



# **Sharing the Burden: Improving the Welfare of Nepal's Mountain Porters**

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Dedicated to all the mountain porters in Nepal



## **EXECUTIVE SUMMARY**

Trekking workers form an important labor segment in Nepal, which hosts eight of the ten highest peaks in the world, including Mt Everest. Mountain porters are lowest in this labor hierarchy but are considered to be the backbone of the trekking industry because of their immense role in making trekking accessible to trekkers around the world. Policies and programs aimed at porters are largely driven by the Ministry of Tourism and the Trekking Agencies Association of Nepal (TAAN), an umbrella organization of 1200 registered trekking agencies and our client for this project. This report is written in response to TAAN's request to help design the most effective programs to be funded by the Porter's Welfare Fund (PWF), which is financed by royalty fees that trekkers pay.

We undertook primary data collection from three trekking hot-spots in Nepal including the Langtang, Everest and Annapurna regions. A key issue that stood out is the lack of identifiability and verifiability of porters as there are no records of them. Currently, porters are hired informally on an ad hoc basis without any contracts. The lack of reliable information leads to design and targeting issues of welfare programs. It has also led to information asymmetry in the industry, particularly as it relates to recruitment practices. Trekking agents have no way of verifying the experience level, honesty and strength of porters. Hence, they rely primarily on their networks to hire porters. Therefore, good porters do not have any credible mechanism to signal their abilities. In addition, extractive guides and porter leaders often engage in opportunistic behavior by demanding commissions from porters in return for trekking opportunities.

We recommend a two-stage solution with an overarching goal of improving the welfare of porters. First, to address the problems associated with identifiability and verifiability, we propose setting up Porter's Referral Centers (PRCs). Porters would register with the PRC and provide information including previous treks, age, address, health status etc. When trekking agents need porters they will contact PRC, who will make referrals from the available pool of registered porters. After each trek, trekking agents and trekkers will provide feedback on porters. Once a database with information on porters is built at PRC, it will facilitate design of welfare programs financed by the PWF, which leads us to the second stage of the solution. To this end, we propose two options that will improve the welfare of porters, (i) making training programs (guide training, language, first aid and altitude sickness etc.) accessible to porters by providing them outside Kathmandu in a roving model and (ii) providing porters with matched contributory pensions with emergency withdrawal properties.



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## SECTION 1: INTRODUCTION

### 1.1. Motivation and Background

Nepal is home to eight of the ten highest peaks in the world. The tourism industry is estimated to have contributed to 8.2 per cent of GDP in 2013 and is forecasted to rise to 10 per cent of GDP in the next decade.<sup>1</sup> In 2011, it was estimated that over 200,000 tourists took part in trekking activities in Nepal.<sup>2</sup> As the tourism industry becomes more competitive and trekking becomes more accessible, it also translates to increased demand for trekking support staff. For example, in 2010, 32,220 trekkers who visited just the Everest region were backed by a support staff of 80,000 individuals including guides, assistant guides, porters, and climbing cooks,<sup>3</sup> with majority of them being porters.

Yet, despite being the backbone of the trekking industry, porters are absent in the policy and academic discourse. In addition, it is only after emergencies and natural calamities that porters unite and collectively bargain with policymakers to improve their working conditions and compensation levels. This is what happened in April, 2014, when 16 trekking workers died in an avalanche in the Everest. The various unions of trekking workers immediately went on strike and boycotted any activity in the mountains till their demands were met.<sup>4</sup> Their demands included better treatment and pay for trekking porters, adequate reimbursement to the families of deceased porters, and insurance. In response, the Ministry of Tourism, Culture and Civil Aviation (MOTCCA) and the Trekking Agencies Association of Nepal (TAAN), an umbrella organization of 1200 trekking agencies in Nepal and our client for the project, raised the daily wages of porters and the compensation to families of deceased porters. In addition, they also agreed to set aside a Porter's Welfare Fund (PWF)<sup>5</sup> to address the needs of porters. This fund fits in well with TAAN's broader vision of ensuring that trekking employees are given opportunities to develop their full potential and that their basic rights are respected.<sup>6</sup>

The PWF is funded by the royalty fees (ranging from \$10-\$500 per person) collected from trekkers

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<sup>1</sup> "Travel & Tourism, Economic Impact 2014, Nepal", World Travel & Tourism Council

<sup>2</sup> Jones, Harry. 2013. "Entry points for developing tourism in Nepal." *ODI Research & Policy in Development*.

<sup>3</sup> Project Concept Saving Mount Everest. 2010-11 "Restoring dignity to the Mountain: A sustainable waste management concept for Nepal's World Nature Heritage Sagarmatha National Park." *EcoHimal*

<sup>4</sup> "Black Year: Everest's Deadliest Season", Outside Magazine, August 2014

<sup>5</sup> Also referred to as Trekking Information Management System (TIMS) Welfare Fund and Worker's Welfare Fund

<sup>6</sup> <http://www.taan.org.np/about-us/introduction>

under the Trekking Information Management System (TIMS) managed by TAAN on behalf of the MOTCCA.<sup>7</sup> This study is conducted in response to TAAN’s request to conduct a comprehensive assessment of the needs of porters and consequently help decide the most effective use of the PWF to improve their overall welfare. Given the source, it is expected to be a stable source of funding in the future. In fact, this fund is expected to grow not just because of increased trekkers in the country, but also because the trekking areas from where TIMS fees are collected are expanding as new trekking routes open up, thus increasing the pool of funds available for the welfare of porters.<sup>8</sup>

## 1.2. Data

There is currently no published data on the socio-economic status of Nepal’s porters. As a result, we had to rely on primary data collection as described below.

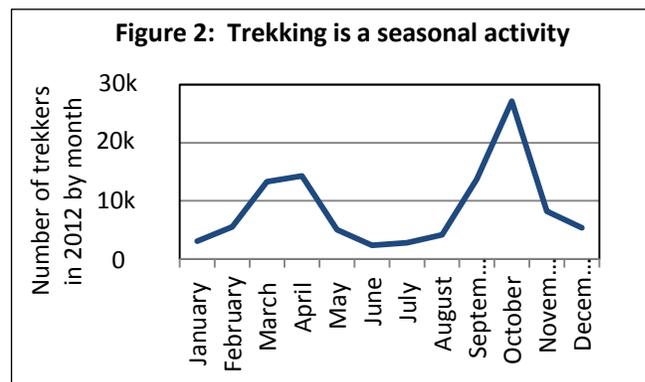
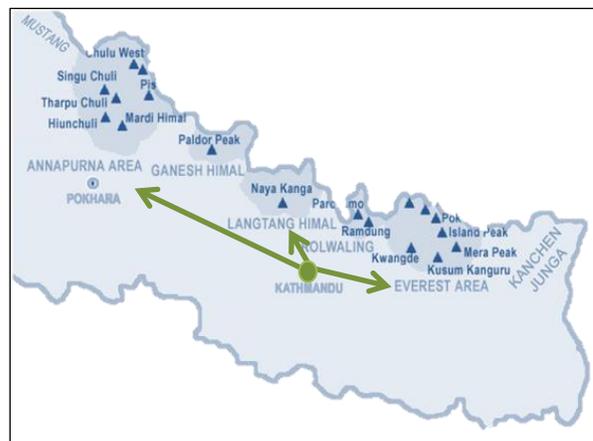
**Winter Data Collection:** With support from Harvard, TAAN and MOTCCA, we were able to collect primary data from over 180 porters from three hot spot regions: Solukhumbu, Pokhara and Rasuwa, which are the starting points of the Everest, Annapurna and Langtang treks respectively.

The rationale for choosing these regions is provided in Appendix 1.

**Questionnaire and Sampling Methods:** Given the lack of information on porters, our data collection effort sought to cover the following characteristics – demographics, socio-economic status, education, financial access, on-season activity details (income, number of treks, tips, expenses during treks, factors affecting recruitment, and difficulties faced during trekking

and professional affiliations) and off-season activities given that tourism is seasonal in Nepal (see Figure 2) with April-May and October-December being the peak seasons.

**Figure 1: Data collection in Pokhara, Rasuwa and Lukla**



<sup>7</sup> <http://www.timsnepal.com/>

<sup>8</sup> Discussion with TAAN President, Mr. Ramesh Dhamala

It is important to note that given the nature of the population of interest i.e., porters, and the time and budgetary constraints, we were unable to employ random sampling. We, instead, used a combination of sampling methods in the survey sites.

- a. Snowball sampling, whereby we relied on our interviewees to refer us to other porters.
- b. Convenience sampling, whereby we chose our informants in the following ways:
  - We visited villages where majority of households are porter households, and interviewed porters who were available.
  - We visited hotels and camp sites on trekking routes during mornings and evenings and interviewed porters who were on treks and resting for the night at these places.

**Summer Data Collection:** In August 2014, we conducted a short survey of 495 porters who were taking the Guide Training course at the Nepal Academy of Tourism and Hospitality Management (NATHM). This survey provided our initial assessment of porters and helped facilitate the initial design of the study. We did not pool this data with the winter dataset described above despite many overlapping questions because the porters we interviewed at NATHM represent only a small portion of the porter population that is more progressive.<sup>9</sup>

**Other Interviews & Focus Group Discussions:** The individual porter interviews were further supported with deeper focus group discussions and qualitative interviews with guides, porters, tourism police, local tourism experts, Trekking Information and Management System (TIMS) management, trekking agents, Porter Union leaders and MOTCCA management. In addition to providing perspectives of various actors in the tourism industry, these discussions also allowed us to vet our analysis and subsequent recommendations.

This paper proceeds as follows: 1) presents a socioeconomic status of porters 2) diagnoses the problem and its implications in the trekking industry 3) motivates a two stage solution and discusses the first stage considering technical, political and administrative aspects 4) lays out a five year implementation plan of the recommended solution 5) provides options for the second stage solution 6) conclusion.

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<sup>9</sup> Discussion with TAAN President, Mr. Ramesh Dhamala

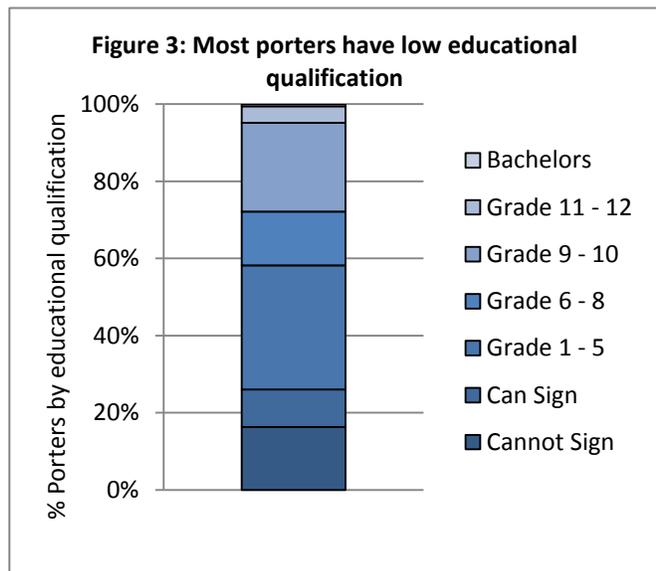
## SECTION 2: SETTING THE CONTEXT

The New Economics of Labor Migration (NELM) predicts that *“if income and/or status are low and risks are high and there are market and government failures (so no other means of social protection), the household then makes the decision that one or more members of the household migrates to a labor market that is negatively or non-correlated with the local labor market. They thus co-insure each other by diversifying their labor portfolio.”* (Hagen-Zanker, 2008)

This theory also applies to the decision made by households of porters to send a member to the city in search of opportunities in the trekking industry albeit for short periods of time during the year. Engaging in temporary, circular migration enables them to mitigate risks associated with subsistence agriculture and also to enhance their otherwise meager income. Some characteristics of porters from our survey data are summarized below:

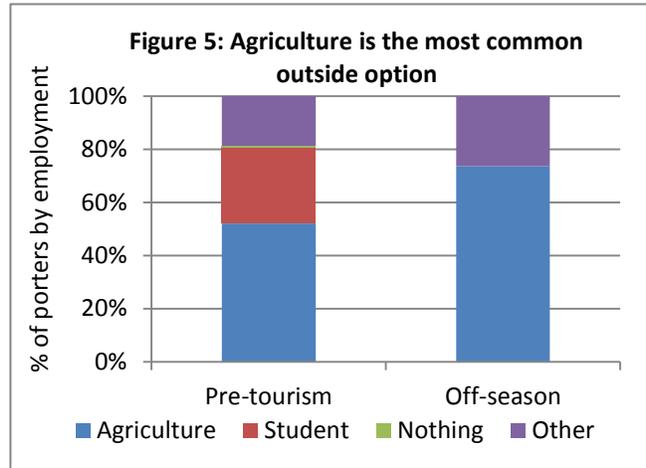
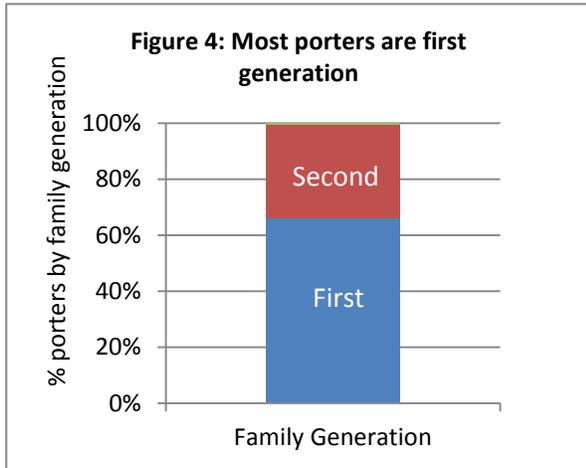
### A. Education level among porters is low:

As can be seen in the chart alongside, close to 60% of porters either didn't go to school or even if they did, did not manage to attain schooling beyond primary school (Grade 5). Only 17 per cent of porters have studied between Grades 10 to 12. This shows that most porters have limited outside options as they do not have the required educational qualification to receive employment in any other industry, especially in the formal sector. Only 10 per cent of the porters interviewed



have received any form of informal training in their lifetime. Training adds value to the quality of a porter and a sense of career progression. Without education and training of any kind, it is challenging for porters to climb the ladder to the ranks of assistant guides and guides.

