

Exportation of Propane Fueled Scare Cannons to Nepal

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Introduction of Product

Bird pests are a common problem in the agricultural community. A product commonly used in Canada is propane fueled scare cannons, otherwise known as bird bangers (Fraser, 2010). A scare cannon is a form of acoustic bird protection made up of a simple, easy to use design (Fraser, 2010). The sound created by the device is generated through the combustion of propane that is injected into a cylindrical barrel producing a loud explosion (Harris, 1983). The timing of the explosion is determined by the control box that dictates the time intervals the shots are fired at; these can be set to the hours of heaviest bird activity for the convenience of the farmer (Fraser, 2010). The effectiveness of the cannon can be contributed to both the profound volume of the boom and the randomization of the shots being fired; for the most adequate results it is suggested that time intervals of more than 3 minutes are chosen, this avoids the risk of the pests becoming socialized to the noise (Fraser, 2010). With the noise covering an area of 5 acres sending this product to Nepal could create a boom Canada's economy and induce higher crop yields for the farmers of Nepal.

Comparing with other products

Acoustic protections against pest birds come in many different shapes and sizes. In Canada there are a number of products available, techniques ranging upon the situation they are called upon to be used. Taking a high tech approach to pest control are the electronic noise devices, these work by using a variety of annoying noises to the target bird or pest (Fraser, 2010). Usually these consist of distress calls, an advantage to this is that it attracts birds of preys therefore furthering the protection of the crops (Fraser, 2010). This product would be a disadvantage to the people of Nepal due to their lack of electricity. Another acoustic method of

protection more closely related to the bird banger is a pyrotechnic pistol; The user aims the gun to shoot a cartridge into oncoming flocks before they have a chance to land in the field of crops (Fraser, 2010). By taking this approach the bird get scared away from the area completely, this is considered the most effective method and is used by a wide range of Canadian farmers (Fraser, 2010). While this product may get closer to the pest it would lead into troubles for the people of Nepal due to the constant need to buy more pyrotechnic cartridges.

Bird Pressure	Equipment Suggested
Low	<ul style="list-style-type: none"> • 2 propane-fired cannons + tanks • 2 electronic scarers + 12 Volt batteries
Medium	<ul style="list-style-type: none"> • 2 propane-fired cannons + tanks • 3 electronic scarers + 12 Volt batteries • 20 scare-eye balloons + poles • 1500 m (5000 ft) flash tape + poles • 1 pyrotechnic pistol + cartridges • Netting over outer 2 rows (4 rows total)
High	<ul style="list-style-type: none"> • 14500 m (47,600 ft) netting over rows

Table 1 is a guide to the combination of techniques that Canadian farmers use to prevent damage from bird destruction (Fraser, 2010).

Suppliers

Margo supplies LTD wild life management specialists are a Canadian supplier of wildlife protection equipment (Margo Supplies, 2015). The company is located in High River, Alberta, Canada with office hours of 8:00 AM to 4:30 PM mountain time, Monday to Friday; by phone they can be reached at (403)-652-1932. The email address given is info@margosupplies.com

(Margo Supplies, 2015). Margo Supplies LTD carries a large variety of wildlife scare products, ranging from trapping devices to repellents (Margo Supplies, 2015).

Margo Supplies carries 2 different Zon brand models of propane scare cannons (Margo Supplies, 2015). The first model is called a Zon Mark 4 bird scaring cannon- standard mechanical model (Margo Supplies, 2015). This cannon is the simplest design of the different models but is ensured to be durable for harsh weather and built with long lasting parts (Margo Supplies, 2015). The explosion intervals of this cannon can be set to times between 40 seconds and half an hour (Margo Supplies, 2015). This model weighing only 8.4 kilograms, just under 20 pounds would be ideal to move around frequently and could be transported to rural areas quite readily (Margo Supplies, 2015). Another advantage to this model is that it is energy efficient; with low gas usage. A twenty pound tank of propane grants about 17,000 shots ensuring that the farmers of Nepal would be the most economic option (Margo Supplies). Margo Supplies carries this product for 280.00 US dollars but also has the option of buying this cannon used for a reduced price of 225.00 US dollars (Margo Supplies, 2015).

The second Cannon Margo carries is the Zon ELECTRA multi-shot scare cannon (Margo Supplies, 2015). The difference between the Mark 4 and the ELECTRA cannon is the ability to fire multiple shots at the time of each interval (Margo Supplies, 2015). The benefits to this is that the first explosion catches the bird by surprise, the second shot drives the bird away and the third shot is a safe guard to insure they will not come back (Fraser, 2010). While this Cannon is considered the more effective model of the two cannons it may not be suitable for Nepal due to the increased price. The ELECTRA model bird scare cannons is sold from Margo supplies at a price of 475.00 US dollars, for this reason the single shot cannon would be a better fit to export to Nepal (Margo supplies, 2015).

