

“Promoting Canadian Agrifood Exports”

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When building a poultry house one of the most important details is providing an efficient ventilation system. Poultry houses are very confined and enclosed spaces than can give rise to many diseases for the birds inside them which can also end up affecting the consumer (Czarick M. , 2015). The key for a good ventilation system is fan selection, being that they have a significant effect on a producer’s ability to maintain the proper environmental conditions throughout the year (Czarick M. , 2015). Moreover, choosing the right fan can lead to saving energy, and thus it reduces labor and production costs. There’s two types of ventilations. Cold system ventilation and hot system ventilation (Farm, 2016). For the cold wheatear ventilation, exhaust fans are used to create a negative pressure ventilation to provide fresh air inside the unit during cold weather (Farm, 2016). Exhaust fans run by using an electric motor and their main job is to expel humid air out of confined spaces so that fresh air can enter through some planned air inlets (Farm, 2016). One of the major goals of every farmer is to increase their production level without affecting animal welfare as well as their pocket. These energy efficient fans make possible high density poultry confinement by reducing air contamination, humidity, and poultry heat stress (Czarick M. , 2015). Some of the issues that Poultry houses experience is the presence of Airborne disease organisms and the increase of very harmful gasses such as Carbon Dioxide. Therefore, this fans can help replace air composition and dilute airborne diseases which leads to healthier market birds, because in the end this is what every farmer looks for.

Canarm is a Canadian company that manufactures and sales a wide variety of ventilation products for houses and livestock worldwide. Exhaust fans are one of these products and they

offer a variety of them as well as energy efficient inlet options. Their models have characteristics such as:” energy efficient, high efficient dual voltage, variable speed, easy to install and low-maintenance solution (Canarm, 2016).” Speed, air moving capacity and energy efficiency of a fan have some relation. Therefore, if the fan speed is reduced but 10%, fan output is also reduced 10” % which leads to reducing power usage by 30% (Czarick G. L., 2009). These suggests that having the option to vary the speed of this fans is a great feature that allows saving energy costs. The FGI fiberglass fan is their only patented exhaust fan model. besides that, all of fan have a low maintenance cost due to their self-draining ability and sloped housing is quick and easy to clean (Canarm, 2016). They also have a low installation cost, high performance and come with great accessories and options to enhance their efficiency. This fans come in different sizes such as: 36’’, 24’ ’ and 18’ ’, to make sure the whole unit is well aerated. Finally, they offer very good warranties of up to 10 years and 1 year on balance of farm which creates assurance to their prospect buying of their effectiveness (Canarm, 2016). Just like these two fans below they have other great models that also work very well to ventilate poultry houses .



Canarm is headquartered in Brockville, Ontario and have over 300 full time employees. This company has a strong relationship with the far East and most of the operations are

centralized in china (Canarm, 2016). This company is known worldwide with operations in Canada the US and China (Canarm, 2016). They also count with an Epicor system that facilitates their distribution worldwide; therefore, allowing all their locations to access accurate and timely information anywhere across the globe (canarm, 2016). Their livestock equipment is mainly manufactured in their location in Ontario, Canada but they also have other manufacturing companies around the globe for their industrial equipment. The prices of their fans range from \$550-\$850 depending on the size (Canarm, 2016). This prices plus the shipping cost can be very high for a small farm producer; However, Nepal offers loans and grants to low income farmers to motivate these farmers to increase their business (times, 2016). Another possible market opportunity can be government-operation farm companies, and commercial market farms. The process of manufacturing this fans goes from designing the fan to fabricating the material (Canarm, 2016). Fabricating this fans require the need of welders to operate this machines, service technicians, and metal fabricators; therefore, increasing their market to other countries could benefit the company economically as well as increasing employment opportunities for other people in Canada. Canarm is a company that wants to keep expanding and something they focused on to keep on strengthening and building new relations with eastern countries, making Nepal a great country with which they could create a market relationship. Besides this Canada and Nepal had hold close relations for many years by which Canada has assisted economically to help Nepal develop.

Nepal is located in southern Asia between India and China. This country is known to be one of the poorest and least developed in the world and around $\frac{1}{4}$ of their population lives below the line (CIA, 2006). Nepal's biggest economy support is Agriculture which provides up to 70% to subsistence, which suggests that improving aspects in this industry can potentially help

