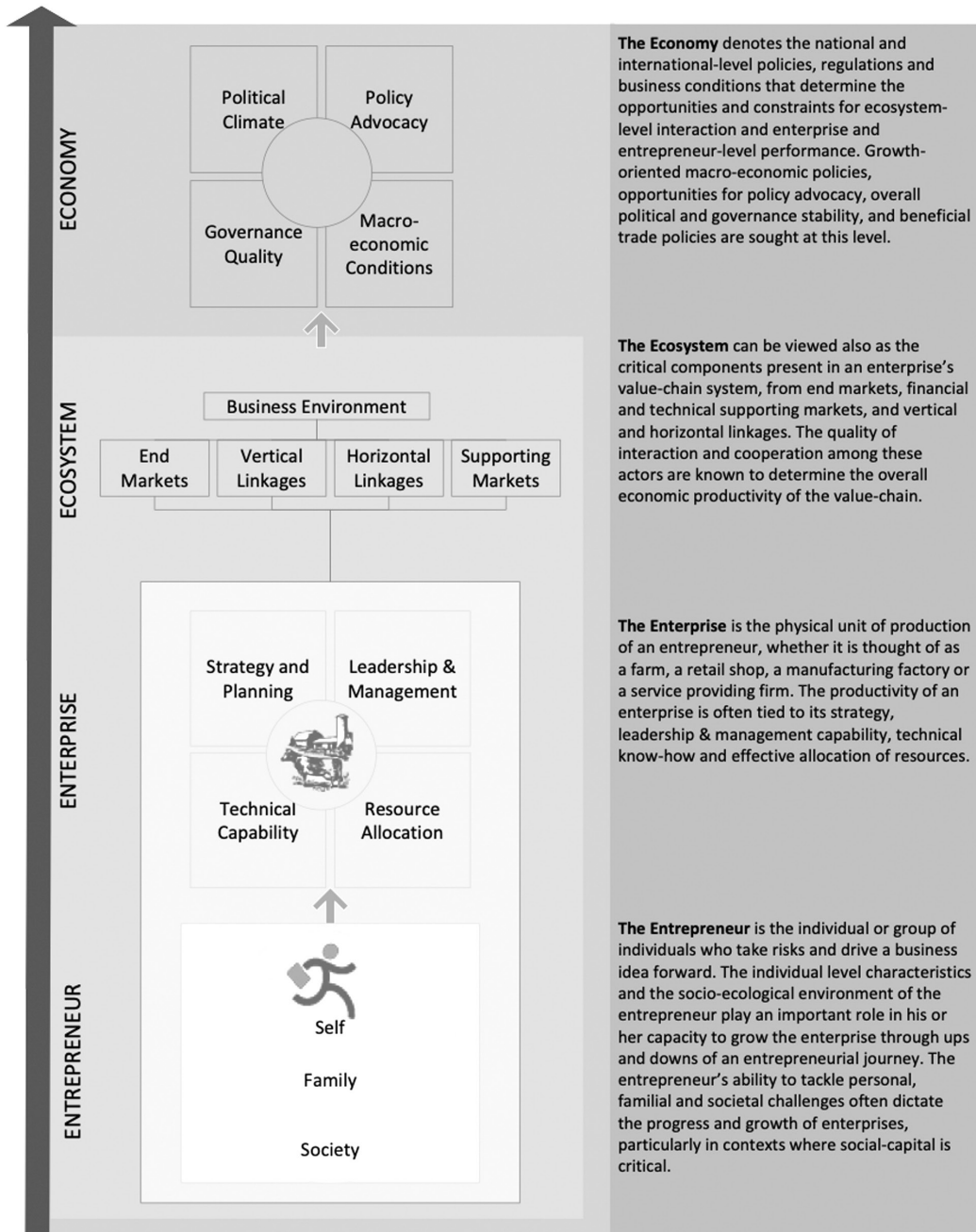
4.2 An Analytical Model for Entrepreneurship Promotion

The following ecological model of entrepreneurship has been proposed for understanding entrepreneurship in context of rural Nepal. Each components and sub-components of the model have been defined for the studied context.

E1: Entrepreneur

The entrepreneur is the individual or group of individuals who take risks and drive a business idea forward. The entrepreneur's ability to manage issues at the level of self, family, and society, dictates the progress and growth of their enterprise particularly in a context where social-capital is critical. The issues identified at each level are:

a) Self: Since an entrepreneur is a self-driven individual, it is important to identify and enable the "self" of an entrepreneur to catalyze his/her success. Some emerging themes from the study include:



- Self-perception of women entrepreneurs' own status in their household and their physical ability to do certain tasks can often take emotional and functional toll on entrepreneurial growth.
- Vocational or technical knowledge seems to boost confidence and capability, even in absence of adequate formal education.
- Ability to manage time, between enterprise

work and other responsibilities in household (as care provider to children and relatives) and/or society (as member of community organizations or cooperatives), is cited as one of the challenges faced by women entrepreneurs.

- Interest in pursuing leadership roles in the community-based committees or cooperatives is high among top entrepreneurs.

b) Family: The level of support from family, such as husbands, children, and in-laws, can be viewed in a spectrum of supportive, unsupportive/discouraging and restrictive nature of the family:

- **Supportive:**

- Husband helps full-time or when not engaged in his work.
- Children support when available after school or during vacation
- Relatives help by bringing or taking items to market while traveling for their own purpose.

- **Unsupportive/discouraging :**

- Family may be indifferent, skeptical or downright discouraging about entrepreneurial work.
- Family members do not extend any support, even if they have time or resources

- **Restrictive:**

- Family may blame for taking too many risks or losing money in new and uncertain pursuits.
- Family may restrict access to family land or resources.
- Various cultural reasons, such as Brahmin, should not engage in poultry, may be cited to demean the enterprise.

c) Society: Following issues at the society level affect the entrepreneur's growth:

- Community's mindset towards women entrepreneurship could be discouraging, often stemming from society's perception and skepticism of women's technical knowledge, management capability, and physical ability.
- Among neighbors, some aspects of jealousy of an entrepreneur's rise are also reported. In

such case, the neighbors often avoid buying goods from the services.

- Informal women circles in the community still embrace the traditional role that promotes economic dependency on husbands. Such mindset discourages women from taking risk and becoming an entrepreneur.

Strategic Considerations at Entrepreneur Level

- Build adaptive leadership capability of entrepreneurs to boost self-conviction and manage effectively familial and societal challenges in pursuing entrepreneurship.
- Provide key technical knowledge and skills to build confidence and capability to operate and grow enterprises.
- Demonstrate both economic and reputational benefits of pursuing entrepreneurship, to change mindset of unsupportive or restrictive members of the family.
- Promote entrepreneurship at a societal level such as through district-wide challenges to engage the society in selecting promising entrepreneurs.

E2: Enterprise

Enterprise is the physical unit of production of an entrepreneur, where it is a farm, a retail shop, a manufacturing factory or a service-providing firm. The productivity of an enterprise is tied to its strategy, leadership, and management capability, technical know-how, and effective allocation of resources.

a) Strategy and Planning: Most entrepreneurs have developed growth targets, identified critical constraints and planned solutions in achieving them, in various degrees and often in an ad-hoc basis, as discussed in detail below:

- Growth targets: Growth targets are described in forms of amount of earning per month, quantity of production, amount of investments, technology upgrades and expansion of labor force.