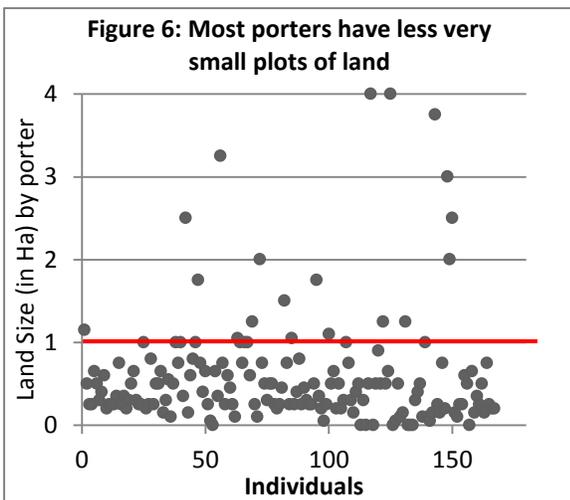
**B. Most porters are first generation whose only other source of income is farming:**



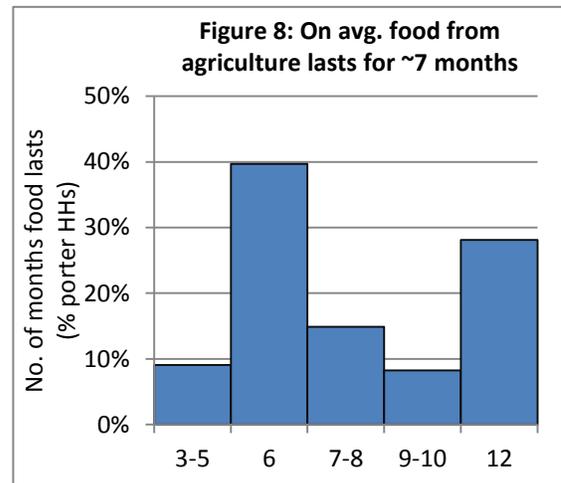
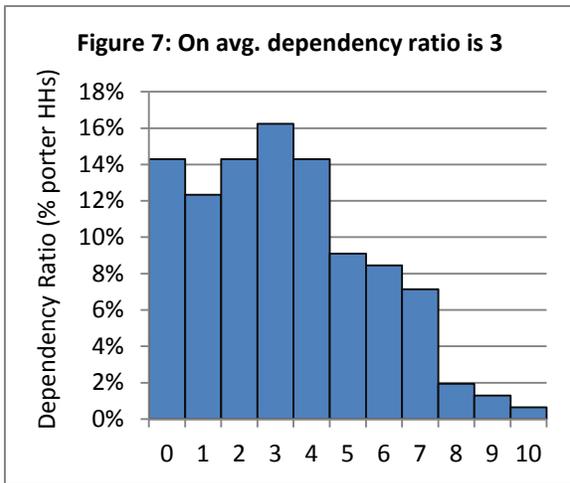
The porters we interviewed were mostly first generation (more than 60%), which implies that these porters face higher barriers of entry to the industry as non-first generation porters have networks in the trekking industry that can ease their entry. Agriculture is the only outside option available to majority of the porters (Figure 5) which makes it all the more crucial for them to find a job despite the high costs and uncertainty associated with finding opportunities in the trekking industry. These costs include the costs of temporary migration to major cities like Kathmandu and Pokhara and in the commissions they pay to middlemen (guides and porter-leader or *naikes*) who recruit them.

**C. Most porters are subsistence farmers who, on average, produce enough for self-consumption that lasts for about 7 months:**

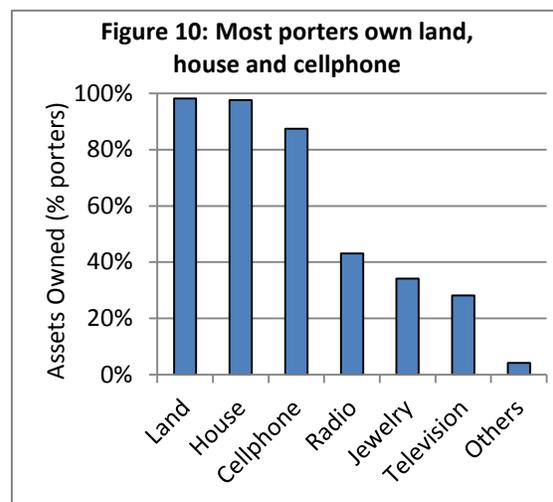
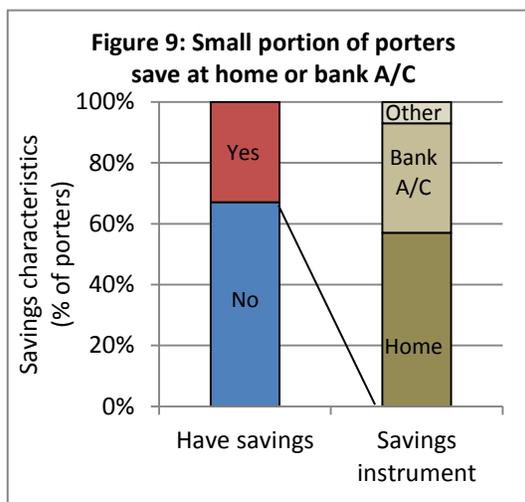
As mentioned previously, porters are subsistence level farmers, producing food (mostly grains) for self-consumption. Only a small proportion of farmers (close to 20%) manage to generate income



through farming. On average, the produce is enough to feed the household for only about 7 months. Given the high dependency ratio (defined as the number of economically inactive members per active member) at about 3 and the inherent risk and unpredictability associated with agricultural production in Nepal, these farmers are immensely in need of an income source that is non-correlated with agriculture and portering is one such option.



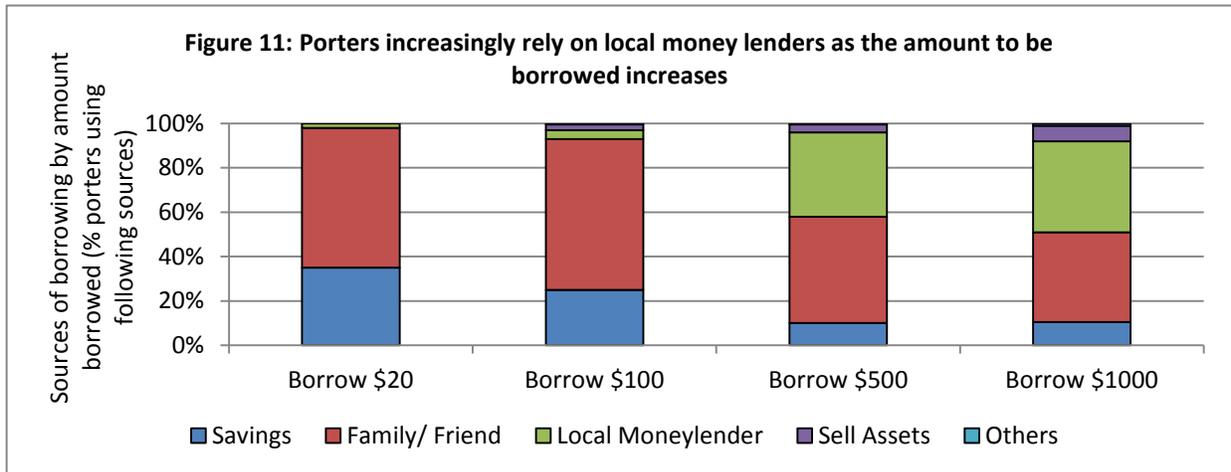
**D. Most porters have no forms of savings and the only assets they own are land, houses and cellphones:**



We observe from our data that close to 70% of porters have no form of saving. Amongst those who have savings, close to 60% of them keep their money at home. Only about 30% use bank accounts, with the remaining relying on local moneylenders or other informal savings networks in their villages. Almost all porters own land and houses, both of which are inherited. Cellphone is the only other asset that most porters own.

**E. Porters undertake borrowing from the informal market (family/ friends) at high interest rates and no collateral:**

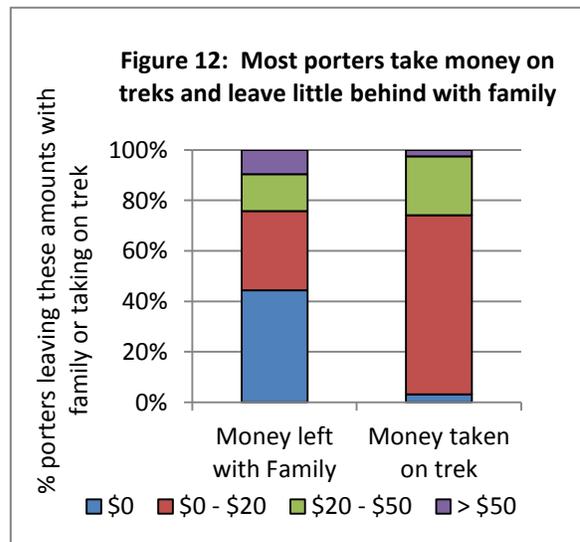
Borrowing from local sources is expensive with interest rates as high as 36% per annum but which requires no collateral. As seen in Figure 11, the relative importance of local money-lenders increases as the amount of money required increases from \$20 to \$1000.



An interesting point here is that porters mostly use the loans for regular expenses. About 45% porters mentioned that loans were taken to meet regular expenses such as household consumption and children’s education. About 10% reported using loans for improving dwelling, 9% for medical treatments and 8% for purchase of livestock.

**F. Informal borrowing plays a crucial role in smoothing consumption when the porter is away:**

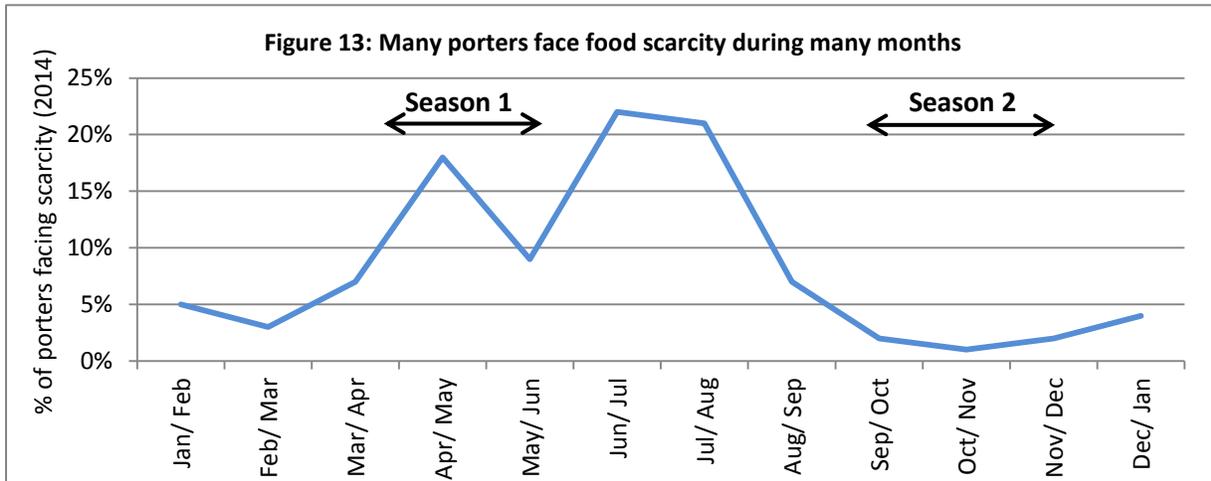
Finding employment opportunities as a porter entails incurring high costs due to migration to the city. 45% of porters responded that they do not leave any money behind with the family when they migrate. However, 70 per cent porters carry upto \$20 with them when they travel. The family members left behind rely on food produced at home for consumption and when this falls short, they borrow from friends, neighbors or from nearby grocery store in anticipation of the porter bringing enough money to pay the loans upon his return.



