

TELESCO-WEEDER EXPORT FROM CANADA TO NEPAL  
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Part 1: Product

Product Description

The Telesco-Weeder is a lightweight garden hoe with a blade made of high tensile stainless steel, which is shaped into a hollow loop (see Figure 1) (“Garden Bandit”, 2015). This Canadian made hoe does not pull soil away while it gets rid of weeds, effectively saving time and limiting erosion of the soil surface, as well as aerating the soil (“Garden Bandit”, 2015). Because of the hoe’s narrow loop design, the blade is able to target the roots of the weed while avoiding damaging the roots of the crop (“Garden Bandit”, 2015).

The Telesco-Weeder has an adjustable twist-and-lock telescoping handle to remove the need to bend over when weeding, and saving the backs of workers in gardens and fields (“Garden Bandit”, 2015). Each Telesco-Weeder handle can extend from 88.9cm to 154.94cm to accommodate all heights and preferences (“Garden Bandit”, 2015). The stainless steel head of the hoe does not need to be oiled and will not rust, but remains sharp enough to cut through the soil easily to reduce worker fatigue and strain (“Garden Bandit”, 2015).



*Figure 1: The Telesco-Weeder is durable, lightweight, adjustable, and requires little maintenance (Picture from “Garden Bandit”, 2014)*

Company Information

Mailing Address	Landmark Innovations, PO Box 55 Powell River, BC Canada V8A 5C1
Toll free phone (Canada, US)	1-800-680-8890
Office phone	604-487-4605

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Sales related inquiry email	<a href="mailto:sales@gardenbandit.com">sales@gardenbandit.com</a>

Table 1: Contact information for Landmark Innovations ("Garden Bandit", 2015).

This hoe is manufactured by a Canadian company called Landmark Innovations which is based out of Powell River, British Columbia (see Table 1 for contact information) ("Garden Bandit", 2015). The Telesco-Weeder is a unique take on the traditional role of a hoe that holds many advantages over a traditional hoe, especially in smaller horticultural farming practices ("Garden Bandit", 2015). The Telesco-Weeder is not available in big box stores, and therefore, the income to Landmark Innovations from the Telesco-Weeder depends on online sales, or sales to independent garden supply retailers ("Garden Bandit", 2015).

### Product Cost

The Telesco-Weeder is not available in big box stores in Canada or the United States. In Canada, the Telesco-Weeder is only available online, or from independent retailers, generally smaller family run garden supply stores ("Garden Bandit", 2015). The hoe costs \$39.99 Canadian online individually, plus shipping and handling, which comes to a total of \$49.60 Canadian per hoe if it is destined for anywhere in Canada ("Garden Bandit", 2015).

### Competition

There are a number of different hoes on the market, all with varying sizes, designs, and effectiveness; however the Telesco-Weeder is a one of a kind hoe ("Garden Bandit", 2015). Traditional garden hoes are usually wide and heavy, which leads to back strain with continuous use. Some hoes also have large, solid heads, which

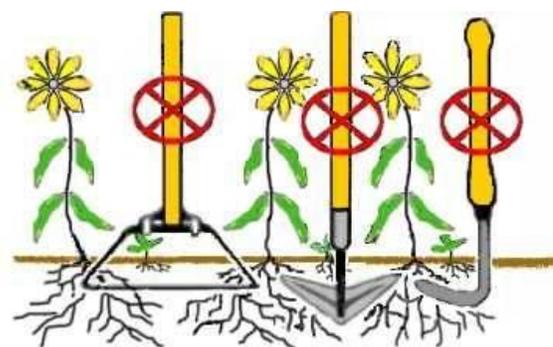


Figure 3: There are many hoes on the market, however most are either too wide for working with closely spaced crops, or they destroy the top layer of the soil profile. (Picture from "Garden Bandit", 2015)

pull the top layer of soil away, causing more work to replace it. This causes degradation of the structural integrity of the soil, ruining the valuable organic top horizon in the soil profile. It is important to keep the top layer of soil intact, as the organic matter in this layer provides important nutrients to the crops, and it is an important habitat for soil organisms that promote plant growth and health (Fox, Tarnocai, Broll, Joschko, Kroetsch, & Kenney, 2014). Some hoes are designed with this problem in mind, allowing for a hole in the head design to let soil flow through while getting under the weed, however, these hoes are often wide and damage the roots of crops that are grown close together.