- **Constraints Diagnostics:** Some of the critical constraints diagnosed by entrepreneurs range from investment gaps, labor constraints, linking to markets, information gaps and balancing family responsibilities.
- **Planning solutions:** Some entrepreneurs have also developed plans to mitigate constraints in their growth path. Some prefer to try experiment possible solutions while others seek to adopt best practices or knowledge.
- **Environmental management:** Some enterprises can have negative consequences in their environment and must provision environmental safeguards. For instance, in poultry farming, neighbors and the community may complain about the smell from chicken coops and the biological waste that may pollute water and land resources. Hence, such entrepreneurs require specialized management skills and knowledge to mitigate risks to the environment and gain confidence from the neighbors.

b) Leadership and Management: The challenges discussed by entrepreneurs in relation to leadership and management fall into the following categories:

- **Human resource management:** The most common concern by entrepreneurs is in finding adequate labor force for the enterprise. Given the growing trend of unskilled laborers out-migration, finding khetalas, or temporary wage laborers, has become a big challenge in growth. In some cases, husbands and sons are often recruited for more physically intensive activities such as ploughing fields with a tractor.

One interesting aspect of outmigration is that while outmigration has reduced the labor force and raised the wage in general, farmers are abandoning more labor-intensive farming of crops to less labor-intensive enterprises. Another important dimension of men's outmigration is the role of remittance in also removing their wives, who now have "easy income," from the labor force. The dual impact of outmigration on the availability of both husband and wife in the labor force is causing a significant shortage of human resources for growth-oriented enterprises.

- **Financial management:** While most entrepreneurs reported to not have a functional record-keeping system, financial literacy and management skills are highly valued.
- **Physical resource management:** Making sure adequate physical resources, such as land, water, and climatic conditions are available for enterprise functioning is also one of the management concerns of entrepreneurs.

c) Technical Capability: The type of technical capability required by enterprises varies based on the type and nature of the sector. The enterprises in the study can be classified into three sectors, with each having different kinds of technical capability requirements:

- **Agriculture sector:** Some primary topics for technical capability strengthening in this sector include quality seeds and nurseries, organic farming, safe farming (such as limiting use of pesticide and other chemicals), plant diseases control, setting up greenhouses and tunnels, and food processing techniques (ex: making pickles from lemons).
- **Livestock sector:** In the livestock sector, such as poultry, a range of topics for capability strengthening are desired, including knowledge on poultry diseases and treatment, access to quality chicks, knowledge about and access to quality feeds, skills for caring for and managing a poultry farm, and techniques for increasing productivity.
- **Goods sector:** Retail and goods-focused enterprises, such as in handicraft, seek to receive locally-offered trainings for improving product designs, improving quality, diversifying products, and expanding to bigger markets.

d) The ability of an enterprise to allocate resources to meet the demands of a growth strategy is critical for success. Besides human resources and technical capability resources covered above, other resources can be categorized as the following:

- **Financial resources:** Some of the primary sources of financial resources are local cooperatives or savings groups. While

enterprises can take-out small loans for business growth, women-owned enterprises report facing a lack of trust, often from women themselves. Other enterprises report that access to financial resources is not the primary issue given the availability of small loans through local cooperatives.

- Land resources: In agriculture and livestock-focused enterprises, the way land is allocated and utilized determines the physical growth possibilities of an enterprise. Due to urbanization and migration, abandoned land is increasingly more available in rural areas for renting or for purchasing at low cost, whereas the valuation of land around urban areas has inflated. Changing valuation of land has both limited and enhanced capability in using land resources for enterprise growth depending on their rural or urban positioning.
- Ecological resources: Enterprises established in areas that lack necessary ecological resources, such as water for irrigation, poor climatic condition, rough terrain hindering market access and presence of wild animals that can destroy farming or livestock, face systemic constraints in growth.
- Technological resources: Another critical resource type is new technologies or equipment that increases efficiency, particularly when expanding the enterprises. For example: an expanding livestock farm might require milking machine, pasteurizer, and packaging machine whereas a growing farm might require a green house and weather control machine.

Strategic Considerations at Enterprise Level:

- First, provide a systematic Strategy & Business Planning support to entrepreneurs in assessing the feasibility and potential of the enterprise; developing plausible growth targets; assessing practical constraints to achieve those growth targets, and designing innovative solutions to address those constraints.
- Second, enhance essential leadership and management capability to implement those innovative solutions while managing effectively human, financial, physical, and environmental resources.

- Third, provide customized technical capability building trainings to increase knowledge and skills of enterprises to enhance operations and outputs.
- Finally, assist the enterprise in allocating resources depending on the size, growth requirements, and existing assets.

E3: Ecosystem

Ecosystem consists of enterprise's value-chain system, end markets, financial and technical supporting markets, and vertical and horizontal linkages. The quality of interaction and cooperation among these actors determine the overall productivity of the value chain.

a) End Market: The production decision of enterprises rests on the features of end markets of the product. Most micro entrepreneurs working in relatively shorter value-chain, end markets are usually the end buyers themselves, rather than an intermediary vertical unit in the value chain, such as whole-seller or retailer. Following are the crucial issues identified in end market.

- **Market identification approach:** Given enterprises' closeness to the customer base, they must make production and supply decision by considering several factors:
 - o Identify markets with excess demand over supply
 - o Switch to different products when over-supply can be anticipated (ex: plant beans if neighbors are planting cauliflower)
 - o Switch to different markets that give a higher price
- **The product delivery channel:** To get products to end buyers, there are three main types of channels for micro entrepreneurs:
 - o Direct product delivery – The products are sold by the entrepreneurs to customers directly, such as in the case of vegetables sold by entrepreneurs themselves in the market, or handicrafts or goods sold in retail shops. This channel offers reach only to local markets in proximity.
 - o Indirect product delivery – The products are delivered mostly through a higher vertical unit (covered in the following section), such as external retail units or intermediary

- either located in local market or town centers farther away.
- o Customer pick-up – Some products are picked-up by the customers themselves, such as in the case of goat farming or poultry. This is particularly true for enterprises that have easier access to roads or offer products that are in high demand locally. As with direct product delivery, this channel only offers reach to local markets and is further limited if people are not aware of the enterprise.

Critical Challenges in End Market:

- Wastage and spoilage of agriculture products, particularly for vegetable farmers, is a critical challenge given it is the producers who must bear the loss solely if vegetables are not bought by end-buyers.
- Market-quantity demand information is not available to producer entrepreneurs to inform their decisions on production and in strategies for optimizing supplies.
- Market-price information is also lacking to assess price differences across local and farther markets.
- Market access is also limited to one's connection and networks in external markets. Those who have relatives or links in potential external markets can capitalize on those informal networks to expand their markets, whereas those who don't are stuck in local markets.
- Marketing of diversified products across sectors (ex: doing both vegetable and livestock) could create considerable challenge in developing market linkages simultaneously.
- Marketing and product advertising strategy often relies only on personal contacts or local outlets.

b) Vertical Linkages: Input supplies make up the vertical linkages in the ecosystem. Some major considerations in input supply reported across different sectors that affect the productivity and/or growth of enterprise, include the following:

- Livestock sector: For goat entrepreneurs, availability of grass is contingent upon

local resources such as proximity to forest, pasture land, and planted grass. Because of the outmigration of people from villages, entrepreneurs report greater access to grassland since fields are left barren.