increase their economy (CIA, 2006). Unfortunately, the high poverty rates in this country have low-income citizens suffering from malnutrition since high protein foods including the buffalo meat they produce is hard to afford (Nations, 2014). Furthermore, A survey done about Nepal shows that chicken consumption is below average due to the increase of the price and spread of diseases such as the flu (post, 2016). However, despite this fact the survey also explained that poultry industry is rapidly growing despite this impediment, since chicken is still cheaper than meat overall (post, 2016). The growing rate of this industry shows the potential of more small poultry businesses to change to commercial farming, suggesting that Canarm could be a key for this growing farms by selling their fans. The cost of maintenance and construction of a poultry house can be high; although, if Canarm becomes an exporting partner of Nepal, their fans will allow some of this costs to be reduced. In addition, their exhaust fans allow higher density populations of chicken, thus reducing the building cost per unit house (Canarm, 2016). After contacting one of the members of this company he specified the features that made their fans unique and efficient for any type of commercial farm including in Nepal. One of the features they emphasized on was the material of their plastic, since they can support freezing temperatures (Chris, 2016). Since Nepal has mostly cold temperatures throughout the year this fan can work perfectly for poultry houses without getting any damage. Furthermore, Labor costs can also be reduced since installing this fan only requires the opening of a hole in the wall (Chriss, 2016).. Another main issue in Nepal is the lack of electricity due to the increase of power purchase (NEA, 2016). However, 97% of urban areas have energy access, and as mentioned before varying the speed of this fan can reduce energy power usage and energy costs at a long-term.

Nepal's geographic location has caused it to have a very undeveloped transportation infrastructure which makes it harder for imports to reach their destination. Nepal only counts

with one international airport located in Kathmandu and it has no ports since is land-locked (CIA, 2006). Therefore, the only ways to access major poultry companies is either by plane which can have a high cost or shipping it by land to India and then transporting it by train to Nepal. Toronto is the headquarters of a freight company that offers excellent shipping services. Cargo is a company that freights forward globally from port to port and door to door, and Nepal is one of the countries they export too (Cargo, 2016). After quoting the prices of shipping by air only `1 exhaust fan, the price came up to around \$365 which was almost the same as using ocean freight (Cargo, 2016). They charge \$6 per cubic foot and after repeating the same quote of 1 fan this came up to \$301 dollars making it only 65 dollars less compared to air freight (Cargo, 2016). Their transportation planning consists on shipping the fans from Canada to Calcutta (one of India's port), and then shipments would be router from Calcutta to Nepal's major cities by the Indian railway which means that the \$301 isn't the final price (cargo 2016). This suggest that the finally price could ever end up being more expensive or almost the same as air freight. Picking between any of those options will work since the price difference isn't very big. Finally, they also confirmed of taking the fans personally to the destination that the product is being exported too (cargo 2016).

Comparison of Air freight vs ocean freight fee by Cargo of only 1 exhaust fan from Canarm.

Cos of sending 1 Exhaust fan of 36'' of 6 kg	AIR GREIGH (\$)	OCEAN FREIGHT (\$)
RATE/KG or /cubic foot	4.35/kg	6.0/c-f
cost per fan before takes	194.71	211.89
Terminal and screening fee	96.00	N/A
Processing fee	75.00	75.00
surcharges	0.00	0.00
Pick up charges	0.00	N/A
Solar fee	N/A	15.00
total	365.71	301.89

Another main factor about exporting these fans is the documentation required from the shipping company and customs. For a company to export from Canada it requires two things, first the item exported has to be part of the list of goods allowed to export and second the company needs to obtain a Business Number (BN) issued by the Canada Revenue Agency (CRA) for an import/export account (CBS, 2016). Since electrical equipment is being shipped, specific details have to be provided about the fans such as: year, make and brand information. In addition, if this is a new item being shipped to Nepal, it is required to provide the invoices for these new items. According to the department of customs of Nepal, in order to import goods, they first have to be part of their list of allowed goods, which includes Canarm fans (finance, 2016). Furthermore, a declaration form must be filled out along with an application of issue by Canarm (finance, 2016). Finally, Canarm should have a letter authorizing the destination agent to clear their shipment and their personal contact information, including address and phone number in Nepal (cargo, 2016)

In Nepal, there are 3 different types of poultry production systems. 54% of the poultry population are tended to commercial poultry farms located in mostly urban areas and the other 2 industries are village backyard production (Nations, 2014). For backyard production, there is a semi scavenging system and a scavenging system. The semi-scavenging system consists of government operated farms that sell to poor poultry farmers (Nations, 2014). Canarm could use either of these producers as targets to sell their exhaust fans. On one side commercial is rapidly growing and one thing the government wants to insatiate is for the backyard producers to grow as well. Nepal's major poultry producer is the city of Chitwan, producing Rs1.97 billion worth of chickens, Rs5.91 billion worth of eggs and Rs2.07 billion worth of fowl. Sales of chicken manure amount to Rs213 million annually (post, 2016). Following Chitwan is Kavre, Dhading,

Kathmandu and Kaski Making this the target cities to export. Some of the big poultry businesses known in this city that could be interested in Canarm products are: Pancha ratina, Kantipur and Joshi farms. These companies are in the major cities underlined and they register farms of around 250-250,000 birds (Nations, 2014). On the other side backyard farms are mostly run and are produced in the city of Biratnagar (Nations, 2014). These farms as well as government-run farms could also be some possible targets since the purpose is for every farmer to overcome poverty challenges and grow their business. Nepal invests around \$286 million for this industry and employs around 70,000 workers, therefore investing in the growth of this industry will benefit thousands of people (Nations, 2014).