The Telesco-Weeder has a loop design that is narrow, yet durable (“Garden Bandit”, 2015). The looped head of the hoe allows the blade to get underneath the weed and destroy the roots. The narrow design of the head avoids the roots of closely grown crops, and doesn’t pull the soil away from the surface, leading to less time hoeing, as the farmer will not have to take time to replace soil that has been pulled away from the surface. This hoe aerates the soil while it eradicates weeds, by loosening up soil particles and breaking apart thick aggregates, making large pores that are accessible by the roots of the crops (“Garden Bandit”, 2015).

## Part 2: Export to Nepal

### Nepal Background

Nepal is a country in Asia located south of China and north of India. This country is landlocked, meaning that there is no access to Nepal from the oceans, and the only way to get into Nepal is either by plane or by the land border between India and Nepal. There is access to Nepal from China in the north however it is difficult to traverse because of the Himalayan mountain range that runs between the two countries (Chapagain, 2016). 28% of land in Nepal is currently devoted to agricultural uses, whether it be raising crops or livestock (Chapagain, 2016).

The total area of cultivable land in Nepal is 3.1 million hectares out of a total area of 14,714,100 hectares (Chapagain, 2016).

The agriculture sector in Nepal employs over 70% of the population and accounts for 38% of the country's GDP (Chapagain, 2016). Since agriculture is such a large part of the economy in Nepal, even a tiny boost in the productivity of a field can have a large positive impact on the economy.

### Agro-Ecological Regions

The country can be subdivided into three different topographical regions, the Himalayan region, hilly region, and terai region as shown in

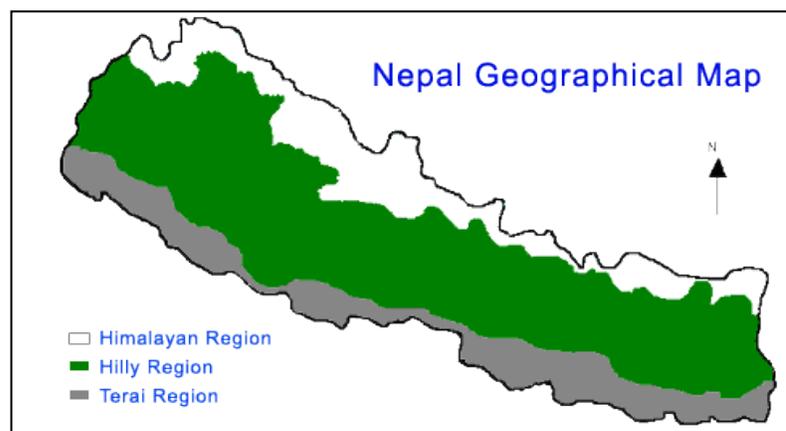


Figure 3 (Chapagain, 2016). Each of these 3 different regions are

*Figure 5: A map of the 3 agro-ecological regions of Nepal. (picture from "Physical Features of Nepal", n.d.)*

separate in their elevation, climate, and farming techniques and products (Chapagain, 2016).