- Agriculture sector: The productivity and growth of agriculture entrepreneurs are depended on timely availability of good quality seeds and fertilizer, and on access to other inputs such as irrigation, labor force and pesticides.
- Goods sector: For an entrepreneur producing incense, raw materials come from an urban city, located a two-hour bus ride away. Given the transportation cost, she finds it more attractive to buy a machine herself that can produce certain raw materials. Similarly, transportation of raw materials can be challenging, particularly for women entrepreneurs with difficulty finding time away from family to go to input suppliers located in far urban centers.

c) Horizontal linkages: Horizontal linkages are defined by the nature of competition and collaboration among entrepreneurs with same or similar products described as follows:

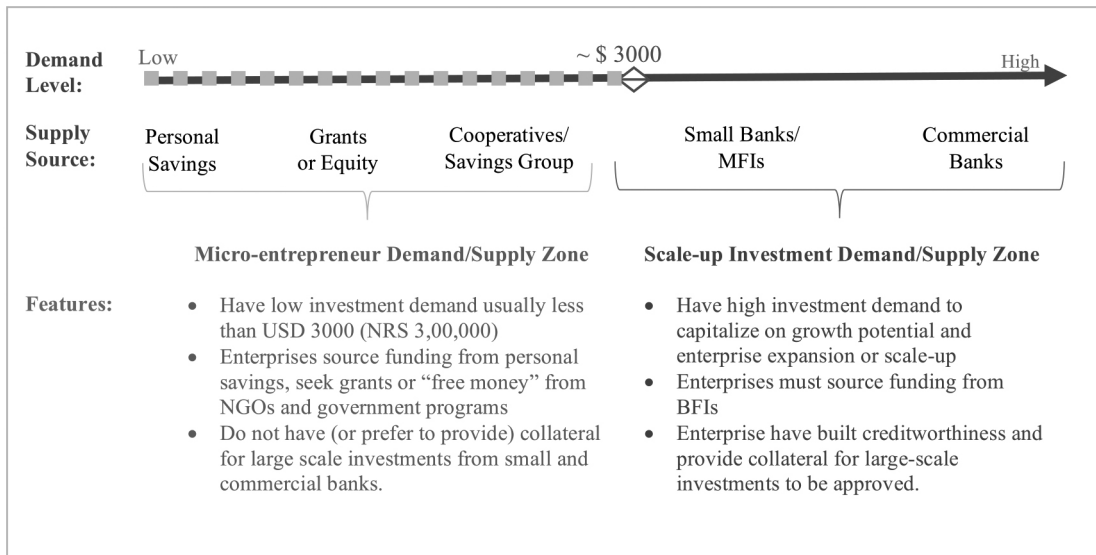
- Competition: As there is an increase in entry of entrepreneurs in a product sector, the rising competition leads to the undercutting of prices when fighting for the same customer base. Interestingly, pioneering entrepreneurs, who have started a new product in a certain locality, seek to provide trainings to new entrepreneurs though they acknowledge it increases competition for them. While it is difficult to gauge the underlying reasons for making such a decision, some entrepreneurs do cite factors such as payment from training fees, recognition in the community as trainer, and general expansion of networks.
- Collaboration: Despite an increase in competition, some mutually beneficial opportunities from collaboration also exist, such as in reducing transportation costs when done in bulk for collective bargaining, fulfilling each other's short-run supply gaps to maintain customer satisfaction, obtaining technical trainings, and using financial services by forming community or savings groups.

d) Supporting Market: Financial providers and technical providers that make up supporting markets have the following observations:

- Financial providers: Entrepreneurs prefer to use different forms of financial providers based on several factors including the stage of enterprise, size of investment requirements,

availability of “free money” or personal savings, ability to provide collateral, and fear of defaulting on loans, as illustrated below:

The landscape of financial demand-level and supply-source can be represented in the following spectrum diagram:



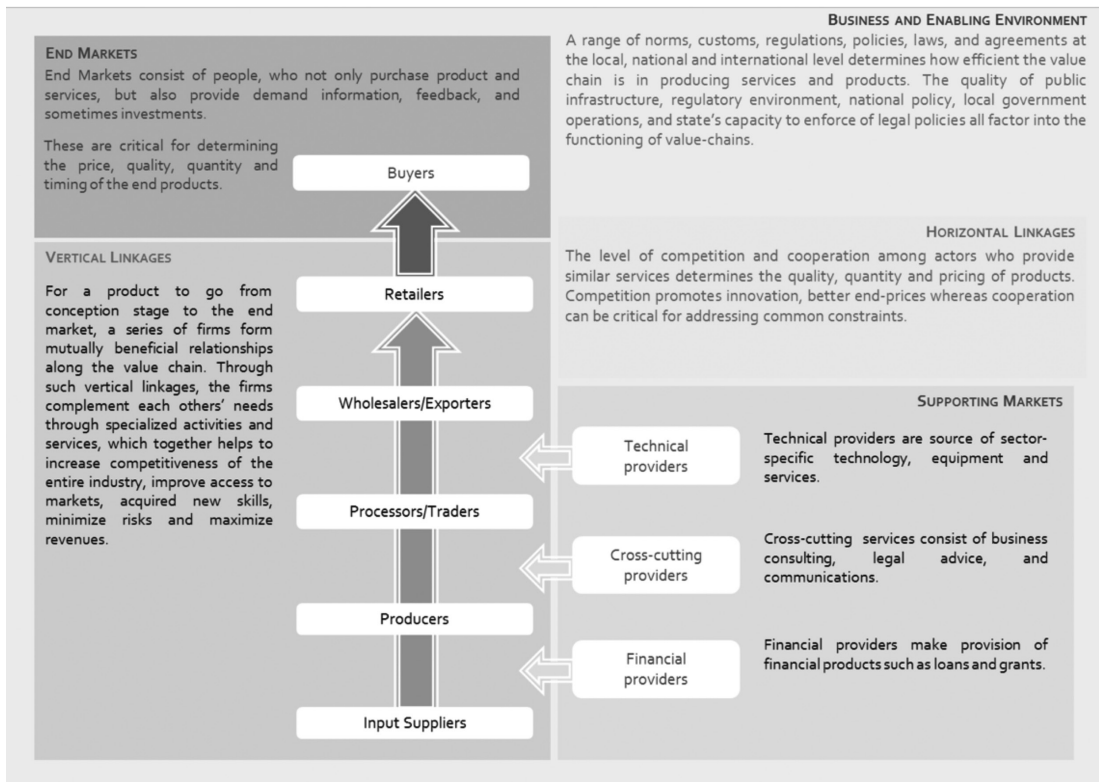
- Technical Providers: A range of technical service providers is noted to have supported the entrepreneurs in acquiring knowledge, skills and services related to their enterprises. Some of the commonly cited resources include the following:
 - o Government: Local Agricultural Support Center, Junior Technicians/Assistants (JT/JTAs), i.e. agriculture extension workers
 - o NGOs/INGOs: Agriculture programs that provide short trainings; Campaigns that recognize and reward pioneering farmers; Training of trainers program (12 days long) to create local-level trainers in agriculture
 - o Community-based organizations: Farmers’ groups, often link with external partners and specialists to trainings to its members (participants are often selected in competitive basis among group members); Local cooperatives

- o News and Media: TV and radio programs
- o Peers: Learning from other farmers who are pioneering new techniques or technologies; Informal trainings from or apprenticeship with relatives or household members

e) Business Environment: Some of the common challenges cited in a business environment include the following:

- Political protests and strikes that interfere with business operations and transportation of products and raw materials.
- Legal policies that exclude micro-enterprises from receiving services, such as in restrictions in getting insurance for goats if the enterprise is raising less than 50 goats.
- The availability and quality of public services through livestock office and agriculture support center.

Entrepreneurship Ecosystem Map



Strategic Considerations at Ecosystem Level:

- Perform a Value-Chain Analysis (VCA) at the ecosystem level to understand the various features of the different dimensions of the ecosystem.
- Provide access to price information of relevant markets to help entrepreneurs sell their products at higher profits.
- Consider social networks and relationship with end buyers in building customer relationship and identifying practical productive delivery channels given that the enterprise-customer relations are often tied to social institutions and relationships in rural areas.
- Promote constructive competition by enabling market forces to improve productivity and by facilitating collaboration in collective bargaining, streamlining vertical activities for decreasing marginal costs, and in enhancing specific value-chains.
- Facilitate local-mentorship to aspiring entrepreneurs by skilled entrepreneurs through provision of incentives and technical resources for trainers.
- Conduct sector-specific or product-specific diagnostics as part of the VCA to understand the constraints across vertical linkages. To solve the challenges, sector-specific interventions must come from (a) the government side (such as checking the quality of inputs available, improving land-use regulations, and increasing access to fertilizers) and (b) the private sector (such as allowing competition among input providers, women-entrepreneurship friendly transportation facilities, and better resource management).

