

CANADIAN EXPORTS ASSIGNMENT: PRE- FABRICATED HEN HOUSES

Canadian Exports Assignment: Pre- Fabricated Hen Houses

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## **Part 1**

### **Product Description**

The product that would be sold is an all-inclusive package that has everything necessary for a small-scale egg production. This would include a hen house, and a cage system that would be capable of housing 300 birds. This product would be assembled in Canada, and then shipped to Nepal where it would require only a cement foundation to be laid before entering production. The concept of this system is based on a project done by Burnbrae Farms for an orphanage in Belarus. The cost for the entire system would be around \$15000 (J. Heuthorst, personal communication, Oct. 4 2014), which would include shipping, and start-up costs required to begin production.

### **Cages**

The cages used for this egg system would be Chore Time 4 Tier Prima cages. This is an A Frame style cage, which is useful and relatively inexpensive. The system would be maintained by hand, without any reliance on electricity, automatic feeders, or automatic egg collection. As this is a small production unit, daily labour would not be intensive; one person could easily maintain the unit. The water would run through water lines to each cage, originating from a barrel that is filled up once daily. Chore time is an American based company, located in Milford, Indiana (C-T website, 2014). There is some Canadian ownership in this company however, and the Canadian distributor for these cages would be J. Dean Williamson, located in London, Ontario.

### **Hen House**

The hen house design is based on a design used by Burnbrae Farms, who constructed a similar system for a Belarusian orphanage in 2013. This system allows the orphanage to maintain their own sustainable food production, and contributes to economic viability through egg sales.

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When completed, the hen house would be 20' long by 12' wide. There are two entrances to this building; one being a large garage door at one end of the barn, the other being a man door. There are two rooms; a large one where the birds are housed, and a small entrance room, in which people would be required to enter prior to entering the flock. The frame would be constructed of lumber, insulated, and finally be completely covered in sheet metal on the inside and outside. Ventilation systems for this barn would be all-natural and not require any fans. The lighting system could be implemented to use either natural or artificial lighting. In areas where electricity is not available, building modifications to provide natural lighting can be made.

### **Inputs**

Purchasing this product would provide the farmers with the housing system, however there are other inputs that must be purchased. Resources such as water, feed and the bird itself would need to be purchased, creating a continual cost associated with running this system. A quality source for these inputs would need to be located within Nepal. Exporting these from Canada would not be cost effective. Some of these products such as the feed could be found on Alibaba.com, however finding hatcheries that sell 19 week old pullets in Nepal online were difficult to find, and someone who is more familiar with poultry in Nepal would be able to source pullets easier.

### **Benefits to Canada**

The exportation of this system to Nepal would have some meaningful benefits to Canada. Since it would be built in Canada before it is shipped, Canadian materials would be used. As well, the retail of these materials would be through Canadian companies such as Home Hardware, and cages from J. Dean Williamson. These materials would include the lumber used in the frame-work of the building, insulation for the walls, and hardware such as screws and nails. Since the interior and exterior walls, along with the

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roof would be covered in sheet metal, this could be provided by Ideal Roofing, in Ottawa, Ontario. This would help the Canadian lumber and steel industries, and retail sectors for these products. Also, the manufacturing of these units would require labour. This may create a few jobs in Canada. Someone would need to build these, along with people to oversee sales and shipping aspects, making multiple job creations likely. Along with this job creation, it would help Canada's poultry industry reach into Nepal. This would allow our leading edge poultry industry, although small in comparison to the rest of the world, have a larger global presence.

### **Conclusion**

This unit would provide the Nepalese egg farmers with a quality egg production system. These pre-fabricated barns would be of high quality and would provide Nepalese farmers with technology that we have in Canada. The production of these units would benefit Canada, since the majority of materials used would be Canadian and everything would be purchased from a Canadian distributor. Also, in order to build the barns, labour would be required therefore creating more jobs in Canada. This would also help Canada's agriculture industry branch out into another part of the world by giving a product that would improve the quality of life for Nepalese farmers. In conclusion, there are many benefits to Canada by producing these pre-fabricated hen houses to export to Nepal.