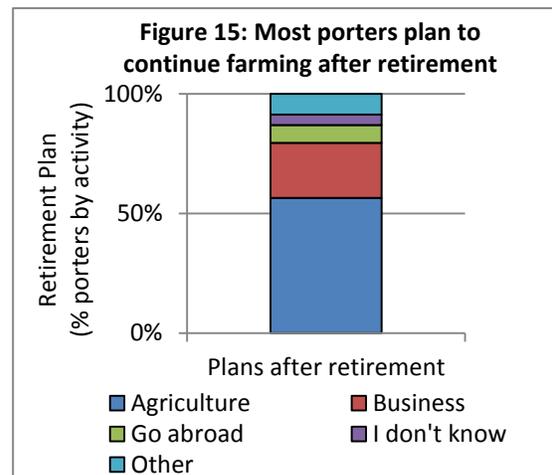
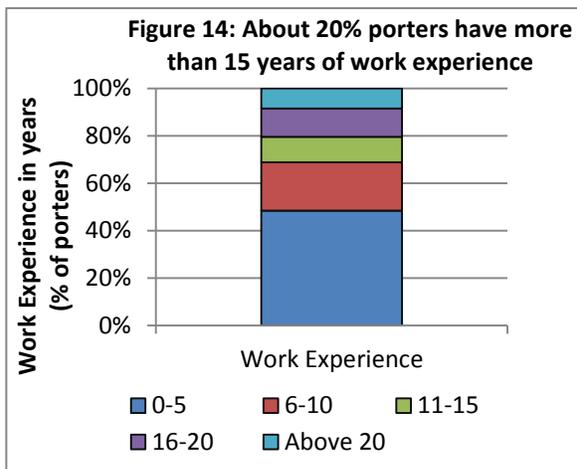
**G. In spite of migration, porter households continue to face scarcity during several months:**

As can be seen in Figure 13, the incidence of household scarcity is the highest in the June to

August period.<sup>10</sup> The situation becomes better following the beginning of the main harvesting season in August and is supplemented by earnings from the second trekking season. The winter harvest helps sustain consumption levels.



H. Given the lack of other opportunities or the skills for other jobs, porters plan to go back into agriculture once they retire from the trekking industry:



On average the age for retirement is late 40s to early 50s, but due to injury many times porters end up having to cut short their careers even further. The trekking agents we spoke with reported that they are reluctant to hire porters above the age of 40-45 unless they have known them for long.

<sup>10</sup> Scarcity – months when household members didn't have enough food or money to buy food. This information is based on the response received to the question "In which months in this year have there been times when the household members didn't have enough food or money to buy food?"

Close to 60% porters plan to go back to agriculture once they retire. In addition, about 20% porters also plan to set up small businesses (mostly shops).

#### **BOX 1: Key Findings**

- A. Education level among porters is low.
- B. Most porters are first generation whose only other source of income is farming.
- C. Most porters are subsistence farmers who, on average, produce enough for self –consumption that lasts for about 7 months.
- D. Most porters have no forms of savings and the only assets they own are land, houses and cellphones.
- E. Porters undertake borrowing from the informal market (family/ friends) at high interest rates and no collateral.
- F. Informal borrowing plays a crucial role in smoothing consumption when the porter is away.
- G. In spite of migration, porter households continue to face scarcity during several months.
- H. Given the lack of other opportunities or the skills for other jobs, porters plan to go back into agriculture once they retire from trekking industry.

## SECTION 3: DEFINING THE PROBLEM AND IMPLICATIONS

### 3.1. The Problem

As discussed above, despite engaging in this precarious profession in an attempt to diversify his income sources, a porter is unable to prevent his household from facing consumption scarcities during the year, warranting the need for interventions aimed at improving his welfare.

**Existing Interventions:** Currently, there are no interventions aimed at the welfare of porters other than the Porter Welfare Fund. So far, this fund has only been used in rescue operations during natural calamities and in supporting families of deceased porters as such programs are non-rival and non-refutable. Porter unions and trekking agencies view this fund as being “frozen” because it has not been used for general welfare programs for porters despite TAAN’s success in collecting royalty fees from trekkers.<sup>11</sup> This delay is caused by the persisting challenges with regards to design and implementation driven by the following:<sup>12</sup>

- a) **Lack of Identifiability:** Currently, there is no information registry for porters both at the trekking agent or government level. As porters are hired on an ad-hoc basis without contracts and are paid in cash, record-keeping of porters by their employers is poor or non-existent. Similarly, no ID cards exist for porters like they do for guides (issued by the National Tourism Board). In cases where the recruitment responsibility is delegated to guides, trekking agents do not have any form of direct contact with the porters. It is important to note that while Nepal has the National Identification System and all porters are required to present this identity card to get recruited, it is not linked to any form of information about the card holder other than basic information such as name, age, place of birth etc.
- b) **Lack of Verifiability:** Given the lack of any form of information registry or documentation of porters in a consistent manner, verification of porter characteristics by trekking agents or any other body related to the industry is difficult. This is true for both observable and unobservable characteristics. For example, it is difficult to verify basic facts such as experience, training undertaken, etc. This can lead to difficulty in targeting beneficiaries for porter welfare programs. For example, a matched contributory social security program would ideally be directed to those who have been working in the industry for long and will continue to do so. In addition, it is

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<sup>11</sup> Interview with Trekking Agents and Porter Unions

<sup>12</sup> Interview with TAAN President, Mr. Ramesh Dhamala

difficult to verify ex-ante unobservable characteristics such as honesty, alcoholism, etc. which as we discuss below has important implications in the trekking industry.

### 3.2. Information Asymmetry and other Implications

#### **BOX 2: Relevant learning from academic literature on targeting welfare programs**

Accurately identifying intended recipients of safety net programs has been a challenge that is widely studied in the public policy literature. One of the biggest challenges to effective targeting in the developing world has been the absence of reliable income data, as majority of the poor work in the informal sector and hence lack verifiable income records. (Alatas, 2012) Basing program eligibility on imperfect information can lead to two types of errors: errors of inclusion whereby non-poor people are identified as poor and exclusion errors whereby poor people are identified as non-poor and hence ineligible for program benefits (Coady, 2004). For example, in Indonesia, it is estimated that in 2008, more than half of all households living below the poverty line did not receive any support from the Direct Cash Assistance program. (Alatas, 2012)

The issue of poor identifiability and verifiability not only poses a challenge in the design and implementation of social welfare programs using the Porter Welfare Fund, but it has also led to severe information asymmetry in the industry. This has grave consequences to many porters, particularly as it relates to the recruitment process and also for the industry as a whole. There is large information asymmetry in the hiring of porters, whereby the porter has more information about his abilities and qualities that are relevant for the industry but no mechanism to credibly signal this information. The parameters of a good porter are given in the Table 1.<sup>13</sup> The table also lays out issues faced by a trekking agent in the recruitment process while judging a porter on each parameter.

<b>Table 1</b>	
<b>Parameters of a good porter</b>	<b>Issues faced in recruitment</b>
Physical fitness	Partially Observable
Honesty/ discipline	Unobservable, Unverifiable
Number of years of experience	Unverifiable
Knowledge of: <ul style="list-style-type: none"> <li>- The trekking region and Nepal</li> <li>- High altitude trekking issues, precautions, safety measures, etc.</li> </ul>	Partially Observable, Partially Verifiable

<sup>13</sup> Interview with Trekking Agents

The parameters are currently only partially observable or unobservable and unverifiable. This is especially true for ‘honesty/ discipline’ which is considered to be the most crucial quality of a good porter.<sup>14</sup> We, therefore, see how a porter is unable to credibly signal such information whether it be related to his skills or character. The lack of quality based hiring can be consequential in an industry as precarious as trekking not just for the safety of the porters but also for that of trekkers.

In the absence of any industry agency or organization systematically maintaining information on porters or formulating a structured way to overcome these information asymmetries, the search costs of identifying a good, employable porter is high. Porters do their bit by traveling to the two locations of highest trekking agent density, Kathmandu and Pokhara, during each tourism season to increase their chances of finding a job. They attempt to signal their abilities and commitment to potential recruiters by making themselves available at the trekking agents’ office. Yet, as per our discussions with trekking agents, they do not recruit porters whom they do not know or know of through somebody and instead rely solely on their own networks.

### **3.2.1. Network from the Recruiters’ Perspective**

Given the information asymmetry and the high costs associated with overcoming it, each trekking agent relies on their network to reduce some of the information asymmetry. They look for family, friends or just people who belong to their own village to be porters (locational homophily). This increases the chances of both observing and verifying ‘honesty/ discipline’ or at least being able to use the relationship with the porter as a way to keep the porter in check. As discussed in literature on social networks, even in the absence of legal institutions, cooperative behavior is maintained by repeated game dynamics and social networks help to sustain such cooperation (Chandrasekhar, 2011). For example, in an informal financial market that a porter is part of, these are the same relationships that would allow one to engage in saving and borrowing activities. As a result, the reputation in employment can have a bearing on the reputation for borrowing or saving. This is in line with Beaman (2012) who suggests that in addition to the influence of social networks on labor market outcomes, individuals also rely on their networks in a variety of other contexts such as to improve risk sharing or to insure against idiosyncratic shocks, and there are likely spillovers from one context to another.

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<sup>14</sup> Interview with Trekking Agents

The trekking agent may also try to reduce the personal component (own time, reputation, etc.) of the search cost by outsourcing the function to guides or porter leaders (*naike*). This also increases the pool of porters available to them and in addition, increases the sense of responsibility in the guide or porter leader to manage and monitor porters whom they recruited themselves.<sup>15</sup> The trekking agent gives a lump sum amount to the guide who hires people he knows from his network or village and manages them during the trek. Unfortunately, this has increased the temptation for many guides and porter leaders to act opportunistically at the cost of the porters, as we will discuss later. Therefore, in summary, the trekking agent uses two kinds of networks to recruit porters:

- a. **Own Network:** A trekking agent hires individuals from his village so that he can hold the porter accountable in case of any mishaps.
- b. **Networks of Guides and Porter Leaders (*naike*):** Often, a trekking agent relies on a middle person for the hiring of porters in order to avoid the associated personal search costs in terms of time and money.

### 3.2. 2 Network from the Porter's Perspective:

Beginning from Rees (1966), literature on the role of social networks in the labor market cites information dissemination about available opportunities as one of the major reasons why it is important. In a traditional labor market, a job-seeker can find information about available vacancies through two sources: formal (newspaper advertisements, job boards, employment agencies etc) and informal networks of contacts (word of mouth).

The porter labor market is, however, unique in two ways: i) information flow happens only through informal channels i.e., networks and ii) frequency of job search is very high for a porter because on average, each trip lasts for 12 days, thus making the job seeking process costly and challenging. Given the importance of networks, it is important to understand the level of connectedness amongst porters and the mechanisms through which they receive their job offers. This is because exclusion from job contact networks can be particularly disadvantageous for porters in the tourism industry where referral hiring is common and information about jobs is hard to obtain otherwise (Caria, 2013). We will now discuss some of the characteristics of a porter's network:

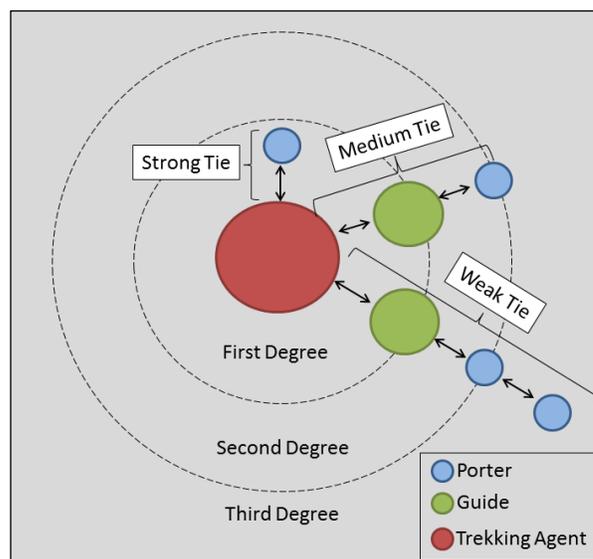
- a. **Network Density is Heterogeneous Across Porters and Sticky in Nature:** We define the strength of a porter's network based on their degree of separation from a trekking agent for .

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<sup>15</sup> Interview with Trekking Agents and Guides

their employment offers as is shown in Figure 16. In our data, 40 per cent porters said they rely on trekking agents for jobs (strong tie), 73 per cent on guides (medium tie), 39 per cent on other porters (weak tie), 10 per cent on retired porters (weak tie) and 1 per cent on others such as hotels (weak tie). At the same time, we see that network strength for a porter can be sticky and thereby, mobility across network strengths is limited. Our data shows that 90% of porters in Lukla and Pokhara have had no change in network strength between 2012 and 2014. Our focus group discussions revealed that porters who were getting trekking opportunities from guides or other porters i.e., porters with medium or weak ties, had no interaction at all with the related trekking agents. This could be a possible explanation as to why they don't graduate to stronger ties with greater experience.

**Figure 16: Network strength varies from weak to strong the closer one is to trekking agent**



- b. Network is a Significant Determinant of Total Number of Trips:** We find the coefficient of variation (CV)<sup>16</sup> (a measure of relative dispersion of data from the mean) of income across porters in 2014 to be 0.79, implying high heterogeneity amongst porter income. This difference is mostly driven by the variation in the number of trips and tips received (See Appendix 2). Note that this analysis does not include instances where a porter did not receive employment at all. We are unable to distinguish whether ‘no trips’ during a season was due to his inability to find a job or his preference to not work as a porter that season (here we assume the latter). If we were to include these instances, CV would increase further.