- Assess and plan supply and demand matching of financial services with ecosystem interventions such as increasing ‘credit-worthiness’ of entrepreneurs; reducing asymmetric information on entrepreneurs to financial providers; facilitating engagement and interaction; support scale-up investments and borrowing from small and commercial banks depending on growth potential and current stage; build action-oriented partnerships with range of ecosystem actors for enhanced resource and technical expertise optimization, such as mapping and coordination of technical services to be provided in a fiscal year by various actors; using of mass media for providing technical information; and peer-to-peer learning through local mentorship and knowledge/skills-sharing engagements.
- Diagnose and identify policy level bottlenecks and facilitate policy advocacy efforts to entrepreneurs and/or policy planning support to institutions.
- Mitigate risks associated with political and governance instability.
- Support institutional capacity development efforts of local service agencies.

E4: Economy

Economy denotes the national and international-level policies, regulations, and business conditions that determine the opportunities and constraints for ecosystem-level interaction and entrepreneurs and enterprise-level performance. Growth-oriented macro-economic policies, opportunities for policy advocacy, overall political and governance stability, and beneficial trade policies are sought at this level.

a) Political Climate: The most cited challenge in enterprise operation was the impact of protests and bandhs, i.e. shutdown of markets and transportation mediums, called for political reasons. Similarly, it is also noted that services or funding is often provided to entrepreneurs who are connected to the people offering those services.

b) Policy Advocacy: One of the major challenges in advocating for policy is the

limited number of entrepreneurs in a sector to collectively raise voice. Pioneer entrepreneurs, experimenting new ideas and sector, can face constraints from existing policy framework. However, since they are the pioneers they cannot build a base for policy advocacy or have the time or resource to lobby for changing a growth-hindering policy.

c) Governance Stability: The quality of government services, provision of entrepreneurship support and training, and general responsiveness of the government extension services is impacted by the stability and accountability of governance system both at the national-level policy planning and local-level program implementation.

d) Macro-Economic Conditions: Interest rates, inflation level, and general economic productivity and purchasing capacity are known to impact the financial outputs of the enterprises. Interestingly, women entrepreneurs did not cite any macro-economic level challenges that they faced.

Strategic Considerations at Economy Level:

- Encourage national-level campaigns through existing entrepreneur associations to receive commitment from political parties to avoid tactics that hinder operations of enterprises.
- Facilitate policy advocacy by gathering evidence through research and making policy recommendations to policy stakeholders.
- Build governance capability and extend support for more stable and quality provision of services.
- Monitor the impact of macro-economic factors on enterprises, and make evidence available for policy advocacy.

5. Conclusion

The formative study has helped develop a strategic framework for promoting growth-oriented women entrepreneurs by distilling critical features across the dimensions of 4Es and in their growth trajectory.

First, in regards to first E, Entrepreneurs, a greater emphasis is needed in adaptive aspects of

entrepreneurial capability. This means strategies must go beyond the traditional technical skill-building approaches to techniques that help address issues and challenges originating from the individual, household (or family), neighborhood, and/or society. The respondents report the constraints posed by such variables in their entrepreneurial pursuits. Therefore, to provide a holistic support to the entrepreneur, it is important to ensure motivation for growth is sustained, necessary interpersonal and adaptive problem-solving capabilities are developed, and technical ability and sector-specific knowledge is enhanced.

Second, in regards to Enterprise, the entrepreneurs must operate as per a systematically designed strategy & business plan. The exercise helps an enterprise assess the feasibility and potential of the enterprise, develop plausible growth targets, assess practical constraints to achieve those growth targets, and design innovative solutions to address those constraints. Likewise, micro-enterprises must build their leadership and management capability to implement those innovative solutions while managing effectively human, financial, physical, and environmental resources. In this process, supporting markets have a strong role to play in providing customized technical capability building trainings.

Third is the Ecosystem, under which the entrepreneurs and enterprises must duly identify inefficiencies and diagnose and resolve critical constraints along the value-chains and business environment. Some ecosystems require specific services, such as market price information or monitoring supply and demand fluctuations. One major challenge encountered by some ecosystems is harmonizing competition and collaboration in horizontal linkages. The evidence suggests that growth-oriented entrepreneurs not only value constructive competition to improve productivity and give room for innovation,

but also need collaborative platforms and arrangements for collective bargaining, product marketing and streamlining vertical linkages for reducing marginal costs and enhancing value-chain efficiencies. In addition, ecosystem must also leverage the expertise of academia, research institutions, technology service providers, and more experienced entrepreneurs for enhancing resource and knowledge optimization.

Finally, since entrepreneurs and enterprises have more difficulty in influencing the Economy-level factors, a strong mediatory role must be played through the ecosystem-level actors. Given the volatile political-economic system of Nepal, the ecosystem-level associations must campaign for a commitment from political system to avoid tactics that hinder operations of enterprises. Similarly, there is still a dearth of research and evidence at the local level to guide policy and program planning process at the higher levels. Even with ongoing programs and projects, the capability to implement services and create enabling environment needs further strengthening.

In conclusion, the study underlines the importance of forming a grounded understanding of all dimensions across the 4 Es while creating entrepreneurship promotion strategy. The strategic framework is not only useful in designing interventions for promoting women entrepreneurship, but also in identifying critical gaps in research and evidence. The 4Es framework, for instance, can help develop more rigorous quantitative models for testing attributions, designing experimental studies to test effectiveness of specific or “packaged” interventions, and in guiding future operations research of projects such as REAP. A holistic strategy, backed by strong scientific evidence, is necessary to catalyze women-entrepreneurs in growing their enterprises and enhancing their enterprising ecosystems.

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Perception of Environmental Change Relationship to Labor Migration in the Chitwan Valley

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Abstract

This research examines environmental change, in terms of agriculture production, influence on out-migration from the Chitwan Valley in Nepal. As the first part of a longitudinal study, a maximum variation sampling method was used to gather data on farming households' perceptions of environmental change and labor migration. While collecting field data, verbal consent was obtained from research participants and their identities protected. This study uses the measures of environmental change, social capital, and environmental history to analyze risk formation and amplification along migrant networks. Additionally, using t-tests, this data was compared to a sample from the Chitwan Valley Family Study (CVFS) to observe change in perception and labor migration over time. The analysis concludes that perception of environmental change interacts with socio-cultural processes in ways that intensify household level migration. In addition, environmental change is one of the main factors causing low efficiency in agriculture production, leading households to diversify occupation and income through labor migration.

Keywords: Labor Migration, Agro-meteorology, Environmental Change, Agriculture

1. Introduction

According to the Intergovernmental Panel on Climate Change (IPCC), South Asia has experienced increased temperatures and variability in rainfall that have affected agriculture production, food scarcity, and water resources (IPCC, 2015). In agriculture-based societies such as Nepal, crop production depends on consistent patterns of rainfall and temperature. These trends and vulnerabilities are predicted to continue for the coming decades and lead to increases in labor migration (Climate & Development Knowledge Network, 2014).

Environmental factors play a significant role in shaping the decision to migrate. Previous research has hypothesized that perceived changes in land productivity will lead to increased labor migration along already established migrant networks in order to achieve greater socio-economic prosperity (Bardsley, 2010; Bohra, 2009; Massey, 1993; Shrestha, 2007). Specifically, perceived decreases in agricultural production

is found to be a predictor of international and local movement of populations (Massey, 2010). At the local level, communities and individuals determine whether an environmental change is acceptable or problematic, and adjust accordingly, usually in the form of an adaptation mechanism, such as migration (Bardsley, 2010; Kasperson, 1988). To explore how risk communication process at the household and community level determine whether an environmental change is acceptable or problematic, this research uses the Social Amplification of Risk Framework to analyze the role a migrant's extended network plays in their perception of environmental risk. The measures of environmental change, defined as change in agriculture production over the past three years, environmental history, defined as the amount of crop loss and moves due to flood and/or drought a farming household has incurred over a lifetime, and social capital, defined as a farming household with a family member who has migrated internationally and participated in environmental program or campaign, are

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employed to better understand environmental risk formation.