The mountainous region, also known as the Himalayan region of Nepal has steep slopes, a colder climate, and a short growing season. It is also home to the Himalayan mountain range and the famous tourist attraction, Mount Everest (Chapagain, 2016). The soil can be a sandy loam texture, however the ground is generally rocky, making it a poor environment for growing most crops (Chapagain, 2016). Animal agriculture is the main type of agriculture in the mountain region where Yak and Chauries are native animals that have been domesticated and used to produce meat and milk (Chapagain, 2016). Other animals that are raised here, like sheep and goats, need to be moved to lower areas in the winter (Chapagain, 2016). Access to mountain

dwelling is limited, as there are few roads, with sheep and mules being the main form of importing essential goods to the villages in the mountains (Chapagain, 2016).

The hilly farming region of Nepal has slopes of a lesser degree than the mountains that have generally been carved into terraces for growing crops (Chapagain, 2016). This is the largest of the 3 agro-ecological regions, making up 68% of the area of the country (Chapagain, 2016). Due to the slope of the hills, the terraces have a tendency to erode and collapse, which can be a large hit to a farm family's income. The clay loam to sandy loam soil is good for growing a variety of fruits, like apples and pears, cash crops, like coffee, and vegetable crops, like corn and millet (Chapagain, 2016). There is more available land for grazing livestock in this region than in the mountainous region of Nepal, so animals do not have to travel as far from pasture to pasture to get food (Chapagain, 2016). Cattle, goats, and buffalo are all raised in this area for their milk, manure, and their ability to do work in the fields with ploughs (Chapagain, 2016). Transportation in this region is a little easier than in the mountain region, but mules are still depended on for transporting the items that farmers need (Chapagain, 2016).

The terai region is the flattest of all the regions of Nepal (Chapagain, 2016). The land is fertile, and over half of this land has been irrigated (Chapagain, 2016). There are some proper roads that can be used to transport machinery and technologies used in food productions, and as the lands are more fertile, the farmers are able to produce more product, which results in more money for their product than the farmers in the mountain and hill regions to spend on technologies to improve their farm practices (Chapagain, 2016). In the terai region, fruits like mango and pineapple are grown, along with mechanized rice production (Chapagain, 2016). There is a limited amount of grazing land for livestock so cattle, buffalo, and goats that are raised in this region are generally fed crop residues (Chapagain, 2016).

## The Consumer

This product would be marketed to the terai region of Nepal, where the most field agriculture takes place. The farmers in this area are heavily dependent on the productivity of their fields, which is the source of their food for the whole year. If they have enough food left over, they can sell their crops to make some money. On average, the farmers in this region make about 7% more food than is consumed by their family, and are then able to sell the leftover food and gain a little bit of money for themselves to spend on seed, livestock, and farm equipment (Chapagain, 2016).

## Transport

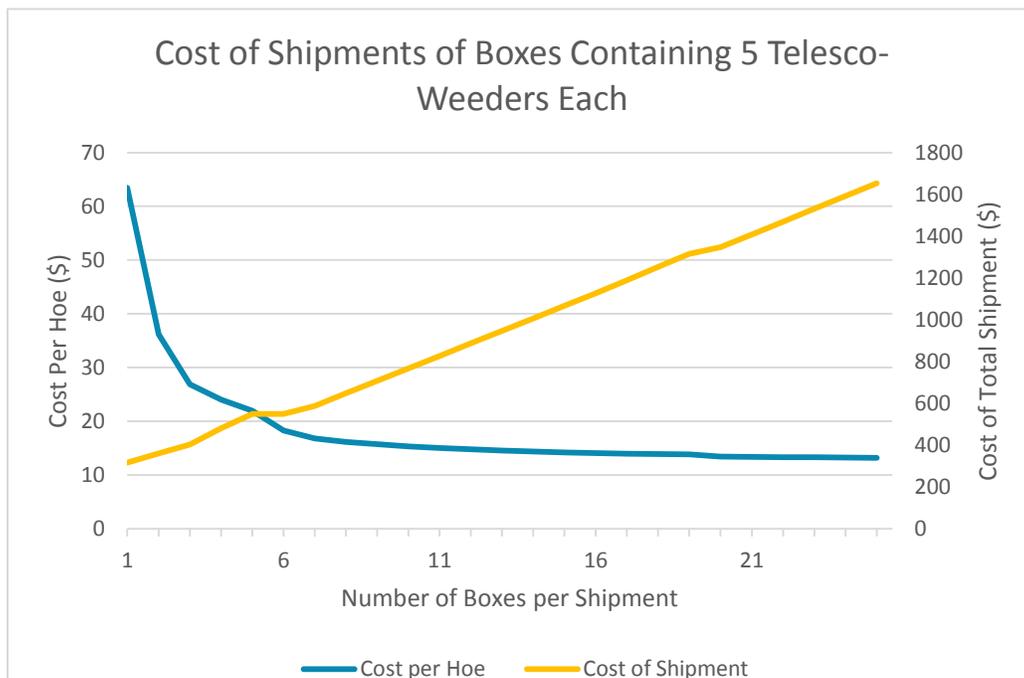
The Telesco-Weeders will be transported from the factory in British Columbia to the Vancouver mail center. From the mail center, it will be flown out of Vancouver and into the Kathmandu Airport in Nepal. From the airport, the hoes will be transported to individual farm supply dealers in Nepalese villages, where the dealers will distribute the hoes to the villagers who have paid for them ahead of time using a payment plan (see section below entitled “Marketing Strategy” on page 9).