Spin –off products

For a propane bird banger to operate, one of the obvious essential components of the system is the propane itself. While The Scare Cannon is a low gas usage unit, profiting seventeen thousand explosions per twenty pound tank of propane, it will eventually need to be reloaded with the propyl gas (Margo Supplies, 2015). Canada is seventh largest producer of propane in the world; in fact nearly one hundred percent of Canada’s propane is produced on home soil (The Canadian Propane Association, 2015). According to the Canadian Propane Association, virtually eleven billion litres of propane is produced in Canada per year, half of which is used on native land and the other half is exported to other nations; this generates twenty three thousand Canadian jobs while circulating sixteen billion dollars into the economy (Canadian propane association, 2015).

The major propane trading hubs are located in Edmonton Alberta and Sarnia Ontario (Propane Market Review - Final Report, 2014).

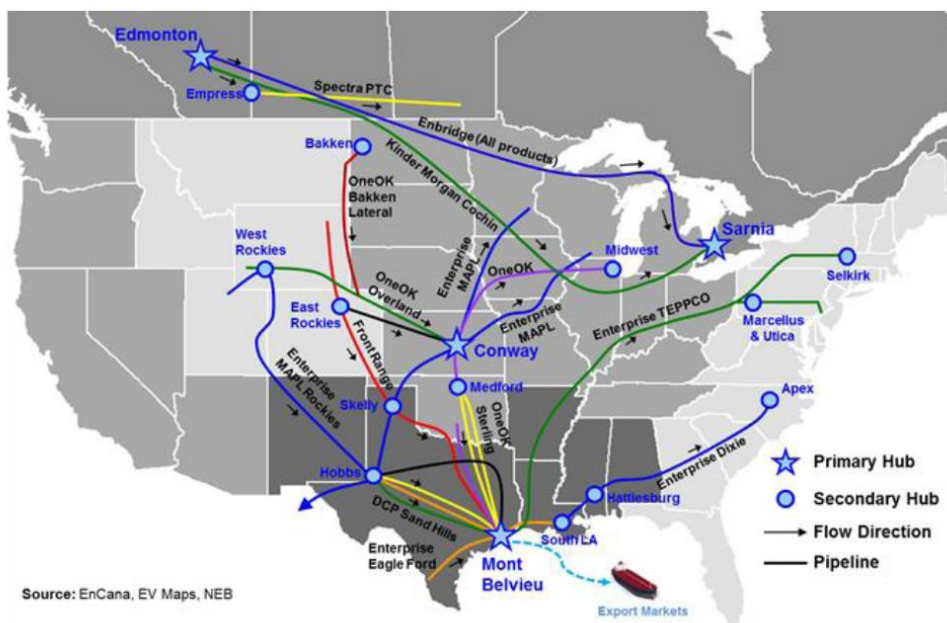


Figure 1 shows the major propane trading hubs in Canada.

A drawback to this idea Canada is that prevailing terminals for propane exports

to overseas countries are nonexistent as propane is shipped solely to the USA (Propane Market Review - Final Report, 2014). A solution to this could be to ship propane to America where it could be then passed over sea to Nepal.

Introduction to Nepal

Nepal is a small country landlocked between China and India (T. Chapagain, personal communications, October 18, 2015). The population of Nepal is approximately twenty seven million people, seventy percent of which make a living from agriculture (T. Chapagain, personal communications, October 18, 2015). The country's geography is split up into 3 separate regions, the Terai, Hills and Mountains (T. Chapagain, personal communications, October 18, 2015). The mountains are home to the tallest mountain range in the world (T. Chapagain, personal communications, October 18, 2015). The climate ranges from warm temperate to a colder alpine climate; this can be problematic in this area because of cooler temperatures and short growing seasons (T. Chapagain, personal communications, October 18, 2015). The main crops grown in this area of Nepal consist of Barley, Potatoes and Buckwheat (T. Chapagain, personal communications, October 18, 2015). The hills region of Nepal is a subtropical climate meaning that fruits and vegetables are a nice fit to grow here (personal communications). The Terai otherwise known as the low lands predominantly grows fruits, vegetables and paddy (personal communications).

Nepal's land mass makes up approximately one hundred and forty-seven square kilometres; about one fifth of this area is dedicated to either a wildlife conservation area or national park (Thapa, 2010). These parks generate economy for Nepal through means of ecotourism, hunting etc. (Thapa, 2010). The villages that surround these parks and conservation

areas inhabit many farmers of both substance and cash crop variety (Thapa, 2010). Interactions between the wildlife that populate the parks and the farmers that practice agriculture in the surrounding areas brew up conflicts with crop damage and massive yield loss (Thapa, 2010). The problematic species brought to attention via survey of the local farmers in these areas are the elephant, Rhino, Peacock, Chital and wild boars (Thapa, 2010). The problematic animals depend of the crop being cultivated but over all the Chital, elephant and wild boar generate the largest amount of conflict (Thapa, 2010). The farmer of Nepal use a mixture of traditional and modern methods to control raiding of their crops some of which include; bio-fencing, tin can hitting, loud speakers and microphones to yell at pests, whips that create loud noises, manned watch towers and barbed wire (Thapa, 2010). All of the methods described above have a certain level of effectiveness shown in Table 2.