Due to the fact that perceived decrease in land productivity is likely to be a strong motivator for migration along established networks (Massey, 2010), this research argues that informal social networks amplify environmental risk communication resulting in the household response to migrate. Additionally, socio-cultural factors of gender, age, and ethnicity influence the risk perceived from environmental change.

This research utilizes household data to observe the connection between perceptions of environmental change and the motivation to migrate. Using a maximum variation sampling method, this study employs a quantitative survey and semi-structured interviews to gather data on agriculture production and labor migration. Additionally, household level data collected through the Chitwan Valley Family Study, consisting of qualitative interviews and household survey data collected over a fifteen-year period, is used to observe a change over time in perceptions of agriculture production and labor migration (Axinn, 2011; Barber, 2003; Bohra, 2009; Ghimire, 2018; Massey, 2010).

The quantitative survey covers four areas main areas involve in environmental change and labor migration. The topics discussed are environmental history, perception of agriculture production, access to natural resources, labor migration and interaction with environmental campaigns or programs. The overall goal of this research is to understand, in terms of environmental change, the role threat perception plays in the decision to migrate. Specifically, this research seeks to understand what community, historical, and environmental factors make up or contribute to a migrant's perception of risk.

Location

This fieldwork was conducted in Nepal's Chitwan district, a largely agriculture-dependent society with a fragile ecosystem (Massey, 2010). Due to Chitwan farmers' reliance on intensive crop rotation for sustenance and income generation, Nepal's Chitwan district is the ideal setting to observe a potential link between environmental change and out-migration (Barber, 2003; Bardsley, 2010; Ghimire, 2018; Massey, 2010).

The Chitwan region of Nepal has a long history of labor migration, both to and from the

region. Due to waves of migration from India and Tibet, Nepalese society is comprised of more than 60 ethnic/caste and linguistic subgroups. For a century, population mobility in Nepal had stalled and the Terai region was considered uninhabitable (Massey, 2010; Shrestha, 2007). However, in the 1950s, Nepal initiated policies that encouraged migration from the mid-hill region to the Terai, the flat low-lying plains. Government policies provided land grants to officers through a land reclamation and resettlement program that was focused on the eradication of malaria (Sijapati, 1981). As one of the target locations, this program created a more diversified ethnic composition in the Chitwan (Massey, 2010).

Framework

According to the Social Amplification of Risk framework, posited by Roger E. Kasperson, hazards, such as an environmental change interacts with the psychological, social, institutional, and cultural processes in ways that may intensify or reduce public response to a risk or related risk behavior, such as migration (Godwin, 1997; Kasperson, 1988; Miker, 1977). Relying heavily on communication theory, it describes the amplification of risk as a signal in an information system that initiates as a risk event triggering an individual and community response. After the initial flow of information, there is risk-related behavior that involves an interpretation and response by social groups or individuals that can trigger a third spread of impact (Kasperson, 1988).

Drawing on Kasperson's work, Sanders Van Linden formulated a social-psychological model of climate change risk that tests for cognitive, social-cultural, and experiential processing as factors that influence risk perception. According to Linden's Climate Change Risk Model, socio-demographic characteristics had an influence over an individual's risk perception. Linden's work found that political affiliation, gender, social norms, and previous experience influences climate change risk perception (Van der Linden, 2017). In a London sample size, he controlled for socio-demographic characteristics and found a 70 percent variation in climate change risk perceptions among respondents. Van Linden's research emphasizes the importance of socio-cultural factors and local weather as factors that influence risk perception (Van der Linden, 2017).

Risk is a formation of human construct; therefore, there is great cross-cultural variation between socio-cultural and economic context (Gardner, 1981; Van der Linden, 2017; Weber, 2010; Wildavsky, 1990). Both Van Linden's and Kasperson's risk perception models were applied to research samples in developed European states, where agriculture is not the main source of livelihood (Howe, 2015; Hsee, 2001; Joffe, 2003). There is a lack of risk perception research focused in developing states, such as Nepal with agriculture dependent economies, as well as on social networks influence on risk perception. This research applies Kasperson's framework to migration. In this analysis, environmental change as a risk event, interacts with socio-cultural factors causing the intensified risk response of migration. The continued applied hazard of long term environmental change will lead to self-perpetuating migration along informal social networks. Factors that influence the household response of migration is transnational, such as existing in both receiving and sending countries.

Kasperson's framework includes informal social networks as a channel of amplification; however, the impact of personal and social networks is not quantifiably. Kasperson's framework is not applied to a risk event occurring gradually over a long period of time, such as climate change. This research quantifies Kasperson's theoretical framework of risk perception and Lindens application to climate change through multivariate analyses in SPSS analyzing the relationship between labor migration and perception of agriculture production. Additionally, t-tests compare household level data, collected through the Chitwan Valley Family Study, to observe a potential change over time in perceptions of agriculture production and labor migration.

2. Literature review

Theories of Migration

Four theories of migration: Neoclassical; New Economics of Labor Migration; Social Capital; and Cumulative Causation, play into the factors that drive labor migration in the Chitwan Valley (Massey, 2004). The Neoclassical Economic Model of Labor Migration postulates that migration is a response to imbalances in the spatial distribution of land, capital, and labor. Therefore, human capital flows from areas with

an abundance of labor and scarce capital to areas where the inverse is present (Ali, 2015; Massey, 2005; Massey, 2015; Stahl, 1995). Moreover, this model assumes a destination has been selected based on an individual's rational economic response to maximize their future economic income. Like the Neoclassical Model, the New Economic Theory of Labor Migration posits that labor migration is caused due to an imbalance in the labor market (Massey, 2005; Massey, 2015, Stahl, 1995). However, rather than being driven by an imperfect market in land, labor, and capital, migration is driven by geographical wage differences. Moreover, this theory views the decision to migrate as a collective household process, instead of an individual decision.

The Neoclassical and New Economics of Labor Migration theories have been widely criticized for ignoring historical labor flows, social-cultural context, and predicted equilibrium conditions (Massey, 2004). While the neoclassical and new economics of labor migration models focus on the economic reasoning for migration, they lack the analysis of sociocultural factors that play into the household decision-making process. Originally posited by Glenn Loury and expanded by Pierre Bourdieu, Social-Capital Theory, or Network Theory, states that the transnational movement of people from one place to another for work form social ties that connect their host and receiving communities. These ties provide a source of social capital in the form of information, resources, and assistance, that lower the costs of migration. The social capital created when a person migrates can be used by that migrant's entire host community (Massey, 1995, 2004). The continual creation of social capital overtime forms a self-perpetuating process known as Cumulative Causation (Massey, 1995; Poros, 2010, 2011), where by migration becomes easier and the financial burden decreases.

Due to a lower financial burden, second generation migrants perceive a reduced risk from out-migration as opposed to the previous generation (Massey, 2004). In the Chitwan Valley, environmental change is a cause of decreases in agricultural production that has led to lower economic output and increased risk to enter agriculture as an occupation (Axinn, 2017; Ortiz, 2012; Shrestha, 2007, 2011; Smith, 2017). First, authors Dirgha J. Ghimre, William G. Axinn, and Prem Bhandari analyzed the effect of labor migration on the likelihood of exiting farming. Using multilevel dynamic models to estimate the

effect of out-migration and remittance on the exit from agriculture in the Chitwan Valley, they find that dual risk factors exist. The authors conclude that the loss of farm labor to international labor migration increases the likelihood to exit farming among households that remain. Conversely, they find that amount remittance decreases the possibility that a household will exit farming (Ghimire, Axinn, & Bhandari, 2018).