It would not be prudent to send the hoes to Nepal via ship, as Nepal is a landlocked country that has no connections to the ocean (Chapagain, 2016). The cheapest and most direct route to Nepal is via plane to the airport in Kathmandu (Chapagain, 2016). The hoes will be sent in boxes, each 101.6cm x 30.5cm x 30.5cm box containing 5 hoes, which comes to a total weight of approximately 10kg when estimating each hoe to be about 2kg in weight. The shipment of the hoes will contain multiple boxes, as the more boxes that are sent in a shipment, the less expensive the each hoe will be to ship for both Landmark Innovations, and the Nepalese consumer (“A1 Freight Forwarding”, 2016).

## Costs

In Nepal, the main form of currency is the Nepalese Rupee. One Canadian Dollar is equivalent to about 81 Nepalese Rupee (“Convert Canadian Dollar to Nepalese Rupee”, 2016). To put this into perspective, one litre of regular milk in Nepal costs 16.78 Rupees, which is approximately \$0.21 Canadian (“Food Prices in Nepal”, 2016). Using Canadian dollars in Canada, one can buy a litre of milk for \$2.30 (“StatCan”, 2016a). This being said, for the price of milk in Canada, one can buy over 10 litres of milk in Nepal.

Transporting the Telesco-Weeder to Nepal from Canada by air will cost \$317.22 for one box of 5 hoes, equalling \$63.44 per hoe (“A1 Freight Forwarding”, 2016). Increasing the amount of boxes sent per shipment decreases the amount of money per hoe (see Figure 3) (“A1 Freight Forwarding”, 2016). For example, if 20 boxes are sent, the total shipment cost will be \$1,347.06 total, making it \$67.35 per box and \$13.47 per hoe in a 100 hoe shipment (“A1 Freight Forwarding, 2016”).



*Figure 7: As the price of the total shipment goes up, the cost of the individual hoes goes down. Data from A1 Freight Forwarding (2016)*

*Figure 8: As the price of the total shipment goes up, the cost of the individual hoes goes down. Data from A1 Freight Forwarding (2016)*

Decreasing the weight of the Telesco-Weeder will not do anything to lower the cost of shipping them because the chargeable weight of the shipment is by volume. If the hoes took up less space, this could lower the transportation cost by sending more hoes per unit volume, to maximize the amount of weight to the amount of space the boxes take up. This can be done by selling the tools with the handle and head parts separate to fit more handles and heads together, requiring just a few tools to put the hoe back together once it reaches Nepalese distributions centers, like the local farm supply dealers in the villages.