### **Company Contact Information**

**J. Dean Williamson**

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CANADIAN EXPORTS ASSIGNMENT: PRE- FABRICATED HEN HOUSES

e-mail: [jd@jdwspoultry.com](mailto:jd@jdwspoultry.com)

1922 Mallard Road, Unit 1

London, Ontario - Canada

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**Ideal Roofing**

\*Ottawa Office

1418 Michael Street

Ottawa, Ontario

K1B 3R2

Tel: (613) 746-3206

Toll-Free: 1-800-267-0860

Fax: (613) 746-0445

Email: [info@idealroofing.ca](mailto:info@idealroofing.ca)

**Home Hardware**

Many across Canada, most beneficial one would be decided by location these units are being built.

**JL's Home Hardware Building Centre**

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575 Wellington Street West

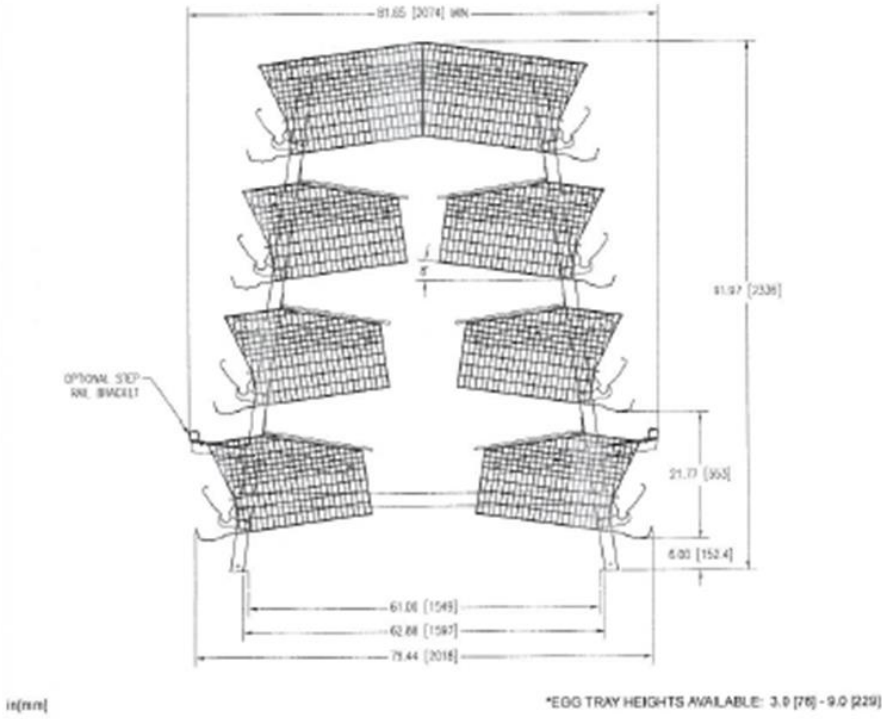
Guelph, ON

N1H 8L8

Phone: (519) 822 - 8230

Fax: (519) 822 - 0288

# 4-HIGH DBS PRIMA-TRIM 23.1 DEEP

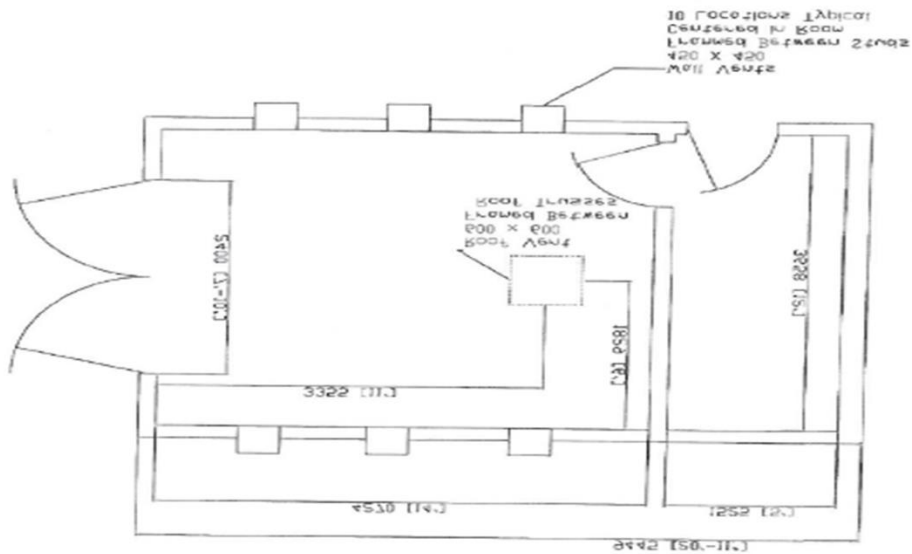
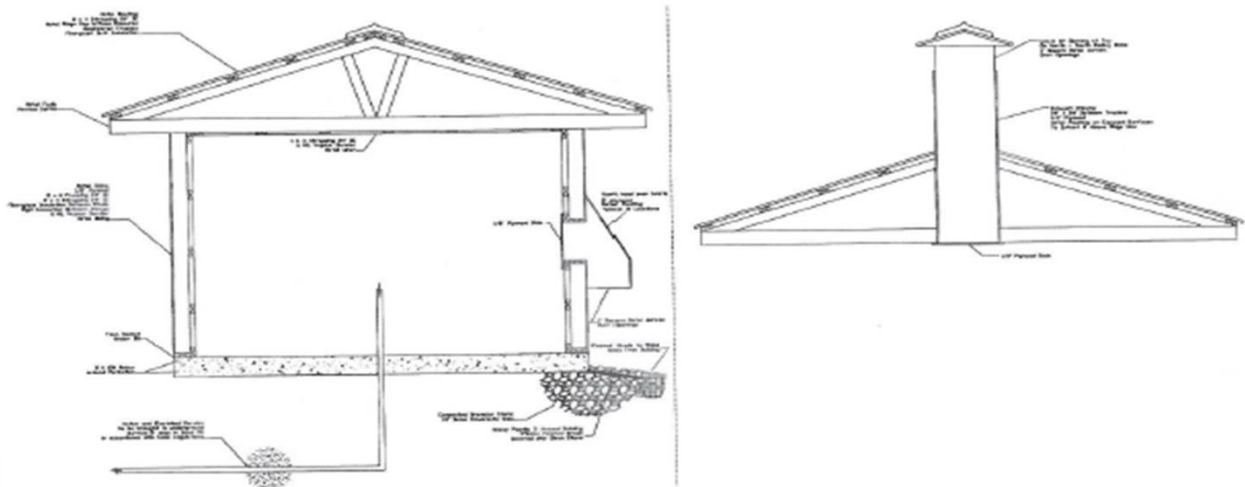



SLANT FRONT	CAGE WIDTH, SECTION LENGTH	FLOOR AREA	BIRDS PER CAGE	BIRD SPACE		STRAIGHT FRONT
				sq. ft.	cm <sup>2</sup>	
STANDARD	24" [610mm] 8' [2.44m]	554.4 sq. ft. 3576.77 cm <sup>2</sup>	8	69.3	447.10	OPTIONAL
			9	61.6	397.42	
			10	55.4	357.88	

This image

from a chore time catalogue. Scanned and received by e-mail from John Heuthorst at Burnbrae Farms.

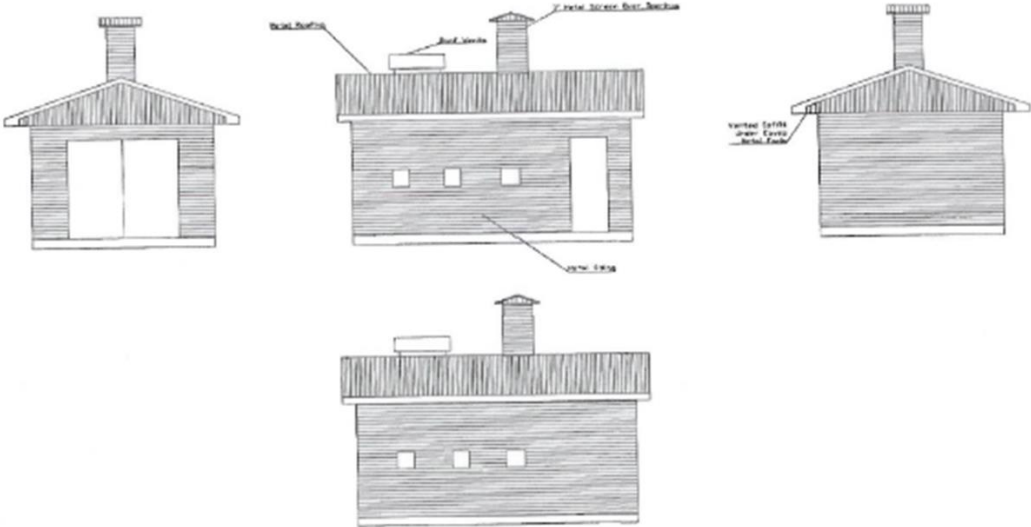
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Above images sent by e-mail are the design of barn. Sent from John Heuthorst from Burnbrae Farms.