Furthermore, using data from the Chitwan Valley Family Study, authors Massey and Bohra find strong support for Social Capital theory as a predictor for individual migration. They conclude that neighbors with international experience abroad increases the likelihood of individual migration and find the theory of cumulative causation a major predictor of individuals migrating internationally for a second trip, which was location specific (Bohra, 2010). Also, ethnicity played a role in the location of a migrants first trip and preceding trips (Barber, 2011; Bohra, 2010).

This research uses Social Capital theory to analyze the transnational flows of information through the lens of Kaperson's risk framework. Communication of environmental risk, such as changes in agriculture production, is amplified via the transnational flow of information along migrant networks. Along with traditional migrant networks of family members, neighbors and local leaders, informal networks, such as community programs, and education abroad will amplify or reduce risk from environmental change. This research predicts that extended education and employments networks outside of agriculture will become an important vehicle for migration as environmental change is perceived to affect income generation through declines in crop production and the inability to gather or purchase natural resources.

Environmental Change in Nepal

Nepal is predominantly an agriculture-based society, in which agriculture production has an inverse relationship to labor migration (Satyal, 2010). According to Nepal's Department of Agriculture, 65.7% of the population relies on agriculture production as their main source of livelihood; however, agriculture production only makes up 30% of the National Gross Domestic Product (GDP) (Ministry of Agriculture Development, 2015). Since 1970, the portion of GDP derived from agricultural production

shrunk from 69% in 1974-1975 to 31% in 2009-2010 (Economic Survey, 2010). On the other hand, international labor migration has accelerated since the Foreign Employment Act of 1985, and rapidly increased since the end of the civil war in 2006 (Satyal, 2010).

According to the World Bank, approximately 31.3% of Nepal's GDP comes from remittance flows from Nepali migrants abroad (World Bank, 2017). The Foreign Employment Act of 1985 liberalized the foreign employment process and encouraged low-skill labor migration to Gulf countries. Due to the oil boom that began in the 1970s, there was increased job availability in the service and construction sectors. This act opened avenues for private sector actors, such as recruiters, to facilitate foreign employment (Massey, 2004; Sijapati, 1981).

Previous research conducted in the Chitwan Valley finds an indirect relationship between environment change and migration (Axinn, 2018; Barber, 2011; Massey, 2010; Shrestha, 2007). Conducted through the Chitwan Valley Family Study (CVFS), previous research focused on consumption, increasing population density, and factors of environmental degradation. Authors Douglas S. Massey, William G. Axinn, and Dirgha J. Ghimire tested for factors of neighborhood population density, perceptions of agricultural production, time required to collect firewood and gather fodder, and the share of neighborhood covered with flora to measure the impact on migratory behavior. They concluded that only perceived agrarian productivity, the share of neighborhood covered in flora, and the time required to collect firewood influences mobility. Individuals were more likely to look for work elsewhere in the valley, rather than emigrate internationally. Additionally, they found that environmental migration is related to both environmental calamities, as well as gradual deterioration of conditions (Massey, 2010). This research utilizes and expands on factors tested for in the CVFS. To analyze risk formation of environmental change, this research tests for of perception of agriculture production, household consumption and labor migration. The results of this study are compared to the data collected through Massey's, Axinn's, and Ghimire's study on environmental degradation to observe change in perception and labor migration over time.

In addition, authors Jennifer S. Barber, Ann E. Biddlecom, and William G. Axinn added to this research in a three-year study on the perception

of environmental degradation's connection to social change in the Chitwan Valley. They found an association between an increase in neighborhood facilities and perceived environmental degradation. Increasing neighborhood facilities were found to be associated with perceptions of environmental degradation. They concluded that environmental degradation is likely to encourage participation in environmental programs and influence behaviors, such as migration (Barber, 2011). Barber, Biddlecom, and Axinn identify a need for further research to better understand what shapes perceptions of environmental degradation, as well as additional measures of environmental degradation and behaviors related to the environment.

This research adds to a body of work on environmental change and migration by analyzing risk formation. In addition to testing for perception of agriculture production and labor migration, this work tests for the factors of knowledge of and participation in environmental programs or campaigns, as well as for crop loss and household moves due to flood and drought. Household interaction with the environment can shape formation of risk (Hunter, 2005), therefore, by combining these four factors, along with testing for demographic and consumption data, this research seeks to understand how risk formation of agriculture production may influence labor migration.

3. Methodology

Field work was conducted in the Chitwan Valley, in the south-central part of Nepal, as the first part of a mix-method longitudinal study examining the relationship of risk perception of agricultural production and out-migration. In a one-month period, 107 household surveys and 12 semi-structured interviews were conducted in twenty-three villages in nine towns. Ten interviews were conducted with farming households in the research area and two were conducted with organizations involved in environmental focused programs.

The Chitwan Valley was chosen as a field location due to the high percentage of households involved in farming and the availability to study the change in household perception of environmental change overtime through the Chitwan Valley Family Study (CVFS). The CVFS is used as a baseline comparison in the analysis. As part of the CVFS, household level agricultural

and migration data was collected in 1996, 2001, and 2015. This study collected data on agriculture productivity, labor migration, and food security. Data was collected within 171 neighborhoods defined as 5-15 households. A total of 2,361 households were surveyed in 1996 with a response rate of 98.1%. It encouraged multiple household member participation, in which more than one-third of the interviews have documented. Around one-half of the research participants surveyed were female and the average age of the primary respondent was 42. The CVFS on agriculture and consumption conducted in 1996 gather information on farming; such as farming versus non-farming household, land holdings, and farm practices; livestock, such as collection of fodder, amount and type of livestock; household items, such as ownership of a tractor, gobar (animal dung) gas plant, and transportation; perceptions of environmental change, such as changes in the water level, changes in agricultural production, and changes in time to collect fodder; and migration, such as amount and location of members living away and remittance (Axinn, 2006; Barber, 2003; Bhandari, 2016; Massey, 2004).

This questionnaire expands on two areas within the CVFS's agriculture and consumption survey. Using the underlying theories of migration and risk formation to examine the relationship between environmental change and labor migration, the questionnaire was comprised of eight sections divided into demographic data, agricultural data, livestock, household items, change in agriculture production, personal experience, and environmental program participation. The data controlled for demographic factors, such as age, ethnicity and gender. The perception of environmental change section of the questionnaire gathered information on agricultural productivity over the last three years, water table levels, and use of chemical fertilizer. This information was gathered to analyze the relationship between a migrant's network and perception of agricultural production over time.

Using a maximum variation sampling method, nine neighborhoods, defined as five to fifteen households, were chosen to distribute the questionnaire. These neighborhoods were selected with the assistance of a research coordinator and translator with local knowledge of Chitwan to achieve a variation in socio-economic levels within the sample. While gathering field

data, verbal consent was obtained from research participants and their identities protected. The questionnaires and interviews were carried out in Nepali and communication with participants occurred using a translator. In communities with a low literate population the questionnaire was read verbally, word for word to the respondent and their response was transcribed in Nepali and later translated to English. Acknowledging the small sample size in the first part of this study, this method was chosen to obtain an accurate portion of the population.

4. Analytical strategy

First, descriptive and bi-variate tests were run to explore the correlations within the measures of environmental change, social capital, and environmental history. Then, ANOVA or Chi-Square test were used as appropriate between each measure. Multi-response analyses were used to explore the relationship between labor migration and perception of agriculture production. Furthermore, t-tests were used to compare household level data collected in 1996 with the data collected through this study to observe a potential change over time in perceptions of agriculture production.

5. Measurements

Through this analysis the goal is to better understand risk perception of environmental change, its formation, and relationship to labor migration. The following measure were developed to study this relationship:

Measures of environmental change are defined as change in agricultural productivity; several factors which influence productivity were tested for in the questionnaire. Three-year perceived change in amount of use of chemical fertilizers, water table levels, and agriculture production were each tested for. A perceived increase in the amount of chemical fertilizer was given a code of 3, decrease 1, and no change 2. If the respondent did not know, it was coded as 0. Respondents were asked, "was there was a change in water table levels in your or your neighbor's wells?" For this question yes was coded as 1 and no as 0. Lastly, a perceived change in agriculture production was coded as 1 for increased, 2 for decrease, and 0 for no change. After running descriptive tests on each variable, ANOVA or Chi-Square test was run to test the relationship between variables.