In order to obtain the birds maximum production, Nepalese poultry producers will have to make a suitable house and ensure a good environment. The cost of expenditures for a commercial poultry house include all the equipment, tools, feed, vaccines as well as fans. The number of fans required from commercial poultry house depends on the number of birds. An example of 5000 layers was used to calculate profitability. After speaking to Canarm's employee he suggested that for a farm of 5000 layers is required a total of 6 exhaust fans of different sizes. All this information plus the costs to export the fans are explained in the tables below.

Total Amount of expenses in yearly in Cad

Description	Cost per unit	Amount	Total cost
Construction of unit house for 5000 layers	3,50 /sqr-footr	12,000/sqr-foot	42,000
Equipment and tools	3.00	60	\$180
Nutrition	0.46	5000 kg	27000 a year

Fans + shipping	36''=850 24''= 635 18''=550	6: - 2 off 36', -2 off 24' - 2 off 18''	4070 +2100shipping = 6070
Price per 100 chickens	125	50	6,250
electricity	3.67/gallon	33,800 gallons annually	124,046
Total cost of expenses per year			205,500

Table of income yearly in Cad

Description	Cost per unit	Number of eggs a year per layer	Total number of layers	Total
Sale of eggs after 1 year	0.147 per egg	305	5000	224,174
Sales of chicken manure				2602
Total income annually				226,778

Economic analysis of profit yearly in Cad

Total expenditures	205,500
Total income	226,778
earnings	21,278

. The total amount of expenses was obtained from the values provided by the FAO (Nations, 2014). The Income was calculated based on numbers also provided in their website to finally obtained results that showed the earning at the end of the year. These results can be realistic but not every value was exact, besides values of factors such as egg per hatching and energy can fluctuate. With more time, a further study must be made to estimate the exact earning produced by this business.

The marketing strategy that Canarm should use depends on each poultry market. If the fans are going to be sale to the government- production farms a good market strategy is by lobbying. Lobbying is a way of seeking to influence a politician on an issue. As is known Canadas relations with Nepal have always been strong and a common goal for both countries is to increase Nepal's development. If a member of the company arranges an appointment with one of these governors what will happen most likely is that they agree. Canarm products have been produced for around 30 years and are known worldwide besides having china a major user and manufacturer of their products is a great way to persuade Nepal about purchasing them. Reaching village backyard farmers is a little harder since most of them have no access to a lot of technology. Therefore, a way of selling this product is in person. Agriculture fairs are great marketing strategies since the farmer gets to see and used the product, and thus conclude on how

much it could benefit them. Furthermore, this could also be used as a marketing strategy to sell commercial poultry farmers.

The government of Nepal offers low income farmers many subsidies and loan in order to incentive them to improve their lifestyle and grow their business (world bank, 2014). This subsidy is what will allow farmers to afford this fans and additionally to build their commercial farms. One of the subsidy barriers this farmer can present is corruption. Unfortunately, third world countries as Nepal have very weak laws, therefore many of the subsidies being offered can end up getting stolen or only one percent of the money is given. Another main barrier is bureaucracy. Many of these farmers are illiterate since they couldn't access education for a wide variety of reasons. And usually when the government offers money it requires the person to fill out a lot of documentation and go through processes that lead them to not do it. These types of regulations are necessary so that the money can go to the right person, however most of these farmers are not used to those types of procedures which leads some to avoid them.

Nepal gets imported goods from different countries, ventilation systems for poultry housing. India is one of the major exporters of Nepal, however these country is not a competition for Canada since the incident with chicken flu. India used to export chickens to Nepal until many Nepalese citizens got sick from an influenza that came with those chickens, since then Nepal stopped receiving anymore livestock or livestock equipment from them. One of the poultry fans equipment available in Nepal is the Tunnels fan. These fans are exported by the company Agromax from the Netherlands. These fans come with a variety of features that are very similar to Canarm fans which makes them a global competitor. Some of the features they are similar in are; low power consumption and low installation costs. However, what makes Canarm fans unique is the material they use since it can withstand very any type of temperature. Furthermore,

Canarm won the award of best manage companies which makes them stand out from any other company worldwide and.

In general, the entire research and study done to potentially export this exhaust fans to Nepal gave good results. The product chosen is overall a good, and it leads to help to improve the agriculture sector by helping them increase their poultry productivity. Even though is possible to conclude that exhaust fans can be a good product to export since it leads to earnings further studies should be made. Commercial farmers should try the evaluation of the product to obtain more accurate results and the actual power usage safe overtime. This would be very useful for small farmers being that Nepal is still developing and they require products that can help them enhance their productivity to a large scale to overcome their economic challenges.

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