To understand the determinants of this variation in trips we run the following regression:

$$Total\ trips_i = \beta_0 + \beta_1 \log(network\_index_i) + \beta_2 received\_training_i + \beta_3 family\_generation_i + \beta_4 \log(age)_i + \beta_5 education_i + \beta_6 work\_experience_i + \beta_7 interview\_location + \epsilon_i$$

Results of the regression are given in Appendix 3. Here we present the most important insights.

<sup>16</sup> Coefficient of Variation =  $\frac{\text{Standard Deviation}}{\text{Mean}}$

- **Network:** Higher network strength or density is associated with a higher number of trips per year as hypothesized based on our discussions with porters, guides and trekking agents. It is possible that this result could be due to sorting amongst porters whereby those who are willing to work more get more trips and have higher network density. However, we know from our focus group discussions with porters that those with lower number of trips are willing to work more but were having difficulty finding employment opportunities, thus ruling out this possibility.
- **Interview Location:** Lukla as the interview location is significantly associated with a higher number of trips. This is not surprising given that Lukla's labor market functions completely differently from the rest of Nepal. Unlike in other trekking regions considered, recruitment of porters for treks starting in Lukla happens in Lukla itself because trekking agents want to avoid the flight expenses in transporting a porter from Kathmandu or Pokhara to Lukla. Because this region is not accessible easily, demand for available porters tends to be high given that the Everest region is the second most popular trekking region in Nepal.<sup>17</sup> Hence, being in Lukla is positively associated with the number of trips a porter gets.
- **Training:** We ran the above regression with and without Lukla. In the latter, we find that whether a porter has received training or not is associated with a higher number of trips, in addition to the network. This points to some sort of quality based recruitment, though, from what we know the porters receiving training are the ones connected to trekking agents (strong network). In addition, training programs remain highly inaccessible to the majority of porters due to the high costs and their availability only in major cities. This has important policy implications as will be discussed in Section 6.

Key emerging insight from this analysis is that having a strong network is significantly associated with having a higher number of trips during the year. No other quality measures such as education or experience in tourism are associated with the number of trips a porter receives except in the case of Rasuwa and Pokhara, where training has a strong association.

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<sup>17</sup> Ministry of Tourism, Culture and Civil Aviation, Government of Nepal. 2013. "Nepal Tourism Statistics-2012."

### **BOX 3: Relevant learning from academic literature on networks – rationale & impact**

Topa (2011), estimates that at least half of all jobs worldwide are typically found through informal contacts. Social network can play an important role in influencing labor market outcomes, such as by relaying information about job vacancy or providing referrals to the employer. According to Fafchamps and Moradi (2013), employee referral could have three possible benefits: to aid information gathering (employee referral should help the employer with making a judgment on whether a person's unobservable characteristics will contribute to or reduce productivity); to increase productivity of future employees (the current employee will exert peer pressure or motivate the new recruit to be productive); and to reduce search costs. Related to our topic is research by Montgomery (1991) and Munshi (2003) who both bring forth the idea that network hires address information asymmetries – employees have information about their network members which would be expensive for employers to collect, and so employers encourage the use of social connections in recruitment. Using colonial-era military recruitment data from Ghana, Fafchamps and Moradi (2013) do not find evidence that referred employees had more productive unobservable traits and suggest that the motive for using a referral system is lower search costs.

Munshi (2003) and Edin, Fredericksson and Aslund (2003) find a positive relationship between the number of network members and successful labor market outcomes in the US and Sweden, respectively. Montgomery (1991) provides an equilibrium analysis and shows that workers who are well connected i.e., possess social ties to those in high-paying jobs fare better than those who are poorly connected. Another important literature looks at the effects of networks in aggravating inequality. Calvo-Armengol and Jackson (2004) show that exclusion from referral networks can constitute a major disadvantage for labor market participants.

### **3.3. Consequences Arising from Network Hiring**

In general, social network is an additional channel for the flow of labor market information and there is evidence that referral based recruitment leads to lower search costs and better recruits as discussed in Box 3. In the porter labor market too, existence of networks as the only channel of recruitment has been effective in overcoming some of the high search costs, but there are negative consequences from this for the industry as a whole and for porters specifically:

- a. **Lack of Quality Based Recruitment:** Going back to the problems of lack of verifiability, good porters currently lack the platform to credibly signal their strengths and experience. This implies that there is a lack of quality based recruitment in the industry. This has real effects on the quality of services provided by the industry to trekkers especially during natural calamities when trekkers depend on trekking staff to guide them to safety. Yet, given their low training in basic safety skills

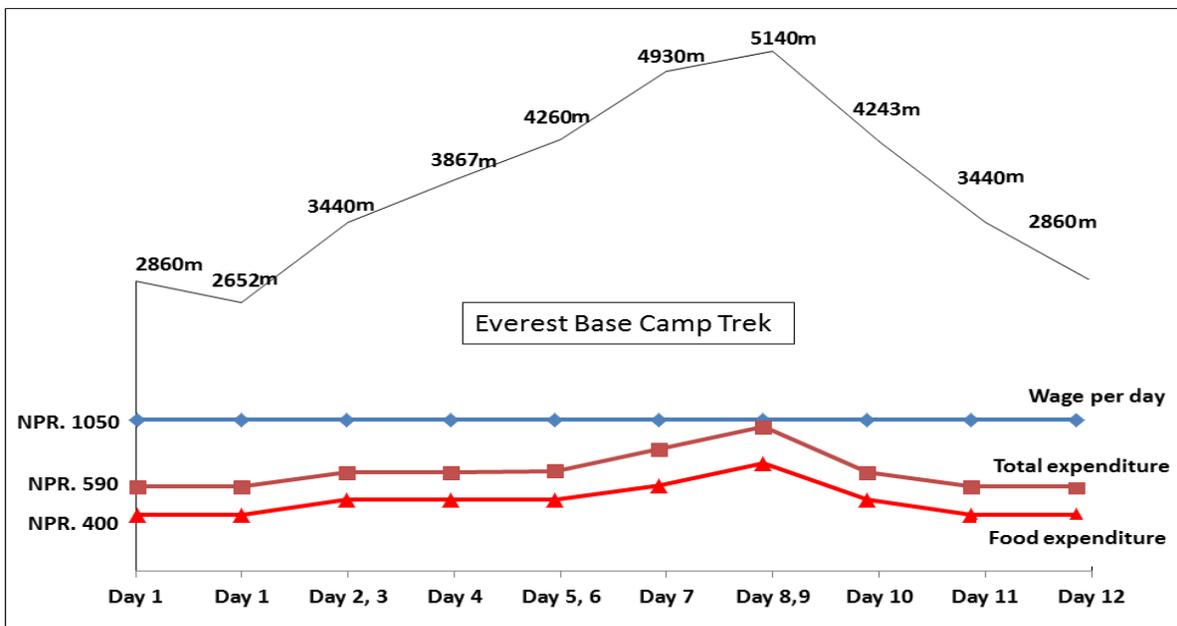
and lack of language skills, they are as helpless as the trekkers.<sup>18</sup> In an industry as precarious as trekking, it is absolutely necessary to have quality and skill based hiring.

b. **Rent seeking by guides/ porter leaders (*naikes*):** Guides and porter leaders often indulge in rent seeking and extractive activities with respect to porters by taking commissions to the tune of \$2-3 per day, and sometimes even more in return for being employed.<sup>19</sup> In addition, they hire a lower number of porters for a slightly higher wage payment to carry weight beyond the 30 kg<sup>20</sup> limit stipulated by TAAN, pocketing the remaining amount. This considerably increases his risk of injury that can have long term implications on a porter’s health, requiring him to retire very early.

**Table 2: Minimum wage by trekking region**

Daily wage (in \$)	Previous Wage	Current Wage
Annapurna and Langtang Region	8.5	11.5
Sagarmatha and Manaslu Region	9.5	12.5
Camping Treks	8.5 - 9.5	11.5- 12.5

**Figure 17: Expenses increase as one climbs higher up a trek leaving little to take home**



Losing a substantial amount of the wage to pay commissions to guides can greatly impact the welfare of porters who are already getting paid very little especially when compared to the costs incurred during treks. TAAN stipulates that trekking agencies pay a certain minimum wage to their porters as shown in Table 2. Porters generally have to incur the costs for their expenses on the trek. At other times, the agent pays for their expenses but pays them a lower wage than the minimum

<sup>18</sup> “Stop blaming the Nepali guides”, Al Jazeera, October 20<sup>th</sup>, 2014

<sup>19</sup> Porter Focus Group Discussions

<sup>20</sup> Interview with Porter Unions

wage in return. The exact costs vary by trekking regions and are difficult to ascertain. Figure 17 illustrates the expenses during the Everest Base Camp trek for a porter. As seen in the figure, expenses increase as they get closer to the base camp, leaving very little of their daily wages to take home. Food expenditure (red) in the chart is just the cost of two meals of basic rice, lentils and vegetables consumed by porters. The total expenditure (maroon) includes other expenses such as tea, breakfast and lodging. At the Base Camp (5140 m), costs can exceed the daily wage paid.

**c. Lack of Horizontal and Vertical Mobility for Porters:** As mentioned above, treks last on average for 12 days which means that porters need to keep looking for new trekking opportunities and trekking agents for porters. During busy seasons when a trekking agent is managing multiple treks at once, having access to a large number of available porters would be more efficient than relying on his network alone. Similarly, a porter currently does not have information about available opportunities outside of his limited network. In an industry that has 1600 trekking companies managing multiple treks during tourism seasons, horizontal mobility across trekking companies would be advantageous for both porters (in terms of insuring against risk of unemployment) and trekking agents (in terms of reducing search costs), especially on larger camp treks,<sup>21</sup> roughly estimated to be 35%<sup>22</sup> of all treks in Nepal.

Regarding upward mobility, due to the informality in the sector, NATHM requires each guide trainee to be recommended directly by a trekking agent. This implies that porters without a strong relationship with trekking agents are unable to move up the hierarchy of the trekking industry even if they are good. Box 4 summarizes the advantages of being a guide.

#### **BOX 4: Guides have substantial non-wage benefits vis-à-vis porters**

While the direct monetary benefit in terms of higher wages is relatively low from becoming a guide (an increase of \$1 per day), there are other benefits that make this transition highly coveted in the industry (Source: Focus Group Discussions):

- Guides are registered by the Nepal Tourism Board
- They do not have to carry heavy loads during the trek
- They are allowed to keep all the leftover money from the trek (for example, if a trek is cut short due to the trekkers being unable to make it to their destination)
- All expenses of guides during the trek are paid for by the trekking agent
- They have direct access to trekkers, and hence being the direct recipients of tips
- Directly in touch with trekking agents, who many times also make their jobs permanent

<sup>21</sup> These treks require, on average, 15-30 porters.

<sup>22</sup> Interview with Trekking Agents

### BOX 5: Problem Diagnosis & Implications

- A. Information Asymmetry is a consequence of lack of identifiability and verifiability, establishing which requires high search costs.
- B. Trekking Agents (employers) engage networks to overcome some of the high search costs. These networks reflect locational homophily in that their source is largely “own village/ district”.
- C. Porter network strength is positively associated with number of trips received in a year.
- D. Network strength is heterogeneous across porters and sticky at the porter level.
- E. Porters are usually stuck in low or high equilibriums wherein the more networked porters have a higher number of trips in a year and vice-versa.
- F. While network can be beneficial for improving labor markets, in the porter labor market the immense importance given to networks in recruitment can be detrimental:
  - a. Lack of quality based recruitment & rewards in the industry
  - b. Rent seeking by guides/ porter leaders (*naike*)
  - c. Lack of horizontal & vertical mobility for porters

## SECTION 4: THE SOLUTION- STAGE 1

### Overview of the Solution

In the previous section, we discussed that it is important to address issues related to the identification and verification of porters prior to considering the best programs the Porter Welfare Fund should be used for. At the same time, we understood the implications of this issue in areas of recruitment that can put the trekking industry in a low equilibrium. We, therefore, propose a two-stage solution that is guided by the following rationale:

- 1) First, solve the identification and verification problem, and the issues arising from it.
- 2) Second, once there is a database of porters, focus on designing welfare programs.

#### 4.1. The Porter's Referral Center

The Porter's Referral Center (PRC) will be a nodal agency for the industry's porter workforce that would work the following way:

- 1. Maintain information on porters** – The PRC will register and continuously maintain information on porters. Recorded information will include name, age, experience, location, contact information, health status etc. At the time of registration, porters will take a simple assessment test and will be categorized broadly into three categories by ability and knowledge of different trekking routes, altitude sickness, map-reading. This simple screening process will help decide what type of orientation or training should be provided to enhance their capabilities.
- 2. Provide referral services to porters based on collected information, thereby, promoting quality based hiring in the industry** – In response to requests placed by trekking agents, the PRC will provide a list of porters with their qualification details from which agents can recruit. This is especially important for porters who are less networked as they typically have a lower number of trips per year as we saw above. It is also useful for networked porters who may want to broaden their base of employers. At the end of each trek, trekkers and trekking agents will be asked to provide feedback on the porters which will be included in the porter's profile.
- 3. Promote and ensure fair practices in the employment of porters in the industry** – By keeping track of employment practices, including compensation, adherence to weight limits, etc., and by providing porters an avenue to record complaints, the PRC will promote fair

practices. PRC will also promote this by disseminating information to trekkers on fair practices, tips, etc. for porters.