Table 2

Effectiveness of means used for crops and animals.

Techniques	Effectiveness for crops						Effectiveness for animals		
	Paddy	Wheat	Maize	Mustard	Lentils	Vegetables	Elephant	Chital	Wild boar
Machan (watch tower)	1	1	1	1	1	3	1	1	1
Trench	2	2	3	3	1	3	3	2	1
Barbed wire fence	3	3	3	3	3	3	3	3	3
Net wires	3	3	2	1	1	1	3	1	1
Scaring devices	1	1	1	3	3	3	1 ^a	1 ^a	1 ^a
Bio-fencing	3	3	1	1	1	1	2	1	2
Tin-hitting	3	3	1	1	3	2	1	1	2
Hadbadai	2	2	3	1 ^a	1 ^a	1 ^a	3	1 ^a	3

Note: 1 = Most Effective; 2 = Moderate Effective; 3 = Least Effective.

a

Highly effective but for short period only.

Sourced from: (Thapa, 2010).)

Table 2 shows the effectiveness each technique used by the Nepalese has respective to wildlife control. The Most effective technique is shown to be the manned watch tower. The least effective is the barbed wire fencing (Thapa, 2010). The scaring devices, which include the microphone previously talked about, is labelled highly effective but only for a short period of time (Thapa, 2010).

If there scare cannon were implemented in Nepal it would not only be effective for birds but for elephants, chital and wild boar; as it is shown in Table 2 these species are able to be scared off by loud random noises (Thapa, 2010).

Suppliers in Nepal

The percent of population leading an agricultural based livelihood is approximately 70 percent therefore a large enough dealer must be found (Atreya, 2007). Agro Enterprise Centre is an industry who's goal is to increase the value of products sold and traded in Nepal while helping with the transition from sustenance growing to agriculture in a more commercial manner (Agro Enterprise centre, 2014). The agro-enterprise is keen on the implantation of trade to and from Nepal (Agro Enterprise centre, 2014). The propane scare cannons could be exported by Margo Supplies LTD overseas by Cargo ship where they will reach Agro Enterprise Centre. From here they can be distributed by truck to the farmers of Nepal.

Exporting to Nepal

Canada and Nepal have a history of trading; Currently Nepal imports 11.06 million dollars of Canadian goods a year (Export Development Canada, 2015). If scare cannons were to be shipped to Nepal the most reasonable option would be to ship them by ocean freighter. First they would leave Margo Supplies LTD located in Calgary, Alberta (Margo Supplies, 2015). The bird bangers would then be shipped to an ocean freighter as commercial cargo where they would continue their exportation to a port in Kolkata, India. India would then ship them across the India/ Nepal boarder via truck. A quote from A1 freighters Canada, worldwide shipping stated that to ship 100 bid cannons this way it would cost approximately three thousand dollars (a1freightforwarding, 2015). The price of one hundred scare cannon from Margo supplies

would cost approximately 28,000 dollars; added to the price of shipping and average markup from zero to thirty percent, the total approximate price of one hundred scare cannons for the Nepalese would be, 31,000.00 to 40,300.00 American dollars (Martins, 1996).

Market and Business potential

With the export of propane scare cannons the potential for future business opportunities could increase. The price of a single bird banger when all the prices are totaled would range from three to four hundred dollars (Martins, 1996). For a Nepalese farmer making 15,000 dollars or less a year, 400 dollars for scaring cannon would be a hard price to meet (Pokhrel, 2007). A potential business opportunity to generate economy in Nepal would be to open a rental shop allowing the farmers to use the scare cannon as they are needed for a lower cost than actually buying them. A benefit of this approach would be the possibility of buying more agro-based Canadian products to rent to the farmers of Nepal.

Global Competition

A large concern many have is to do with global competition of the product being sold. It is common knowledge that the majority of things manufactured overseas, in China for example, are in turn cheaper when sold on the western market than products manufactured here in Canada. The reason for this is that cheap labour is more prevalent there and is considered a price leadership advantage (Brouthers, 2002). A standard model bird scaring cannon goes for 280.00 US dollars when sold in Canada (Margo supplies, 2015). A similar propane bird scaring cannon is available for the price of 145.00 dollars on alibaba.com originating from turkey. Alibab.com is an international business to business trading pub, that advertises Asian (Hu, 2002). Products

are put on this website for advertising purposes only, there are no transactions done directly through this site (Hu, 2002).

Conclusion

Propane scare cannons are an effective means of protection against bird damage for many of Canada's crops (Bergman, 1997). The cannons are made up of a simple design that is lightweight, easy to use and highly durable (Margo supplies, 2015). For approximately three to four hundred dollars American the farmers of Nepal can own their own scare cannon. This product is competitive with other products on the market because of its excellent fuel efficiency, loudness ability to deliver results (Harris 1987). While no manufactures of the propane scare cannons could be found in Canada, Margo Supplies LTD located in Alberta carries them in stock (Margo Supplies, 2015). It is for all these reasons that implementing propane scare cannons in Nepal would be a sound investment.

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