In Canada, the Telesco-Weeder costs \$39.99 Canadian before transportation (“Garden Bandit”, 2015). With the added transportation costs outlined above, the total cost for 100 hoes for the Nepalese farm supply salesmen would be \$5,346.06 Canadian. The cost for the farmer would be a little more, depending on how much the farm supply supplier charged for the profit per hoe. \$5,346.06 Canadian equates to 433,030.86 Nepalese Rupee, equating to 4,330.31 Nepalese Rupee per hoe.

### Marketing Strategy

In Nepal, the average farmer in would earn about 4,500 Nepalese Rupee per month (Smith, 2016). Since the Nepalese farmers would have to spend just about all of their income in one month to pay for the hoe at once, a payment plan would be set up. The Nepalese farmers will sign up for an approximately 3-year-long payment program that, if they keep up with their payments, will afford them a Telesco-Weeder at the end. For a deposit of 20 Rupees a week, the cost of less than 2 litres of milk, the Nepalese farmers will have paid enough money to purchase a Telesco-Weeder from their farm equipment supplier in 2.8 years. A similar system will be set up between Landmark Innovations and the farm equipment distributors in Nepal, where an order will be placed about 2.8 years in advance of the time they want the shipment of hoes to arrive.

As they receive the money from the farmers, they can send it to Landmark Innovations to pay off the Telesco-Weeder by the time the shipment arrives.

Since in many Nepalese villages, there will not be 100 farmers buying hoes, neighboring village farm equipment salesmen can work together to split up a 100 hoe shipment and its cost. If there are a few hoes left over that were not purchased by farmers in the payment plan, they could be sold in store to farmers who would like to pay without the payment plan, perhaps because they saved the money themselves over the years, or they are sharing the cost with a few



*Figure 9: Example of a poster that can be sent to Nepal for display in farm equipment supply shops, and other frequently visited places (“Garden Bandit”, 2015)*

neighbors.

As many farmers in Nepal do not get the chance to go to school and are therefore illiterate, posters, such as the sample poster in Figure 5, will be displayed in areas such as farm supply dealerships and local markets where they will be seen by many farmers (Chapagain, 2016). It is important to have many pictures on the posters depicting the use of the hoe as

opposed to many words. Pamphlets and leaflets can also be handed out to farmers for them to take home and consider the idea of purchasing a Telesco-Weeder.

## Benefits of the Export/Import of the Telesco-Weeder

### Benefits to Nepal

Importing the Telesco-Weeder into Nepal would benefit the importing country for many reasons, including the economic benefits to the farmers and the farm equipment dealers, the ergonomic benefits to workers, and the ecological benefit in the fields, especially in the soil and crop health. A business exchange of the Telesco-Weeder from Canada to Nepal will improve the relationship between the two countries and open up more trade opportunities between them.

Farm supply dealers have businesses that will benefit from selling the Telesco-Weeders because the Telesco-Weeders are non-perishable and easy to store, unlike some seeds or chemical fertilizers and pesticides that may be kept in farm stores, so they won't be too much of a burden to keep on the shelves for a few months or years. The dealers will form valuable ties with Canada, which could lead to more business deals like this one with more Canadian farm technologies for the Nepalese farmers. They will also form valuable ties with their business counterparts in neighboring villages, should they choose to work with other retailers in Nepal when ordering 100 hoes at a time.

The farmers of Nepal would benefit from the ownership of a Telesco-Weeder because this hoe is easy to operate and maintain, and it is ergonomic, leading to less injury when ridding the fields of weeds. The stainless steel head of the Telesco-Weeder will not rust or dull, and does not need to be oiled ("Garden Bandit", 2015). This kind of material will last longer than that of traditional hoes with less the maintenance time and cost to the farmer ("Garden Bandit", 2015).