4. **Provide a platform for provision of other services** – PRC will include a clothing and equipment bank from where registered porters can borrow clothes and equipment at a nominal fee. PRC will eventually facilitate the design and implementation of welfare programs for porters including training, financial products, social security, etc. which will be discussed in detail in stage 2.

The functioning of the PRC will be as depicted in Figure 18.

**Figure 18: PRC- a nodal agency for the industry’s porter workforce**



#### **BOX 6: Relevant learning from academic literature on credible signaling & referral systems**

Information asymmetry in the labor market poses a challenge on signaling worker productivity. There can be a lemons problem in the labor market due to asymmetric information. For example, because of large variation in the quality of services provided by vocational schools, a study shows that employers were hesitant to hire graduates of vocational schools in Egypt (van Eekelen, de Luca, and Ismail, 2001).

The role of a credible referral system is an area that has garnered attention in labor economics. Pallais (2011) conducted a random experiment in an online freelance labor marketplace called oDesk. She provided jobs to a group of available workers, of whom a subset got reviews on the quality of their work. She then kept track of the occupation rates and reservation wages of these workers and found out that while having a first experience served as a good signal, those with good quality reviews performed better than others, both in terms of work opportunities and reservation wages. This confirms that improving signaling via reviews can be an effective labor market intervention.

## 4.2. Technical Correctness, Political Supportability and Administrative Feasibility

**4.2.1. Technical Correctness:** We will now look at technical correctness from the point of view of porters, trekking agents and TAAN/ MOTCCA.

**Porters:** From the perspective of porters, this is immensely useful given all the issues outlined above. Some of the benefits are the following:

- Reduce unemployment spells and increases chances of getting employed from outside one's own network.
- Porters would get the minimum wage in its entirety as opposed to the current situation when a chunk of it is eaten up by extractive guides or porter leaders (*naike*).
- A platform to voice complaints in case they are mistreated during a trek.
- Access to welfare and employment enhancing services such as porter training, referral for guide training, etc.

**Trekking Agents:** Through the PRC, trekking agents will be able to overcome the large search costs involved in finding porters. The PRC will act as a public good provider by incurring these costs on behalf of the trekking agents. They will benefit in the following manner and at a low cost (\$25 per year, see budget in Section 5 for more details):

- Larger pool of porters to choose from with accurate and verified information available for each of them.
- Availability of porters even during festivals, e.g., Dashain (end-September and early-October) when it is usually difficult to find porters.<sup>23</sup>
- Easy access to porter pool in the Everest region (Lukla) where agents typically find it difficult to work in currently due to the difficulty in tapping into the right networks.<sup>24</sup>
- Access to more information on porters from their previous employers.
- Better reputation with trekkers for following 'fair employment' practices.

**TAAN and MOTCCA:** PRC would ensure that porters are receiving the minimum wages stipulated by TAAN which it currently finds difficult to monitor and enforce. One of TAAN's other

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<sup>23</sup> Interview with Trekking Agents

<sup>24</sup> *ibid*

biggest struggles is to provide benefits for porters because they have no way of identifying or verifying porters as there is a lot of flux in this profession, with many porters remaining in this industry only for a couple of years. As mentioned earlier, records of porters are non-existent. Therefore, the database which we would use to collect the information of porters when they register and get hired would serve as an incredibly helpful platform to help TAAN target porters and provide them with assistance such as training, insurance, etc.

**4.2.2. Administrative Feasibility:** The PRC is very closely modeled around the Trekking Information Management System (TIMS) centers (which registers and collects royalty fees from trekkers) that are a huge success in Nepal. TIMS became operational on January 1, 2008 and is managed by Nepal Tourism Board (NTB) and TAAN on behalf of MOTCCA. Currently, there is a record of all trekkers who come to Nepal every season due to the existence of TIMS Centers around Nepal. This is immensely helpful especially during rescue operations carried out during natural calamities, such as the Everest avalanche and the Annapurna blizzard in 2014. The TIMS offices are located locally in the main trekking regions – Pokhara, Lukla and Kathmandu. TIMS prescribes different fees for 14 different trekking regions (See Appendix 4).

The PRC, therefore, has an existing solution to model itself on which makes it administratively feasible. Yet, there are components that are different from the TIMS centers for which we propose setting up a special unit for implementation of PRC (see Section 5). In addition, we plan to adopt a phased implementation schedule that will enable an organic adaptation of the system to the PRC and vice-versa.

#### **4.2.3. Political Supportability:**

**Support:** As can be seen here, the three key stakeholders for political supportability strongly support this idea.

- 1. Porter Union:** Having spoken to the Porter Unions in Dhunche (Rasuwa district) and Pokhara (Kaski district), we realize that this is an idea that they had been trying to implement themselves. A previous attempt to have something similar to a referral center had been a failure in Kathmandu because the individual in charge was simply acting as a replacement to an extractive guide or porter leader by taking high commissions from porters in exchange for trip offers instead of addressing this problem. Porter Unions find such a system beneficial as it

ensures the right pay for porters and moreover, creates a way to keep track of all porters across the country and they showed the a willingness to contribute to the functioning of PRC. For example, Hari Thapa from Pokhara, who is the Chairman of the Porter's Union associated with the Maoists, said that he can help encourage the 400 porter members of his Union to register with the PRC. In this way, if PRC can succeed in getting all Porter Unions on board with this idea, they can be instrumental in raising awareness about the center.

2. **TAAN:** TAAN has already expressed support for this initiative as it has also been trying to reduce information asymmetry and informality in the industry. To use the PWF on welfare programs, it is important to ensure that the targeting system is efficient but without being able to identify and verify who the real porters are (i.e., those who have been working in the industry for a few years), it is hard to implement such programs. The President of TAAN, Mr. Ramesh Dhamala, has expressed support for this program and is willing to pass it through TAAN's Board in order to formalize it.
3. **MOTCCA:** MOTCCA faced a lot of negative feedback during the recent Annapurna blizzard that killed 39 individuals including porters. While it was easy to identify the missing trekkers and guides because of TIMS database, it was challenging to identify porters as they are not registered in a systematic manner. It is, therefore, hoped that the PRC will be a welcome intervention particularly since TAAN is pushing for it too.

**Both Support and Opposition:** Now we will explore stakeholders from whom we received mixed feedback.

1. **Trekking Agents:** We received mixed feedback from Trekking Agents regarding whether they would or would not be supportive of PRC. In their opinion, while PRC would be useful for recruitment from relatively inaccessible places such as Lukla and during festivals, they expressed some opposition to the idea of recruiting porters who are outside their own networks and who they don't have working relationships with. Recognizing this, we will ensure that in the new system a porter who engages in illicit activities will get rated down or even blacklisted. This makes his future opportunities through this system bleak.

**Opposition:** We recognize that PRC will face opposition from stakeholders who gain in the current system.

**1. Guides and Porter Leaders:** The biggest opposition can come from guides and porter leaders. There are two types of guides and porter leaders. The first are the good, fair ones who ensure that their porters are well-treated and compensated fairly. The second are extractive who take advantage of the informality and information asymmetry in the trekking industry and engage in extractive behavior such as not paying porters fully and mistreating them during treks. We expect the responses to vary by these categories.

- **Non-extractive Guides:** Guides can have a preference for working with people they know whether it is people from their villages or those they have worked with in the past. This is also in line with empirical evidence by Bandiera et al (2011) who show that working in teams with friends gives workers more utility and reduces the incentives to free ride. Similarly, in an earlier paper, they find that workers are better able to cooperate when their teammates are friends. With this in mind, the PRC will allow for repeat hiring of the same porters as long as it is not at the cost of some other porters who are unable to find any work.
- **Extractive Guides:** Extractive guides may firmly oppose this idea because it would reduce their chances of extracting rent from porters. They may exert pressure on trekking agents to not hire from the PRC, but the following strategy can help counter or mitigate this issue:
  - Informing trekkers on porters' basic rights, income, etc. so that they can act as a counter-veiling force during the trek.
  - Through promotion of 'fair employment' practices and thereby, allowing trekkers to choose only those trekking agents who meet this criteria.

### **4.3. Alternates to PRC that were considered but are not recommended**

Note that these are institutional alternatives rather than alternatives to the mandate (4 points listed above in Section 4.1).

#### **4.3.1. Porter Unions to fulfil the mandate of PRCs**

Currently there exist three Porter Unions in Nepal, each affiliated with one of the three major political parties. One way of identifying and verifying experiences of porters could be by asking Porter Unions for a list of their member porters and asking them how long the porters have been members with them. There are, however, a number of risks associated with this. Porter Unions are political by affiliation and this could lead to over-politicization of this process. They are, usually,

involved in pushing for big changes in the industry such as increasing minimum wages or compensation for porters in case of accidents but are not involved in administrative activities such as those detailed under the PRC mandate. They don't maintain updated lists of porters in a systematic way<sup>25</sup> with the same level of information the PRC would. Moreover, even if they were involved in the task of identifying and verifying porters, it is important to consider the associated risks, particularly as it relates to elite capture and how the better connected porters would benefit disproportionately from any program that would be designed as part of the PWF. At the same time, it does not overcome the issue of information asymmetry.

#### **4.3.2. Trekking Agents to fulfill the mandate of PRCs**

NATHM currently relies on recommendations given by trekking agents to select porters who qualify for the guide training program. One could propose a similar way of identifying porters to be beneficiaries of programs designed using the Porter Welfare Fund. However, it is important to note, as we did earlier, that not all porters are connected to trekking agents (in our sample, only 39 per cent of porters were directly affiliated with trekking agents). Hence, there would be a risk of the problem getting perpetuated if the porters directly connected to trekking agents are the ones receiving not just recommendations for guide trainings but also for other social welfare programs targeted towards porters.

#### **4.3.3. Add PRC's mandate to Tourism Information Management Systems (TIMS)**

As mentioned earlier, TIMS has been doing a very good job of keeping track of trekkers in Nepal. However, information on porters is not included in it in a systematic and meaningful way i.e., their names may sometimes be included but no additional information is. TIMS could be extended to include information on porters similar to the way information on trekkers and guides are recorded. This is, however, challenging for several reasons. While it could help with the identification of porters like it has helped in the case of trekkers and guides when they go on treks, it would not be able to undertake other functions such as verification of experience, health status, referral, etc. In addition, TAAN is not in favor of adding any more components to TIMS as it would strain their resources beyond what is manageable.

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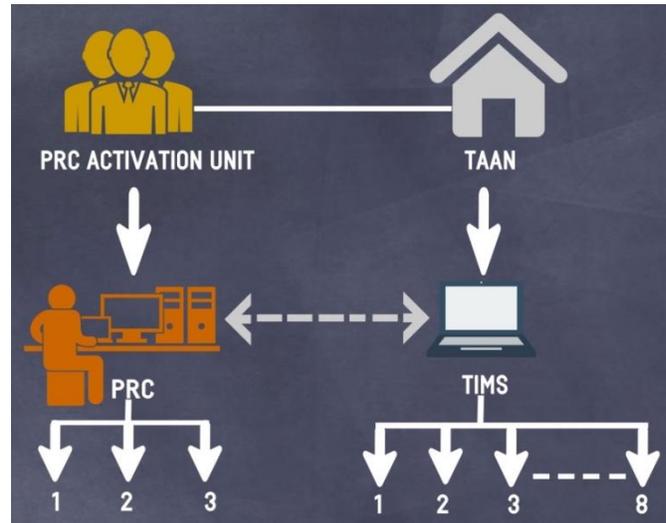
<sup>25</sup> Porter Unions currently operate informally and via word-of-mouth. For example, to help us get in touch with porters we could interview in Pokhara, the Union leader called up two porters and asked him to call up a few others. He also took us to a nearby tea stall near a bus stop that was frequented by porters.

## SECTION 5: IMPLEMENTATION PLAN

### 5.1. Organizational Structure

Figure 19 alongside shows the organizational chart for the implementation of PRCs. PRCs will be centrally managed through a centralized information database but we will have regional PRCs in the major cities of Pokhara and Lukla for easy access to the porters in these regions. Wherever feasible, the PRCs will be located alongside TIMS offices for ease of access to trekkers, agents, guides, porters and administrative staff from TAAN. Just like the TIMS centers, the PRCs will also fit under TAAN's organizational umbrella. This ensures operational streamlining of the system and at the same time ensures that all these different functional units work with the same objective and vision.

**Figure 19: PAU will overlook implementation of PRC**



**PRC Activation Unit (PAU):** To provide organizational focus and to iteratively develop the solution, we propose setting up PAU. This will comprise of the President of TAAN, 1-2 members of TAAN, 1-2 members from MOTCCA, members from 3-4 Porter Unions, 2-3 most prominent travel agencies who support this intervention and 1-2 expert consultants.