After establishing a change, increase or decrease, respondents were asked to give a reason of the change in production. Each question was coded in a multiple response set and value set to 1.

Measures of social capital: In this analysis, a migrant's extend network is examined to understand environmental communication over informal networks relationship to risk perception. Social capital was defined as a farming household with a family member who has migrated internationally and participated in an environmental program or campaign. Respondents were asked, "Have you or your family member migrated internationally or domestically for work?" If the respondent reported an international migration, it was coded as 1, and domestic migration was coded as 0. Additionally, respondents were asked "Have you or a family member participated in any environmental programs or campaigns?" If yes, it was coded as 1 and no was coded as 0. These variables were tested in a multivariate correlation against household characteristics and measurements of environmental change.

Measures of Environmental History: Environmental History was defined as the amount of crop loss and moves due to flood and drought a farming household has incurred over a lifetime. It is hypothesized that respondents who have incurred a larger amount of crop loss and moves in their lifetime will perceive decrease in agriculture production. If a household had incurred a move due to a drought it was coded as 1; if not, it was coded as 0. Similarly, if a household has incurred a move due to flood it was coded as 1; if not, it was coded as 0. Additionally, households were asked separately if they had incurred crop loss due to drought and crop loss due to flood. If a respondent reported a crop loss it was coded as 1; if not, it was coded as 0.

Measure of Household Characteristics (gender, age, caste, plots of land, pump set, etc.): Household characteristic were tested against measures of perception and migration to see if there were any differences in the way household perceived changes, as well as the social capital they held. Pervious research conducted in the Chitwan Valley suggest that High caste hold more social capital than other castes. Additionally, age, gender, and ethnicity influence environmental risk perception;

therefore producing different responses to the same risk event. Crosstab analysis were used to analyze correlations and frequency between these measures.

6. Descriptives

Demographic Data

Descriptive and frequency tests ran on the sample size of 107 can be found in table 1 and table 2. The research participants consisted of a total of 102 farming household and 5 non-farming household (outliers). 50 or 46.7% of the respondents were female and 53 or 49.5% were male. The analysis classified caste into five categories of High caste Hindu, Hill Tibeto-Burmese and Buddhist, Indigenous Tarai Tibeto-Burmese, Newar, and other caste Hindus. The respondents identified as 53.3%, 14%, 6.5%, 2.8% and 9.3%, respectively. The means and standard deviations used in analyses can be found in table 1. The mean age of the sample was 44.24 and the ages ranged from 19-81. This research used a wide age range to capture a diverse range of environmental perceptions. The average household size of a response was 5 people.

7. Results

Of the respondents, 71% perceived a change in agriculture production. 38.3% perceived a decrease in production and 32.7% perceived an increase. Table 1 displays the means and standard deviations for respondent's perception of environmental change used in analyses.

One-sample t-tests were conducted, with the variables difference in water table levels, international labor migration, changes in agriculture production, and change in use of the amount of chemical fertilizer. The results can be found in table 3. There was no significant difference between the two means of change in agriculture production and changes in use of chemical fertilizer; however, there was a significant change in the means of water table levels and international labor migration. Each displayed a positive critical value of 1.66. and households with a migrant increase from 29.1% to 55.7%.

A multi-response analysis for household crop cultivation showed that most households are currently cultivating red lentils. The survey asked respondent "what crops do you cultivate"

to examine the relationship between the type of crops being cultivated and perception of environmental change. Respondents reported 26.8% were cultivating red lentils, 11.3% potatoes, 12.4% wheat, 18.0% mustard, 1.5% barley, 4.1% Paddy 1.5 oil seed, 5.2% corn, 9.8% peas, 1.0 corn, 8.8% other vegetables, and 0.5% fruits. An independent t-test of households that grow red lentils showed a significant difference between those that perceive a decrease verse increase in agriculture production. Respondents who both cultivated red lentils and perceived agriculture to be decreasing believe it was due to insects and disease. Moreover, respondents who perceive an increase and cultivated red lentils are likely to do so due to the use of new crop varieties.

Environmental History

A chi-square test showed a significant relationship between households that incurred a crop loss due to flood and perception of agriculture production at a .032 significance value. 17.5 percent of households that had incurred a crop loss due to flood were more likely to perceive a decline in agriculture production. Additionally, the results of a chi-square test showed households that experienced crop loss due to drought are more likely to have experienced crop loss due to flood at a significance value of .024. Also, households that have incurred a move to due to a flood are more likely to have incurred a crop loss due to flood.

This corresponds to interviews and observations with farming households that conclude communities that lie along rivers and floodplains are more vulnerable to crop loss and moves to weather events, such as flood and drought. Households that perceive a decrease in agricultural production note bad irrigation, or the lack of an irrigation facility, which the majority, 23.3% select as the reason for agricultural decline. All interview respondent state that monsoon arrival is erratic; however, no households is changing the time they sow their seeds to "accommodate the arrival of rain." Half of the interview participants report damage to mustard and red lentils due to the late arrival of monsoon last rain season. Many households without irrigation facilities report between one-fourth to one-half loss in yield depending on the crop. Additionally, interview participants that perceive an increase state it is due to the use of chemical fertilizer. Participants

have significantly lower yields without the uses of chemical fertilizer; however, using it causes a depletion of nutrient from the soil and more is needed after every use.

There is a positive correlation between not having an irrigation facility and crop loss due to drought. Respondents who irrigated their crops with a canal only were more likely to incur a crop loss due to drought. The results of a chi-square test showed .025 significance between type of irrigation and perception of agriculture change. Respondents who irrigate crops with a canal only were around twice as likely to perceive a decrease than those who do not.

Social Capital

All ten interviewed farm households reported increases in labor migration within their communities over the past three years. Within 107 household surveys, 55.1% contain a current or returned labor migrant. Of those 60.2% had migrated international and 30.8% domestically. Most households selected unemployment as their main reason for migrating. Following unemployment, 11.5% of respondents reported increased debt, 8.9% low income from agricultural, 4.9% low agriculture income, 4.9% improved neighborhood livelihoods, and 3.3% reported an increase in family size as their main reason for migration.

In terms of social capital, defined as international labor migration and participation in environmental programs or campaigns, High castes, such as Brahmin and Kshyatriya, have higher amounts of social capital measured by case. The results of a chi-square test with .016 significance showed that respondents that participate in a program are likely to perceive no change in agricultural production. Moreover, there was a negative correlation between respondents that migrated internationally and participated in a program or campaign. Thus, respondents that migrated internationally are less likely to participate in a community development or environmental program.

Additionally, most interview participants reported an inverse relationship between labor migration and agricultural production over the past three years. Due to low yields from drought and declines in market value, agriculture income has been steadily decreasing. Respondents whose family had been farming for generation report theirs is the first to migrate for work. There is not

enough financial return in agriculture production to sustain a household. Some households held multiple jobs, and some were exiting agriculture.

8. Conclusion

Exit from Agriculture

In conclusion, the risk of environmental change interacts with psychological, social, institutional, and cultural processes in ways that intensify household level migration. The analysis showed low efficiency in agriculture production leads households to diversify occupation and income through migration to mitigate risk from decreases in agriculture production. Unemployment driven migration is the result of low income from agriculture production. Over the past couple of decades, there has been a growing increase in the gap between households that were active in agriculture and those that claim agriculture as their main occupation. This number grew from 19 thousand in 1991 to 641 thousand in 2001. Vikasn Raj Satyal classifies these households as “farmers by birth but having alternative occupation for livelihood.” The research finds first generation migrants in households who have been farming for generations.