The hoe is lightweight and has a handle that can be adjusted for the perfect length for its wielder (“Garden Bandit”, 2015). The less bending over a worker has to do, the less strain is on their back and arms, and as the soil flows through the loop head instead of being moved by the head, less time is spent replacing displaced soil (“Garden Bandit”, 2015). Activities like working a hoe in a field all day greatly improve chances for developing lower back pain compared to those who are not doing physical labour all day (Hübscher, Ferreira, Junqueira, Refshauge, Maher, Hopper, & Ferreira, 2014). Repetitive back movements, like hoeing, can place additional unneeded strain on the back, leading to a faster and more severe development of lower back pain, which can make a worker less productive or even make them unable to work for a period of time (Hübscher *et al.*, 2014). An adjustable handle on a hoe can be useful because it reduces the amount of time that a worker remains bent over, lessening the strain on their back.

Using the Telesco-Weeder has better applications to maintaining soil health than a traditional hoe. Keeping the top layer of soil in tact as much as possible is important because this is the layer that has all of the organic matter, and many living organisms that help with plant health and growth (Fox *et al.*, 2014). Many root systems extend 60cm below the soil surface, greatly into the second soil horizon, or B horizon, however when the plant is being initially established, the nutrients in the A horizon are crucial to good initial development that will affect the overall health and productivity of the crop down the road (Fox *et al.*, 2014).

The Telesco-Weeder is good for crops in its design and in its purpose. The slim design of the Telesco-Weeder head allows for easy maneuvering in amongst closely planted crops (“Garden Bandit”, 2015). When the crops are planted together, it is easy to nip the roots of the crop with a conventional hoe when trying to destroy the roots of the weed to kill it. With the

Telesco-Weeder's narrow head, it is easier to target just the roots of the pest plant while avoiding damaging the crops.

It is important to rid the field of any and all weeds, because the presence of weeds in any field can be a hindrance to the health of the crop. In early development of a crop, the plant is trying hard to establish itself in the soil with both its root system and its stem length, so it can take full advantage of all the soil nutrients and sunlight that it can access. After this initial establishment phase, the plant goes through rapid growth and production because of all the nutrients that are at its disposal through its root system, and it produces its most valuable food components for human consumption. If there are weeds with large canopies that establish before the crop does, then they block out sunlight from the crop, and the crop has to try to quickly extend its shoot to outgrow the weeds vertically in order to gain access to sunlight, which limits the growth of its roots, resulting in less available root surface area for the uptake of essential nutrients when the crop is establishing its fruit. If a weed has an extensive root network, it would compete with the crop underground, absorbing the essential nutrients in the soil and leaving less available for the growth of the crop.

An example of a weed infestation in Nepal would be the *Parthenium hysterophorus* weed (Shrestha, Shabbir, &Adkins, 2015). This weed can be devastating if it is allowed to take hold of a field, as it can physically inhibit the germination of certain crops, especially in the Brassicaceae family, which includes crops such as radish, mustard, and cauliflower (Shrestha *et al.*, 2015). Weeds in the fields of Nepal can greatly limit the growth and productivity of crops, and the farmers place a great deal of their attention and time into taking care of weeds. Quick fixes, like chemical herbicides are expensive and hard to come by, and many Nepalese farmers do not have the proper equipment, or training to adequately apply herbicides to a field (SAK Nepal, 2016).

The Telesco-Weeder is an inexpensive alternative that does not require any additional training or instruction.

### Benefits to Canada

An exchange of the Telesco-Weeder from Canada to Nepal would benefit the Nepalese people, as outlined above, but it will also help Canada, by creating jobs for those who work in the Telesco-Weeder factory, those who are involved in exporting the product to Nepal, and open up more positions at Landmark Innovations, which would improve the overall value of this Canadian company.