#### **BOX 7: PAU will comprise of authorizer, motivator, convener, funder, information providers and ideas people**

Following Andrews (2013) <sup>1</sup>we identify each of these agents by the following roles they will play in the team.

**Formal Authorizer and Motivator:** TAAN and MOTCCA is the motivator and formal authorizer for the project. The TAAN President has agreed to push this proposal through their Board in order to convert this into a formal policy.

**Convener:** The TAAN President will be the convener of this team, given his influence over trekking agents, porter unions and MOTCCA's policy formulation.

**Resource provider/ funder:** TAAN will contribute to a part of the overall funding requirements for the PRC itself. The remaining funding will come from other sources such as USAID and World Bank.

**Information providers, problem identifiers and communicators:** The expert consultants along with the porters unions and travel agencies will be the key problem identifiers and communicators.

**Ideas people:** Each member will be responsible for idea formation and they will be chosen based on discussions.

## 5.2. Program Outline:

Here we detail the roll-out plan for Stage 1 of PRC. We divide up the roll-out into two phases – the pilot and scale up.

### PHASE 1: The Pilot (2015-16)

In this phase, the PAU will pilot the idea in Kathmandu. We choose this location due to its centrality in the current system as majority of trekking agents is located here making it an attractive location for porters to migrate to during on-season. At the same time, being in the capital city makes it more accessible to TAAN, Ministry Officials, PAU, technology implementers, and others. The key activities of a PRC will be:

**Figure 20: PRC will carry on 8 key activities**



- 1. Marketing and publicity of PRCs and its role within the industry:** It is very important to focus on marketing and publicity of PRC services, particularly in the initial stages, to convince porters and trekking agents to start using it to ensure that the trekking industry is pushed to a new equilibrium. The publicity will also include broadcasting other incentives such as social welfare programs that the PRC will offer to porters who are associated with it for multiple seasons. This would encourage more porters to join the center and work with it continuously. Publicity posters will be made available through all Porter Unions, at on-season residential locations for porters in Kathmandu, and other local government offices. Similarly, TAAN has a mailing list of all registered trekking agents, making it possible to reach out to them easily.
- 2. Registration of porters and issuance of unique IDs:** This will require setting up a centralized registration system that also allows registration and provision of unique IDs in a dispersed manner once the program is scaled up. A porter will be free to register at any of the PRCs only once but he will need to activate his membership every season. Registrations will be made only upon producing a government issued Nepali Citizenship Card. Multiple registrations will be prevented by linking the registration number to the person's Citizenship Number.
- 3. Verification and grading of porters:** Every porter will either be a direct registrant or an agent registrant. Agent registrants come with recommendations from companies they work with that will help verify their abilities and expertise. On the other hand, direct registrants typically have

no such affiliations. Our discussion with trekking agents and experts<sup>26</sup> revealed that it is possible to design quizzes and interviews that will reveal whether a porter has actually trekked in a certain region or not. This will be used to design quizzes that help verify information provided by porters. In a later phase, it will also be interesting to look at psychometric tests that reveal softer skills such as honesty, friendliness of a porter. In addition, all porters will have to take an interview that will classify them into one of the three categories: Basic, Intermediate and Advanced. These classifications will reflect their experience and knowledge in the profession. At a later stage, a health clinic will test and affirm their fitness levels too.

4. **Provision of orientation sessions to porters:** The PRC will provide orientation sessions to porters on basic mannerisms, hygiene, safety, etc. when going on treks.
5. **Referral of porters to agencies:** Agencies will contact PRCs whenever they need porters. The PRC will provide porters from the available pool.
6. **Equipment and Clothing Bank for Registered Porters:** Nepal's porters are inadequately equipped.<sup>27</sup> This is an issue that was raised by many porters and trekking agents that we spoke with. As a result, the likelihood of getting injured is high among them. The PRC can use the PWF on investments in proper equipment and clothes that can be borrowed by porters when they go on treks at a minimal rental rate that will be used for the maintenance of the equipment.
7. **Ombudsman to the porters, trekkers and agencies:** After each trek, the trekkers and agencies will be invited to provide feedback on the porters that were referred to them. This will be recorded against each porter for future reference. At the same time, porters will be given the option of filing complaints regarding any untoward incidents that may have occurred on the trip.
8. **Rich source of information on porters for other programs:** PRCs will be a rich source of information on porters which will be useful not just when selecting them for training and savings programs, but also when a natural calamity strikes and they need to be tracked.

#### **Evaluation Timeline:**

In the course of implementation (pilot & scale-up), it is also important to conduct evaluations periodically. This will help in course correction before it gets late and the program moves into a direction that is not desirable. We propose a bi-annual evaluation cycle during the pilot phase:

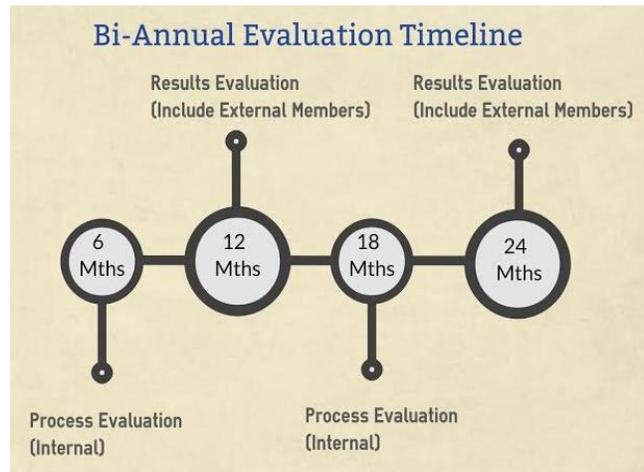
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<sup>26</sup> NATGEO Adventurer Pemba Gyalje Sherpa

<sup>27</sup> "Nepalese Porters Found Frozen in Flip Flops and Trainers". The Telegraph, 20<sup>th</sup> October 2014.

**Process Evaluation** – After the completion of season 1 in the first and second years, the evaluation should focus on whether the implementation features that were designed are being implemented correctly or not and how they can be improved. It is very common to have field staff implement program features differently from what was planned due to the lack of understanding or due to the conditions they face during implementation, and it is important to incorporate them into the plan for season 2. This will be an internal review by the PAU.

**Figure 21: Bi-annual evaluation cycles to comprise of process and results evaluation**

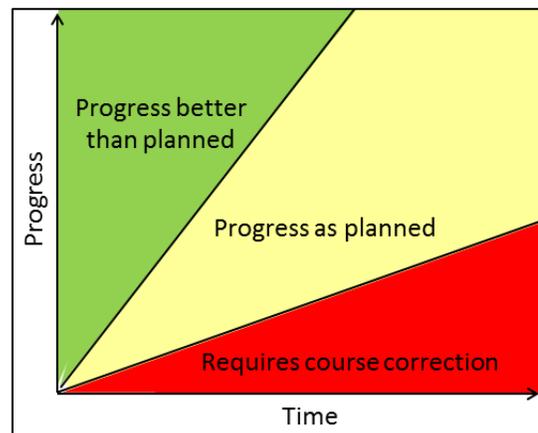


**Results Evaluation** – After the completion of season 2 in the first and second years, there is more data available to help evaluate the success of the program in terms of fulfilling its goals. These reviews will include PAU and staff from key stakeholders including donors, trekking agents, porter union leaders, and so on.

**Monitoring Data** - In the pilot phase the success of the organization should be measured in terms of number of porters enrolled, % of trekking agents recruiting porters from the PRC, quality of the information maintained at the PRC, quality of the registration & referral processes, quality of marketing activities, etc.

**Course Correction Points:** Once implementation starts, it is important to keep track of the progress. It is important to define the range of progress within which it can be graded. Through discussions, the PAU should create a progress tracker similar to that in Figure 22 and take corrective actions as needed.

**Figure 22: Course Correction Points**



**Risks & Risk-Mitigation:** When running the pilot & scale-up, one needs to keep in mind the various risks that might arise. Following is a list of some of the risks we pre-empt, the potential causes and corresponding actions to mitigate them (especially important for pilot):

**Table 3: Risks, Potential Causes and Action**

<b>Risk</b>	<b>Potential causes</b>	<b>Action</b>
<b>Lack of registrations by porters</b>	<ol style="list-style-type: none"> <li>1. Lack of knowledge.</li> <li>2. Lack of trust on the system.</li> <li>3. Fear of loss of existing agent contacts.</li> </ol>	<ol style="list-style-type: none"> <li>1. Facilitate greater publicity in porter residential/ waiting locations and close to existing trekking agent locations (e.g., Thamel).</li> <li>2. Endorsement by TAAN and MOTCCA.</li> <li>3. Provide choice of turning down offer if porter already has work from existing agent contacts.</li> <li>4. Incentivize registration through provision of welfare programs in later years if registered in PRCs.</li> </ol>
<b>Lack of demand from agencies</b>	<ol style="list-style-type: none"> <li>1. Lack of trust for porters who will be referred as they come from outside their own network.</li> </ol>	<ol style="list-style-type: none"> <li>1. Providing a list of porters with verified information (and reviews in later years) will help mitigate the lack of trust.</li> <li>2. In addition, endorsement by TAAN/ MOTCCA will add credibility to the centers.</li> </ol>
<b>Lack of verifiability</b>	<ol style="list-style-type: none"> <li>1. Lack of records on previous employment.</li> <li>2. Lack of previous employment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Verification through 2-3 previous employers. (agents/ guides)</li> <li>2. Quiz conducted at time of registration.</li> </ol>
<b>Inefficient/ ineffective matching or technology system</b>	<ol style="list-style-type: none"> <li>1. Incorrect algorithm.</li> <li>2. Slow technology system.</li> </ol>	<ol style="list-style-type: none"> <li>1. Continuous testing of algorithm to reflect all possibilities.</li> <li>2. Explore technology vendors that provide instant support.</li> </ol>
<b>Double registration by porters</b>	<ol style="list-style-type: none"> <li>1. To gain more employment.</li> </ol>	<ol style="list-style-type: none"> <li>1. Provision of unique porter IDs that are linked to Citizenship Cards and centrally maintained.</li> </ol>

**PHASE 2: The Scale-up (2017-20)**

Once we have piloted the program for two years in Kathmandu, we will be in a better position to expand this to other regions. The second phase involves scaling up the initiative to the other two locations – Pokhara and Lukla. Some of the pre-requisites for scale-up are – a clear sense of the features of PRC and having in place the appropriate technology and resources for registration & referral.

An important question to consider during scale-up is: **Should registration/ participation in PRC be made mandatory or voluntary for trekking agents?**

We understand that making this initiative a success requires the critical mass of porters and trekking agents on board with the PRC. While it will be relatively easier to bring porters on board given that they are the main losers in the current system, convincing trekking agents might be tougher. Two of the clearest incentives for trekking agents will be the availability of trained porters for which they currently spend their own resources and the 'fair employer' brand that PRC will promote amongst trekkers.

While TAAN has substantial influence and hence it might be possible to make PRC mandatory for all trekking agents, this path could substantially disrupt the status quo. This is because trekking agents have a long history of hiring porters from their villages and networks. Completely moving out of this system will be hugely stressful not just for the trekking agents but also for the PRC which will be learning and redesigning itself through iterations. Hence, in the initial phase (seasons 1 and 2 of year 1), it might be the case that firms use PRC only for areas such as the Everest (24% of trekking in Nepal) where they locally hire porters and once they see the ease of using PRC, they will start using it for other areas as well. We, therefore, propose making registration to PRC voluntary for all trekking agents.

### 5.3 Annual Budget (2015-20):

The budget has been built with inputs from TAAN. As can be seen below, the start-up cost is about \$14,000 to be incurred in the first year and subsequently on publicity. Publicity is expected to provide the ‘big push’ the industry needs to transition into the better industry equilibrium recommended here. With 1200 trekking agents registered with TAAN, the budget is equivalent to charging each of them \$25 per year on average.