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Rough drawing of outside of barn sent from John Heuthorst at Burnbrae Farms.

## Part 2

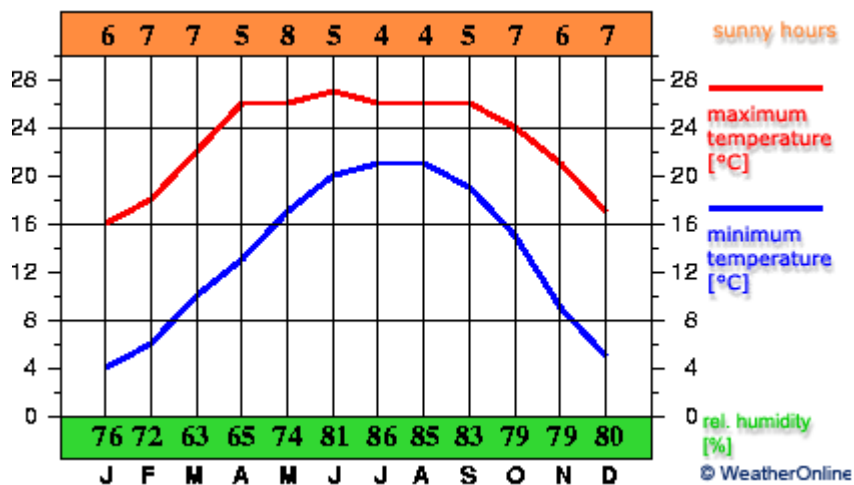
### Introduction to Nepal

Nepal is a small country located in south Asia, in between China and India (Welcome Nepal, retrieved 2014). It has three geographical regions; the Himalayan region, the Mid Hill and the Terai regions.

Nepal has four distinct seasons, with a milder climate than seen in Canada (Weather online, retrieved 2014).

Tribhuvan Intl. Airport (1337m) temperature graph from Weather Online

(<http://www.weatheronline.co.uk/weather/maps/city?3&WMO=44454&INFO=0&PAG=0&LEVEL=160>)



Agriculture in Nepal accounts for 39% of the GDP, along with 66% of employment opportunities in Nepal (DOA Nepal, 2014). Livestock agriculture makes up for approximately 32% of the agricultural GDP (Biju, 2013). The growth rate in the livestock sector in Nepal is between 3.5% and 5% per year (Biju, 2013). Nepal had a population of 6 643 350 laying hens from 2004 to 2005 (Sharma, 2010). The number has been increasing gradually, with 50% of the layer population in commercial housing, and 50% of the layer population in small backyard flocks (Sharma, 2010). Some major issues that the Nepalese poultry

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industry is facing is their lack of biosecurity, low production (Sharma, 2010). Farmers are not as profitable due to these factors (Sharma, 2010).

### Shipping

Shipping these units from Canada to Nepal could be done via 40' shipping crates. This could be shipped by the Canadian company NVO Consolidators Canada which would be able to ship one of these crates from Canada to Nepal for between \$3000 and \$4000 (<http://www.nvocc.ca/nvocc/>). This would work out to around \$1500 to \$2000 per unit shipped. The majority of the distance would be by an ocean tanker, followed by land transport to the final destination.

## TORONTO NVOCC

### Contacts

6300 Northwest Drive, Unit 2     Dorothy Johnston - Director, Ocean Operations

Mississauga ON L4V 1J7     Angela Hakkesteegt - Ocean Export Co-Ordinator

Tel: 905-362-0249     Eduardo Melo - International Sales Manager

Fax: 905-678-6184     Richard Thornton - International Agency Network Manager

### **Benefits to Nepal**

By selling these pre-fabricated barns to Nepal, it would greatly improve their egg industry. There are many problems that the Nepalese poultry industry is facing such as high incidence of disease, and poor management, which end up causing poor production (Sharma, 2010). These pre-constructed barns are targeting the 50% of the egg farmers who have small backyard flocks. Having better egg production systems would allow these farmers to control their flocks and would help to solve these problems.