A culture of migration is created through the accumulation of social capital, which lessens the financial burden of migration, making the process less of a risk than going into agriculture. This is evident from the large increase in labor migration since the 1996 CVFS and consistent perception of agriculture production. Children of first generation labor migrants are not entering agriculture, but rather going into other occupations abroad, such as construction and service sector jobs. While unemployment is cited as the main reason for labor migration, through interviews and observations, unemployment appears to identify a second-generation migrant not able to find employment outside of agriculture within Nepal. Due to fluctuating market price and erratic monsoons causing decreases in yield and intern low farm income, job diversification through labor migration reduces risk from agriculture production.

Formations of Risk

Household risk perception is influenced by environmental history and interaction

with agriculture. Crop loss and moves due to weather events, international migration, and demographic factors all effect the way households perceive risk. Because international migration decreases the financial burden from agriculture, households with family members abroad are less likely to perceive a risk from a change in production. The transnational movement of information, people, and capital via the process of migration leads to a disconnect with the local community; and therefore, less investment in community development and participation in programs, such as environmental awareness or clean up.

International migration lessens the risk from agricultural production by decreasing the financial burden and causing a disengagement with agriculture. Some households, largely those from High castes who have greater amounts of social capital to migrate to Europe, Australia, and the United States, can hire labor, pay off debt, and some exit agriculture completely. All avenues lessen household's interaction with agriculture production and the ability to perceive a change or risk from it.

Like pervious research, this study finds high castes and low castes were more likely to perceive a risk from a decrease in agricultural production. In lower castes, this is believed to stem from less access to social capital and therefore households are more likely to have a greater interaction with agriculture. Households from low castes are less likely to have hired labor, migrated abroad, and are more vulnerable to abrupt changes in weather or long protracted droughts that cause a greater amount of crops loss and moves. Conversely, within high castes, females perceive more of an increase in production compared to men. This is likely due to the increase in the feminization of agriculture labor in Nepal (Gartaula, 2012). Direct male interaction with the agriculture process has decrease due to the increase in

international labor migration. Women have taken over traditional male roles, such as going to the market, working in the field, applying chemical fertilizer, and others.

Environmental Communication

This research finds that transnational migration networks reduce the risk from environmental change, while local informal networks amplify environmental risk. Environmental risk communication travels along local social networks, such as community development programs. The most common form of program participation is a community development program formed by the local village and is run by a village council. Households with less social capital, who have participated in a program and not migrated, are more likely to perceive change in production. Conversely, households with a labor migrant and with one or more member that has participated in an environmental program, were likely to perceive no change in agriculture production. International labor migration reduces the risk from change in agriculture production. Due to income diversification and disconnect from agricultural activity, environmental risk was reduced, rather than amplified.

Further research is needed to better understand environmental communication along transnational networks. This research did not focus on aspects of weather; however, research has shown individuals and households can perceive weather as climate. It can influence household opinion on environmental change and is worth further observation. In addition to further research on measures of risk formation, exploration of international migration and the disconnect or exit from agriculture's connection to migration will add to a growing body of research on environmental change and migration.

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Appendix

Table 1. Measures of Environmental Change

		Responses	
		Case	Percent
Change in agriculture production	Increase	35	32.7
	Decrease	41	38.5
	No Change	30	28
	Total	106	100
Reasons for productivity decrease	No irrigation facility	37	23.3
	Excess water	5	3.1
	Unfavorable weather	25	15.7
	Insects and diseases	23	14.5
	Not enough manure	20	12.6
	Application of excess chemical fertilizer	15	9.4
	Poor quality manure	6	3.8
	Deterioration of soil quality	28	17.6
Total	159	100	
Reasons for productivity increase	Use of new crop varieties	18	15.3
	Better irrigation facilities	23	19.5
	More favorable weather	7	5.9
	Less insects and disease	14	11.9
	Improved agricultural tools	12	10.2
	Application of more manure	25	21.2
	Application of more chemical fertilizers	19	16.1
	Total	118	100

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
gender	103	0	1	0.51	0.502
age	100	19	81	44.24	14.577
caste	92	1	5	1.85	1.342
<hr/>					
Environment Change	N	Minimum	Maximum	Mean	Std. Deviation
irrigation of Khet land	102	0	1	0.90	0.299
Means of Irrigation	97	1	3	1.54	0.646
change in agriculture production over the past three year	106	1	3	1.95	0.785
change in amount of chemical fertilizer	77	1	3	2.09	0.814
difference in water table	81	0	1	0.70	0.459
<hr/>					
Environmental History	N	Minimum	Maximum	Mean	Std. Deviation
moves due to drought	106	0	1	0.03	0.167
crop loss due to drought	41	0	1	0.56	0.502
moved due to flood	102	0	1	0.08	0.270
crop loss due to flood	51	0	1	0.37	0.488
<hr/>					
Social Capital	N	Minimum	Maximum	Mean	Std. Deviation
international/domestic	59	0	1	0.73	0.448
participation in program or campaign	49	0	1	0.63	0.487

Table 3. Descriptives

		N	Mean	Std. Dev.	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
change in agriculture production over the past three year	No	54	1.02	0.835	0.114	0.79	1.25	0	2
	Yes	52	1.19	0.793	0.110	0.97	1.41	0	2
	Total	106	1.10	0.816	0.079	0.95	1.26	0	2
No irrigation facility	No	30	0.57	0.504	0.092	0.38	0.75	0	1
	Yes	28	0.71	0.460	0.087	0.54	0.89	0	1
	Total	58	0.64	0.485	0.064	0.51	0.77	0	1
Excess water	No	31	0.10	0.301	0.054	-0.01	0.21	0	1
	Yes	28	0.07	0.262	0.050	-0.03	0.17	0	1
	Total	59	0.08	0.281	0.037	0.01	0.16	0	1
Unfavorable weather	No	30	0.33	0.479	0.088	0.15	0.51	0	1
	Yes	28	0.54	0.508	0.096	0.34	0.73	0	1
	Total	58	0.43	0.500	0.066	0.30	0.56	0	1
Insects and diseases	No	29	0.24	0.435	0.081	0.08	0.41	0	1
	Yes	28	0.57	0.504	0.095	0.38	0.77	0	1
	Total	57	0.40	0.495	0.066	0.27	0.53	0	1
Not enough manure	No	30	0.40	0.498	0.091	0.21	0.59	0	1
	Yes	31	0.26	0.445	0.080	0.09	0.42	0	1
	Total	61	0.33	0.473	0.061	0.21	0.45	0	1
Application of excess chemical fertilizer	No	30	0.27	0.450	0.082	0.10	0.43	0	1
	Yes	28	0.25	0.441	0.083	0.08	0.42	0	1
	Total	58	0.26	0.442	0.058	0.14	0.37	0	1
Poor quality manure	No	30	0.13	0.346	0.063	0.00	0.26	0	1
	Yes	28	0.07	0.262	0.050	-0.03	0.17	0	1
	Total	58	0.10	0.307	0.040	0.02	0.18	0	1
Deterioration of soil quality	No	30	0.43	0.504	0.092	0.25	0.62	0	1
	Yes	28	0.54	0.508	0.096	0.34	0.73	0	1
	Total	58	0.48	0.504	0.066	0.35	0.62	0	1
use of chemical fertilizer three years ago	No	51	0.82	0.385	0.054	0.72	0.93	0	1
	Yes	49	0.88	0.331	0.047	0.78	0.97	0	1
	Total	100	0.85	0.359	0.036	0.78	0.92	0	1

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Evaluating the Policy Claims of Migration in Nepal 1
Asmod Karki

Unlocking the Relationship between Entrepreneurship and Socioeconomic Integration 13
Bishwash Praja

An Analytical Model for Strategic Promotion of Growth-Oriented Women Entrepreneurship in Rural Nepal 23
Chhitij Basyal and Tara P. Panthi

Perception of Environmental Change Relationship to Labor Migration in the Chitwan Valley 41
Jessica Miller

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