Particulars	Cost per unit	No. of units	Frequency	Total Cost					
<b>START-UP COST</b>				\$ 14,000	\$ 2,200	\$ 2,420	\$ 2,662	\$ 2,928	\$ 3,221
Technology set-up	\$ 6,000	1	1	\$ 6,000					
Registration of organization	\$ 1,000	1	1	\$ 1,000					
Publicity Budget	\$ 1,000	1	2	\$ 2,000	\$ 2,200	\$ 2,420	\$ 2,662	\$ 2,928	\$ 3,221
Office space and other fixed costs (computers + furniture)				\$ 5,000					
<b>OPERATIONAL COSTS</b>				\$ 11,200	\$ 12,320	\$ 25,052	\$ 27,557	\$ 30,313	\$ 33,344
<b>Central PRC in Kathmandu</b>				\$ 11,200	\$ 12,320	\$ 13,552	\$ 14,907	\$ 16,398	\$ 18,038
Staffing				\$ 5,100					
Director	\$ 250	1	12	\$ 3,000					
General + Finance Manager	\$ 150	1	5	\$ 750					
Health Manager	\$ 150	1	3	\$ 450					
Office Assistant	\$ 75	1	12	\$ 900					
Rent	\$ 250	1	12	\$ 3,000					
Utilities	\$ 200	1	12	\$ 2,400					
Software maintenance	\$ 200	1	1	\$ 200					
Miscellaneous	\$ 500	1	1	\$ 500					
<b>2 Regional PRCs (Scale-up in 2017) in Pokhara &amp; Lukla</b>						\$ 11,500	\$ 12,650	\$ 13,915	\$ 15,307
Staffing						\$ 2,500			
Manager	\$ 125	2	5			\$ 1,250			
Health Manager	\$ 125	2	3			\$ 750			
Office Assistant	\$ 50	2	5			\$ 500			
Rent	\$ 200	2	12			\$ 4,800			
Utilities	\$ 150	2	12			\$ 3,600			
Software Install/ maintenance	\$ 150	2	2			\$ 600			
<b>Monitoring &amp; Evaluation (Approx. \$500 per PRC per year)</b>	\$ 750	1	1	\$ 750	\$ 825	\$ 2,408	\$ 2,648	\$ 2,913	\$ 3,204
<b>TOTAL</b>				\$ 25,950	\$ 15,345	\$ 29,880	\$ 32,867	\$ 36,154	\$ 39,770

## SECTION 6: THE SOLUTION- STAGE 2

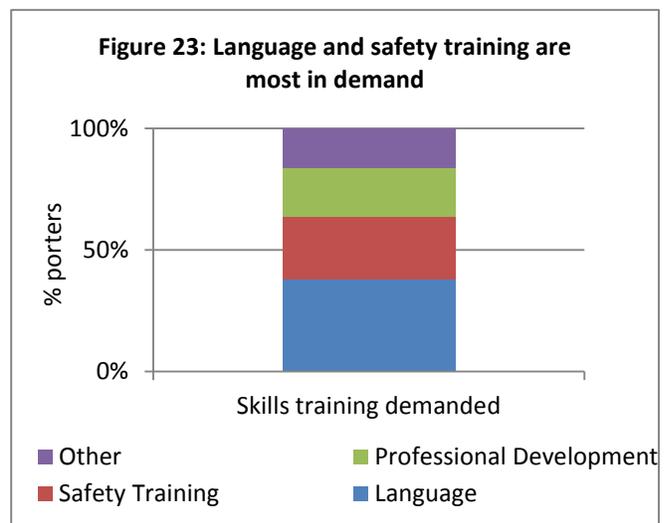
The second stage of the solution will focus on how best to use the PWF once a reliable database is established.

### Designing Welfare Programs for Porters

We envision PRC as a stepping-stone towards other more complex policy interventions. This is because it is uniquely positioned to address not just identification and verification issues, but also to consistently collect information on demographic and socio-economic status of porters.

#### 6.1. Program Type 1: Promoting upward mobility:

Given the high level of risk involved in trekking, a well-qualified porter with the right skills can be a big asset to the trekking group. His knowledge of first aid, altitude sickness prevention and map-reading skills is important not only for his safety but also for the safety of the trekkers he is accompanying. Yet, only 10% of porters in our sample reported having received some form of training. On the other hand, according to our survey close to 95% reported that they are interested in taking training in Language, Safety and Professional Development, and that they were willing to pay for it.



Yet, the biggest impediment to accessing such training programs is the high cost of acquiring them as they are provided only in the cities where lodging and food costs are extremely high. Moreover, as majority of porters are farmers, they are unable to leave their farming activities for prolonged periods of time.

We, therefore, propose two forms of training: 1) Porter Training which includes Language, Professional Development, First-Aid and so on that would enable a porter to be better at his job, and, 2) Guide Trainings which would allow the good porters to climb the professional ladder and transition to a Guide.

**Porter Training:** As mentioned earlier, every porter will be graded into three categories by their knowledge and abilities at the PRC. Providing porter training is expected to push those in the lower categories up. At the same time, this training increases their ability to interact directly with trekkers which increases their likelihood of direct payment of tips. Given that porters are unable to attend trainings in cities, we propose a roving model wherein 2-3 instructors move from one region to the other.

Porter training programs will also help porters gradually improve their knowledge and abilities such that they are better prepared for the guide training program. There are many guides who took the guide exams and have licenses, but are not able to manage treks like a guide is supposed to due to lack of language, leadership skills and so on.<sup>28</sup> This intermediate training system for porters will therefore help them improve their language and other skills before making the jump in the trekking hierarchy. At the same time, with such certifications provided to porters and with records of the same at PRC, the industry will move towards merit-based referral system for eligibility in the guide training program.

It is important to note that a roving model might not be suitable for certain types of training that are more specialized. For example, language courses other than English are not in high demand but it is important to have mountain workers speak this language. In 2012, trekkers from China, France, Germany and Korea made up 5%, 9%, 9% and 4.5% of the total trekkers,<sup>29</sup> thus suggesting a demand for these languages. In such cases, instead of using a roving model, we suggest providing training allowance for porters to take this language in major cities like Kathmandu or Pokhara.

**Guide Training:** In order to become a guide, porters or assistant guides have to take the guide license exam after a five week training program provided by NATHM. As shown in Box 3 in Section 3, there are various benefits that make this a very coveted transition.

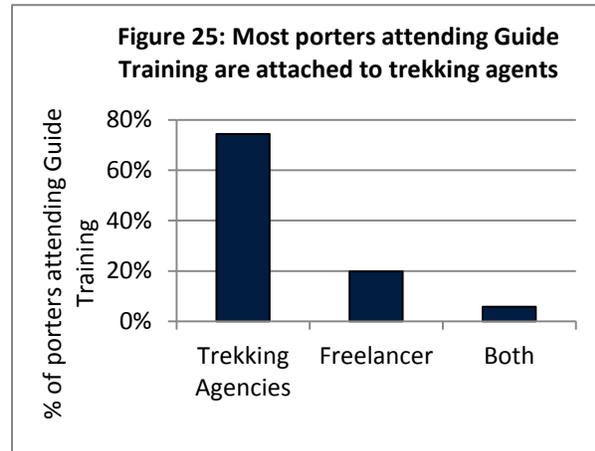
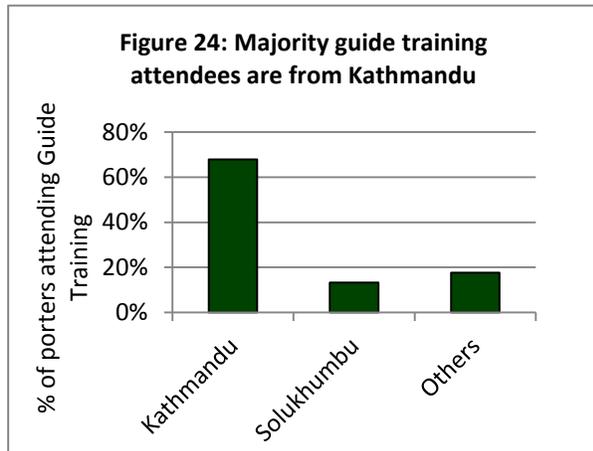
Similar to the porter training, we propose a roving system of implementation in order to reduce the pressure on porters who are already financially strained. In our sample of 495 porters during the guide training program in 2014 at NATHM, more than 70 per cent were from Kathmandu and attached to trekking agencies. This implies a bias towards city-based and better networked porters for receiving the guide training program. Given the richness of data that will be available at the PRC,

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<sup>28</sup> Focus Group Discussion with Guides

<sup>29</sup> Government of Nepal. 2013. "Nepal Tourism Statistics-2012."

NATHM will find it easier to select porters for the training program, thereby, reducing their current reliance on trekking agents to recommend porters for the program. Guide training could then become the logical transition for the highest graded porters.



### 6.1.1. Political Supportability:

The training program is expected to be highly supportable by all stakeholders including TAAN/MOTCCA, Porter Unions, trekking agents and guides. There is unanimous agreement on the importance of having well-trained porters because in addition to provision of safer and more enriched treks, it also improves the image of the trekking industry in Nepal.

### 6.1.2. Administrative Feasibility:

Administrative feasibility of this program needs to be judged on three elements: a) the availability of course material and qualified instructors b) the ability to provide the program in the roving model proposed and c) the potential take-up by porters.

First, the current guide training program provided by NATHM has many components that are common to the Porter Training module being proposed here. This 5 week program trains close to 900 guides per year in Kathmandu and Pokhara. Hence, the material for the training of porters can largely draw on the existing curriculum for Guide Training and tailored to the specific needs and education levels of porters.

Second, NATHM has already agreed to extend their existing training program to other regions in Nepal through a roving model as long as the costs are covered and the timing of the training does

not overlap with the existing guide training program which is a higher priority for NATHM. According to them, as long as there is a minimum of 30 porters registered for each training session they will be able to provide it.

Third, in spite of the fact that the proposed program will be roving in nature, the program might be unaffordable to porters. As per our survey, most porters are willing to pay upto \$10 for a week-long program. The Porter Welfare Fund will be used to cover a portion of the cost that is unaffordable to porters.

## **6.2. Program Type 2: Contributory Pension with Emergency Withdrawal Properties**

Lifetime consumption risk for mountain porters is high given the precarious nature of the job. The idiosyncratic risks that porters are exposed to during trips through injuries or poor health after being prone to sicknesses such as altitude sickness, hypothermia and frostbite can shorten their climbing career. Owing to these risks, TAAN is strongly interested in using the PWF for social security for porters who have worked in the industry for a certain number of years and are retiring. Though by social security, TAAN means a non-contributory, one time hand out of cash. While the PRC would help address the identification and verification issue a few years into its operation, we do not believe that a one-time retirement grant is the most sustainable way to think about overall welfare of a retired porter.

Instead, we recommend a contributory pension product with emergency short-term withdrawal properties. The contributions of porters will be matched annually by a fixed contribution from the PWF provided porters meet the minimum contribution requirement. A much more detailed analysis will need to be performed to think of the various design features of the program which is out of the scope of this project. However, there are lessons to learn from the current international experience of contributory pension for the informal sector, which we largely draw from the National Pension Scheme Lite (NPS Lite)<sup>30</sup> program in India that offers pension products to informal workers:

- **Monetary incentives to encourage participation** by matching deposits upto a certain amount and upto a certain number of times.
- **NPS Lite prescribes no minimum threshold of contribution** although a porter must meet a minimum threshold to be eligible for matching contribution from PWF.

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<sup>30</sup> [http://www.microsave.net/files/pdf/Securing\\_the\\_Silent\\_Vol\\_III\\_MicroSave.pdf](http://www.microsave.net/files/pdf/Securing_the_Silent_Vol_III_MicroSave.pdf)

- **Flexibility in periodicity of contributions** to allow for seasonality in trekking income.
- **Financial literacy** will be a key feature of the product as it would increase up-take. This will also facilitate porters to broaden their planning horizon from day-to-day to longer term financial management.

Given the precarious nature of this profession, we consider two additional features:

- If porters injure themselves and get disabled<sup>31</sup>, they will receive a non-contributory grant from the welfare fund on a periodic basis for a fixed period of time.
- If porters are caught in injuries during treks that claim their lives, the families would receive compensation from the fund including the savings of the demised porter. Currently, families receive a one-time fund, but under the new system, we propose lower amount of funds distributed multiple times a year.

#### **6.2.1. Political Supportability:**

Though there is general agreement and support for a social security program for porters from Porter Unions and TAAN/ MOTCCA, there might be initial resistance to the product given that such a product does not exist in Nepal. This is true especially for TAAN, as administrative costs tend to be higher for implementation of this recommendation.

#### **6.2.2. Administrative Feasibility:**

Currently, Nepal has no form of contributory pension product. The only social security product is an old age allowance wherein individuals over the age of 70 years are provided with \$5 a month. As a result, this will lead to substantial difficulties in implementation especially given the low capacity and little political stability. Hence, it will only be administratively feasible to implement the product in the long term. However, there are features of the program that are more administratively feasible than others, particularly the compensation for injured porters or families of porters who died in natural calamities. Hence, taking gradual steps towards a more comprehensive social protection program is recommended.

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<sup>31</sup> Definition of disabled and the corresponding grants will be in accordance to the criteria used for Nepal's Disability Grant. Nepal currently has a limited disability grant that is available only to a few eligible individuals in each district.

The following table summarizes the two programs considering the technical correctness, administrative feasibility and political supportability. Based on this table we would recommend implementing Program 1 before Program 2 as the likelihood of its success is higher.

Policy Options	Technically Correct	Administratively Feasible	Politically Supportable
Program 1: Promoting upward mobility via training programs	↑	↑/↓	↑
Program 2: Contributory pension with emergency withdrawal properties	?	↓	↑

## SECTION 7: CONCLUSION

Porters rightly referred to as the backbone of the trekking industry, have been largely overlooked in the policy and academic discourse in Nepal. The PWF is a welcome intervention because in addition to providing welfare programs for porters, it will also ensure that this important labor segment of Nepal is rightly compensated and treated. With an overarching goal of improving the welfare of porters, this paper discusses the following options that should be considered while thinking about how best to use the Fund:

First, there is a need to even the playing field for porters so that porters have a credible mechanism to signal their abilities, strength and other personality traits such as honesty and hard-work. Currently, recruitment of porters is largely determined by their networks. The PRC will be an important step in this direction because it will allow porters to be registered, referred and reviewed, thus creating a platform for merit based hiring. It will also ensure fair compensation and treatment of porters. The database that will be built at the PRC will be the foundation to facilitate the design and implementation of programs using the PWF.