### **Disease**

Biosecurity and disease control are very poor in Nepal. Nepal has a high rate of bird diseases; however, specific numbers are unclear due to poor record keeping (Sharma, 2010). Nepal has experienced many disease outbreaks, for example Newcastle's in 2009 (TPS, 2009). Nepal experienced its first confirmed case of H5N1 in mid-January 2009 in the Jhapa district (IRIN, 2009). Since then there have been multiple other cases of the bird flu, the most recent being February 13<sup>th</sup>, 2014 (PHAC, 2014).

Biosecurity is a very important aspect of disease control; three major components of biosecurity include traffic control, isolation, and sanitation (Sharma, 2013). With small, backyard flocks being free range, it is very difficult to isolate the bird's potential disease threats. They can come into contact with other backyard flocks, wild birds, other people, and animals who have visited nearby farms. This makes it easy for diseases to be transmitted from one farm to the next, making it difficult to control outbreaks. Isolation is important to help with disease control (CPCL, 2008). This includes wild animals, other birds, people, and other foreign objects that could potentially carry disease into the flock (CPCL, 2008). In a phone conversation with John Heuthorst from Burnbrae farms, a large amount of stress was placed on how biosecurity or lack thereof has a very negative effect on production. He mentioned that no matter the size of an operation, biosecurity is essential. Biosecurity is a group effort, if an individual farm

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practices poor biosecurity; they will not only hurt themselves, but everyone around them. This is the concept of group immunity (J. Heuthorst, personal communication, Oct. 4 2014).

Having high disease rates can have dramatic effects on the production of eggs on a farm. Through conversations with John Heuthorst, it was made very clear that some of the easiest ways to increase production is by maintaining effective biosecurity practices. Biosecurity programs may have a high start-up cost, however having strong disease control due to biosecurity will save money in the long run (Sharma, 2010). Successful egg farms in Canada such as Burnbrae Farms, have strong biosecurity measures which proves that the extra start-up cost must be worth it by lowering the risk of future problems (J. Heuthorst, Personal Communication, Oct. 4, 2014).

Since the product is targeting the small backyard flocks in Nepal, all of the biosecurity benefits that it offers would have a direct effect on the least bio-secure group of farmers. The design of this hen house would greatly increase biosecurity measures, firstly by isolating the flock from outside threats. The flock would no longer be free range, as backyard farms typically are (Sharma, 2010). The advantages of this would be that the chickens would be isolated from direct disease transmission from other domestic birds, wild birds, animals, or people.

### **Production**

Another problem that Nepal is facing is its lack of food availability. Malnutrition in Nepal is very prominent, and is among the highest in the world (WFP, 2014). With lack of food security, there needs to be more food production to meet the needs of the people. Over the last 15 years, there has been a significant reduction in food insecurity, however 25% of households are still under the poverty line (NPCCBS, 2013). Increased egg production would help the Nepalese people, as eggs are a high-quality source of protein, vitamins and minerals. Protein from eggs has the highest biological value (Campbell, retrieved Nov. 23, 14). This is something that many undernourished people in Nepal could benefit from.

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By using this pre-fabricated hen house, the production of these farmers would increase. Firstly, the barns would provide these people with the ability to sustainably farm 300 birds with non-intensive labour. The amount of work required would only consist of mortality checks, feeding the lines, filling the water barrel, and collecting the eggs. Also, having this type of system would allow for a structure on the routine of these farmers. These improved housekeeping practices would increase bird health. With healthier birds, producing more eggs combined with the ability to care for more birds with less labour, farmers would see a significant increase in the egg production, and therefore would gain more profit.

### **Cost Breakdown**

The price to produce one of these units would be as follows:

\$1500 to \$2000 to ship each unit (remember each 40' container can hold 2)

\$3000 for cages

\$7000 to build hen house building itself

\$2000 (estimate) for cement work in Nepal

\$1000 for miscellaneous items needed

**\$15000 total price**

### **Payback Time**

In order to figure out how long the Nepalese farmer would be in debt before seeing some profit, I contacted John Heuthorst at Burnbrae farms to provide an estimate on the production that could be seen in this type of system. The prices were all converted to Canadian dollars in order to make the math easier.