In 2015, there were 1,712,400 people working in manufacturing in Canada, with 172,500 of those people employed in the manufacturing industry in British Columbia that same year (“StatCan”, 2016b). That means that British Columbia had about 10% of the jobs in the manufacturing sector in Canada, and manufacturing contributed to only 7.5% of the workforce in British Columbia in 2015 (“StatCan”, 2016b). This indicates that there is room for growth in the manufacturing industry in British Columbia, and opening up new jobs in the process of manufacturing of Telesco-Weeders will bring in more jobs to the manufacturing sector.

There are many jobs related to the transport of goods across a country and internationally. There are people who are in charge of transporting the hoes from the factory to the airport, such as the packagers, who are at the end of the factory line, to the people driving the trucks to the airport. Once at the airport, the transport papers are inspected, the boxes are loaded on to the plane, and the pilot flies the plane to the destination. Each step of the process involves different people who are responsible for different tasks. All of these aspects employ many people, keeping the job market going.

Landmark Innovations is a growing company looking to expand the market. The Telesco-Weeder and its hand-held component, the Garden Bandit, are not yet in big box stores, however these products have been advertised on TV and in gardening magazines (“Garden Bandit”, 2015). This Nepalese trade deal will open up an international trade section in the business model for Landmark Innovations and thus create jobs in the international relations section of the business.

## Citations

A1 Freight Forwarding. (2016). Retrieved November 25, 2016, from

<http://www.a1freightforwarding.com/>

Chapagain, T. (2016). Agriculture and Agri-Food Systems in Nepal [PDF Document].

Convert Canadian Dollar to Nepalese Rupee. (2016). Retrieved November 25, 2016, from

<http://themoneyconverter.com/CAD/NPR.aspx>

Food Prices in Nepal. (2016). Retrieved on November 25, 2016, from

[https://www.numbeo.com/food-prices/country\\_result.jsp?country=Nepal](https://www.numbeo.com/food-prices/country_result.jsp?country=Nepal)

Fox, C. A., Tarnocai, C., Broll, G., Joschko, M., Kroetsch, D., & Kenney, E. (2014). Enhanced A horizon framework and field form for detailed field scale monitoring of dynamic soil properties. *Canadian Journal of Soil Science*, 94(2), 189-208. doi:10.4141/cjss2013-079

Garden Bandit. (2015). Retrieved October 18, 2016, from <http://www.gardenbandit.com/>

Hübscher, M., Ferreira, M. L., Junqueira, D. R., Refshauge, K. M., Maher, C. G., Hopper, J. L., & Ferreira, P. H. (2014). Heavy domestic, but not recreational, physical activity is associated with low back pain: Australian Twin low BACK pain (AUTBACK) study. *European Spine Journal*, 23(10), 2083-2089. doi:10.1007/s00586-014-3258-2

Maltsoglou, I., Taniguchi, K. (n.d) Retrieved on November 25, 2016, from

<http://ageconsearch.umn.edu/bitstream/23784/1/wp040013.pdf>

Physical Features of Nepal. (n.d.). Retrieved November 10, 2016, from

<https://www.kullabs.com/class-7/social-studies-7/our-earth-2/physical-features-of-nepal>

- SAK Nepal. (2016). Retrieved October 19, 2016, from <http://saknepal.org/>
- Shrestha, B. B., Shabbir, A., and Adkins, S. W. (2015). *Parthenium hysterophorus* in Nepal: a review of its weed status and possibilities for management. *Weed Research*, 55(2), 132-144. Doi:10.1111/wre.12133
- Smith, A. (2016). Nepal: Farming the future. Retrieved on November 25, 2016, from <https://www.theguardian.com/global-development-professionals-network/adam-smith-international-partner-zone/2015/jan/22/nepal-farming-the-future>
- StatCan. (2016a). Food and other selected items, average retail prices. Retrieved on November 25, 2016, from <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ155a-eng.htm>
- StatCan. (2016b). Distribution of employed people, by industry, by province (Saskatchewan, Alberta, British Columbia). Retrieved on November 26, 2016, from <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/labor21c-eng.htm>