Second, the trekking industry is in a low equilibrium because porters are not well-trained. While all guides in Nepal get trained before receiving their licenses, the porter market is informal with very little porters receiving any form of training. In an industry as precarious as trekking, it is absolutely necessary to have training on various topics such as altitude sickness, first aid, and so on that will not only ensure safety of porters but also the trekkers they are accompanying. Having access to training not only allows them to become better porters, but it also ensures that they have the opportunity to move up the ladder to the ranks of assistant guides and guides.

Third, it is important to think about social protection for porters who risk their lives throughout their climbing careers. By having safety nets that they can access post retirement, either due to age or injuries, porters can better cope with negative shocks. By implementing a matched contributory pension program that also incorporates the high risk nature of the industry, porters will be able to save for the future.

Note that these programs will need to be sequenced as discussed in the sections above to ensure that the PWF helps lighten the burden faced by porters, both realistically and figuratively.

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## APPENDIX 1:

The rationale for choosing these regions is given below:

- 1. Rasuwa (Langtang Region):** Rasuwa was chosen as one of the survey sites because it has villages with high porter populations, mostly of the Tamang caste. It is a popular trekking site because of the presence of famous peaks like Langtang as well as the Langtang National Park. These porters migrate mostly to Kathmandu, the capital, during tourism seasons. Rasuwa has also come to the limelight in the last few months because 9 porters from this district died in the Annapurna blizzard in October. A team of 7 spent a week in Rasuwa collecting primary data from over 100 porters. The villages we visited include Ramche, Sarseyu, Syabrubesi and Dhunche.
- 2. Kaski (Annapurna Region):** The same questionnaire was used by a team of 4 in various villages in Kaski district, which hosts the highest numbers of trekkers in the country. The popularity of this region can be attributed to the presence of the Annapurna range and other easier, more popular short treks such as Ghandruk. Most of the porters move to Pokhara from surrounding villages during on-season in search of opportunities. Here, we visited Pokhara, Hiley, Birethati and Tikhedhunga, all part of the Annapurna circuit, and collected data for more than 37 porters and about 13 guides.
- 3. Solukhumbu (Everest Region):** Lukla is the beginning of all Everest treks in Nepal, and where porters, from Sherpa and Rai castes, migrate from surrounding villages in Solukhumbu, for portering opportunities. A team of 3 spent 4 days in Lukla, Solukhumbu. Here we collected data for about 30 porters.

## APPENDIX 2: Sources of Income Variability explored

Here, let us know look at the different sources of variability in income which can be broken down into the following components. (Where,  $i \rightarrow$  individual and  $j \rightarrow$  trip)

$$\begin{aligned} \text{Income}_i &= \sum (\text{Trip wage}_i + \text{Tips}_i) \\ &= \sum [(\text{Wage/ day})_i \times (\text{days/ trip})_i + \text{Tips}_i]_i \end{aligned}$$

For the purpose of our analysis, we use the following equation:

$$= \{ \overline{(\text{wage/day})}_i \times \overline{(\text{days/trip})}_i \} \times \sum (\text{trips})_i + \sum (\text{tips})_i$$

From the equation above we understand that variability in income across porters comes from:

1. Variability in wage per day
2. Variability in duration of each trip
3. Variability in total tips received
4. Variability in total number of trips per year

Table A summarizes the CVs of the different components:

Table A: Coefficient of Variation

Variable	Coefficient of Variation
Wage per day	0.233
Duration of trip	0.384
Total Tips	0.825
Total number of trips	0.635
Total Income	0.79

Hence, the high CV of overall income across porters is driven primarily by variation in total tips and total number of trips. Now, the number of policy drivers to effect a change in tips given to porters is limited. We, therefore, focus on policy drivers for total number of trips in our analysis in the main report.

### APPENDIX 3: Regression Results

The regression used to understand the relationship between network strength and total trips is as follows:

$$\begin{aligned} \text{Total trips}_i = & \beta_0 + \beta_1 \log(\text{network\_index}_i) + \beta_2 \text{received\_training}_i + \beta_3 \text{family\_generation}_i + \beta_4 \log(\text{age})_i \\ & + \beta_5 \text{education}_i + \beta_6 \text{work\_experience}_i + \beta_7 \text{interview\_location} + \epsilon_i \end{aligned}$$

1. Total trips – Equals the total number of trips for a porter in 2014.
2. Network index - We define network index as a weighted average of the different types of persons a porter is in touch with to receive a job. The order of preference is as follows with the weights given in the bracket – trekking agencies (1/3), guides (1/4), other porters (1/5), ex-porters (1/8) and others (1/8), which is reflected in the weight we use for each of these relationships based on the importance that the stakeholders put to these relationships.<sup>32</sup> We have then logged the index to reduce heteroskedasticity.
3. Received training – Dummy variable that equals to 1 if the porter received any training (language, professional development or any other) else 0.
4. Family generation – Dummy variable that equals to 1 if first generation else 0.
5. Age – We used a logged version of age in order to reduce heteroskedasticity and make the distribution less skewed.
6. Education – Dummy variable that equals 1 if studied beyond std. 10 and 0 otherwise.
7. Work\_experience – This is the number of years a porter has been working in the industry as a porter.
8. Interview\_location – Categorical variable that equals 1, 2 and 3 for Rasuwa, Pokhara and Lukla, respectively.

**Regression results:** In Table B, columns 1 and 2 are for regressions without Lukla and 3 & 4 with Lukla. We include regressions with (2 & 4) and without (1 & 3) network to understand how the coefficients on the other variables change. We see statistically significant results for Training without Lukla at 5% level of significance. For network, on the other hand, we see statistically significant results at 5% and 10% level of significance for regressions without and with Lukla.

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<sup>32</sup> Decancq, K., and Lugo, M. A. (2013). Weights in multidimensional indices of wellbeing: An overview. *Econometric Reviews*, 32(1), 7-34. Retrieved from <http://dx.doi.org/10.1080/07474938.2012.690641>

Table B: Regression Results Table

	(1) w/o Lukla	(2) w/o Lukla	(3) w/ Lukla	(4) w/ Lukla
Network		0.67** (0.024)		0.57* (0.056)
Training	1.43** (0.013)	1.20** (0.037)	0.87 (0.15)	0.69 (0.25)
Lukla			3.37*** (3.0e-13)	3.38*** (1.6e-13)
Pokhara	0.18 (0.60)	0.29 (0.41)	0.091 (0.78)	0.18 (0.58)
1st Generation	-0.33 (0.38)	-0.26 (0.50)	0.074 (0.83)	0.13 (0.72)
Age	-0.23 (0.70)	-0.52 (0.40)	-0.61 (0.29)	-0.79 (0.18)
Education>= std. 10	-0.40 (0.30)	-0.39 (0.32)	-0.34 (0.32)	-0.37 (0.30)
Work Ex	0.014 (0.39)	0.013 (0.40)	0.012 (0.47)	0.0099 (0.53)
Rasuwa	.	.	.	.
_cons	3.49* (0.077)	5.09** (0.018)	4.61** (0.015)	5.77*** (0.0045)
N	125	125	155	155
R-sq	0.082	0.116	0.433	0.447

p-values in parentheses  
\* p<0.1, \*\* p<0.05, \*\*\* p<0.01

#### APPENDIX 4: TIMS fee by location

S.N.	TREKKING AREA	PERMIT FEE
1	Dolpa District	
a	Lower Dolpo	Per week per person US\$ 10 Or equivalent convertible foreign currency.
b	Upper Dolpo	For the first 10 days per person US \$500 and After 10 days per day per person Us\$50
2	Taplejung District	Per week per person US\$ 10 Or equivalent convertible foreign currency.
3	Kanchanjunga Region	Per week per person US\$ 10 Or equivalent convertible foreign currency.
4	Upper Mustang	For the first 10 days per person US \$500 and After 10 days per day per person Us\$50.
5	Gorkha District	
a	Manaslu	From September to November per week per person US\$ 70 and After 7 days per day per person US\$ 10.and From December to August per week per person US\$ 50 and After 7 days per day per person US\$ 7 /Or equivalent convertible foreign currency.
b	Chhekampar & Chumchet VDC	From September to November per person US\$35 for first 8 days and from December to August per person US\$25 for first 8 days or equivalent convertible foreign currency.
6	Gauri Shankar and Lamabagar in Dolakha district	Per week per person US\$ 10 Or equivalent convertible foreign currency.
7	Simikot and Yari in Humla district	For the first 7 days per person US\$ 50 and After 7 days per day per person US\$ 7 Or equivalent convertible foreign currency.
8	Thuman and Timure in Rasuwa district	Per week per person US\$ 10, Or equivalent convertible foreign currency.
9	Makalu Region in Sankhuwasabha district	For the first 4 weeks per week per person US\$ 10 and After 4 weeks per week per person US\$ 20, Or equivalent convertible foreign currency.
10	Everest Region in Solukhumbu district	For the first 4 weeks per week per person US\$ 10 and After 4 weeks per week per person US\$ 20, Or equivalent convertible foreign currency.
11	Manang District	From September to November per week per person US\$ 90 and December to August per week per person US\$ 75 Or equivalent convertible foreign currency.
12	Mugu District	For the first 7 days per person US \$90 and After 7 days per day per person Us\$15 Or equivalent convertible foreign currency
13	Bajhang District	For the first 7 days per person US \$90 and After 7 days per day per person Us\$15 Or equivalent convertible foreign currency.
14	Darchula District	For the first 7 days per person US \$90 and After 7 days per day per person Us\$15 Or equivalent convertible foreign currency.

## APPENDIX 5: Average Coefficient of Variation of income across years

Here let us look at the average CV of income across years. For this we calculated the total income of each individual in each season of 2012, 2013 and 2014. Based on this we calculated the CV of income for each individual. The average CV across different group characteristics is given below.

A t-test was conducted for each category to check the hypothesis of ‘no difference’ between the mean CV of the sub-categories. A t-test of less than 1.96 implies that we are unable to reject this null hypothesis. Here we see that we cannot reject the null hypothesis for any of the four categories.

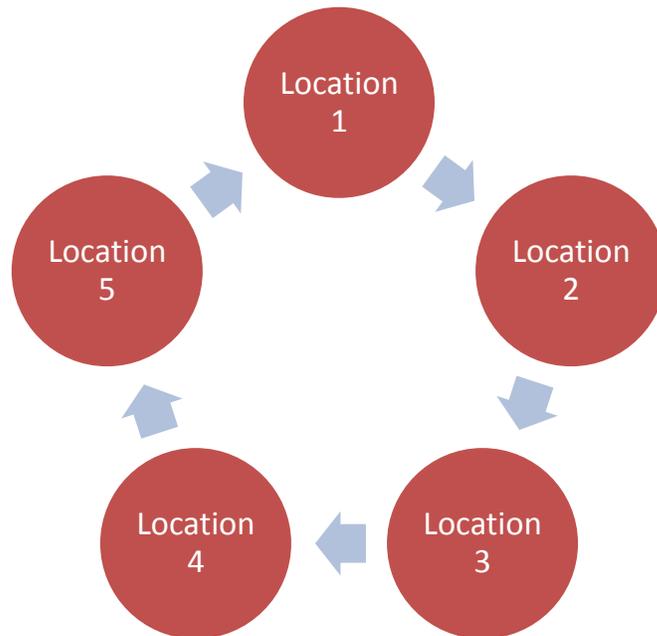
Table C - Average Coefficient of Variation across years in sample				
Coefficient of Variation by categories	No. of observation	Mean CV	St. Dev. CV	t-statistic
Education (< std. 5)	90	0.45	0.26	-1.04
Education (> std. 5)	67	0.49	0.27	
On-season district (non-KTM/ Pokhara)	18	0.38	0.19	-1.52
On-season district (KTM/ Pokhara)	139	0.48	0.27	
Family generation 1	106	0.44	0.26	-1.59
Family generation 2	49	0.51	0.24	
Received training (No)	141	0.46	0.25	-1.43
Received Training (Yes)	15	0.56	0.31	
Overall	157	0.47	0.26	

## **APPENDIX 6: Curriculum for the Trekking Guide Course**

The trekking guide course is a 6-week course provided at the National Academy of Tourism and Hospitality Management (NATHM). This course costs USD 65 per student and is a pre-requisite for obtaining the guide license. The curriculum largely covers the following topics:

- Culture
- Religion
- Trekking
- First Aid (high altitude, hygiene)
- Geography
- Anthropology
- Tourism
- History
- Rock Climbing
- Mountain Rules and Regulations
- Flora and Fauna
- Wildlife National Park
- Crisis Management
- Communication Skills
- Coordination, Leadership and Management
- Guiding Technique and Commentary
- Environment and Sanitation

## APPENDIX 7: Roving Model for Training Programs



### Some features of the course and the model:

1. Roving model wherein a team of 2-3 instructors move from one location/ PRC to the other during off-season
2. High demand training: Content to cover first-aid, professional development, basic language skills, flora & fauna knowledge and other altitude related issues, precautions
3. Low demand training: Provide scholarships or other allowance for low-demand but important courses
4. Partially funded through Porter Welfare Fund