Egg price per dozen = \$1.30 ([http://www.numbeo.com/cost-of-living/country\\_result.jsp?country=Nepal](http://www.numbeo.com/cost-of-living/country_result.jsp?country=Nepal))

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Feed price per kg when bought in 50 kg bags is \$0.30

(<http://www.alibaba.com/countrysearch/NP/animal-feed.html>)

Pullet price could not be found, however was estimated at \$6.60 per 19 week pullet (J. Heuthorst, personal communication, 2014)

Having this information, it was figured out the revenue that would be made by this system per year.

Per Bird

26 dozen Grade A eggs per year (3% under grade excluded)

Price of eggs in Nepal being \$1.30 per dozen

$26 \times 1.30 = \$33.80$  per year per bird total

However that is before input costs of the bird and feed

White leghorn birds consume 1.4kg feed per dozen eggs, each bird would consume 38 kg of feed per year (J. Heuthorst, personal communication, 2014). So by multiplying the cost of the feed at \$0.30 per kg by the 38 kg of feed consumed would mean that \$11.40 would be spent on feed per bird per year. The other input cost we need to take into account is the 19 week old pullet price, however we could not find its price online in Nepal, so we estimated the price around \$ 6.60. By adding the pullet price at \$6.60 and the feed cost at \$11.40, a total input cost per bird per year works out to \$18.00.

In order to get the total amount each bird would earn, take the total profit of \$33.80 and subtract the input of \$18.00 to get \$15.80 profit per bird per year. Taking your \$15.80 and multiplying it by the 300 total birds gives \$4740 profit per year on this system. So by taking the start- up cost of the system and dividing it by the yearly profit would give a rough estimate of how long until the system has paid for itself. Taking the \$15 000 divided by \$4740 equals 3.16 years. However, it would take slightly

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longer to pay it back since interest on the loan and cost of living would be taken. A reasonable time for this system to be paid back would be within 4 years, leaving the farmer with a pure profit system that has all the benefits of biosecurity, ease of use, and increased productivity. These benefits may require a higher start-up cost, however would still be paid back for within the 4 year time period, giving a significantly increased egg production and profit to that farmer every year after.

### **Competitive Products**

Searching on Alibaba.com, I was able to find multiple other chicken coops that were pre-constructed for sale, however, none of which were very similar to this one. Many of them were more suitable for a hobby of 5-10 chickens, and would not provide a high amount of biosecurity for the birds, as they were designed to have the birds free range outside, returning to sleep and nest. The main idea of this pre- fabricated hen house was to increase biosecurity of the animals, reduce labour, which would increase production and the number of birds. The other hen houses do not seem to have the same goals in mind and would less suitable to accomplish these goals.

### **Overall Recommendation**

Overall, I would recommend that this product would be exported from Canada to Nepal. By looking at the needs of the Nepalese farmers and people, and comparing them to what benefits these pre-fabricated hen houses have to offer, it appears that they would be very helpful to Nepal's agricultural industry. By getting biosecurity in these small farms under better control, it would decrease the disease incidence in the rest of the country due to group immunity. As well by making it easier for farmers to take care of the birds, along with better production overall, the amount of eggs produced would be increased. This would greatly benefit Nepal due to the malnutrition rate being high. Exporting this product to Nepal would be mutually beneficial to both countries.



## CANADIAN EXPORTS ASSIGNMENT: PRE- FABRICATED HEN HOUSES

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J. Dean Williamson poultry for cages

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

Chore time information

<http://choretimepoultry.com/about.php>

Burnbrae farms Belarus project

<http://www.burnbraefarms.com/blog/page.asp?id=24>

Ideal roofing

[http://www.idealroofing.com/english\\_canada/html/contact\\_us.php?ct=DFGSDFHSG11](http://www.idealroofing.com/english_canada/html/contact_us.php?ct=DFGSDFHSG11)

Tel: (613) 746-3206

Home Hardware Store locator

<http://www.homehardware.ca/en/dealer-microsites/1745-5/contact-information.htm>

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Men's Health Lists, Eggs: The Perfect Protein, Adam Campbell,

[http://www.menshealth.com/mhlists/foods\\_that\\_build\\_muscle/Eggs\\_The\\_Perfect\\_Protein.php](http://www.menshealth.com/mhlists/foods_that_build_muscle/Eggs_The_Perfect_Protein.php)

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