

COST EFFECTIVENESS ANALYSIS (CEA)

This section summarises our CEA, which weighs the cost of implementation against the welfare benefits for different animals using Charity Entrepreneurship's weighted animal welfare index or welfare points for short (Sarek 2018). The results of this CEA should be taken in light of the limitations of the model and of the welfare points index system (Sarek 2018) it uses for its welfare estimates. We use both an internal sheet estimate and external programme for a confidence range estimate, both models are available by request. However, we feel that the discussion provided in this document more clearly communicates the updates we made based on our findings. These make the uncertainty in our estimations clearer to readers unfamiliar with CEAs compared to presenting the raw numbers. For further discussion of some of the challenges with CEAs, see the attached sources (Reese 2016; GiveWell 2017; Entrepreneurship n.d.).

OVERVIEW

The effect of this ask and each of its elements are driven in large part by the size of the imports for each product. Some products such as shark fins, live-plucked down and exotic leather are imported in low enough quantities that the combined effect of a ban on these products makes up less than 1% of the value of a cruel products ban. Whereas others such as frogs legs, fur, caged eggs and foie gras makeup 74%, 11%, 12% and 3% respectively. This makes the inclusion of some products in the import ban much higher priority than others. Another element the cost-effectiveness analysis highlighted is the importance of flow through effects for different products. Frogs legs for example, would have a large direct impact given the number of frogs that are imported but would also reduce the number of insects used in their feed. The sheer number involved, ~6 billion, means that this effect has the potential to dwarf most other products, depending on one's views on the importance of insects and their welfare during farming. Some areas that could improve this cost-effectiveness analysis include a more in depth examination of how demand for by-products of other industries such as leather or cheese trimmings affect the production of the main product and modeling the effect of price changes on supply and demand. These effects have been ignored or modeled simply as we don't expect additional research into these areas to significantly affect the value of the import ban.

Output	GOOGLE SHEETS MODEL (2 significant figures)	GUESSTIMATE MODEL
Total WP affected per \$	115	90 (15 to 320)
Total WP affected per \$ (including counterfactuals)	91	N.A
Total Welfare value per year	69,000,000	61,000,000 (35,000,000 to 110,000,000)

WELFARE POINTS ESTIMATE

Using Charity Entrepreneurship's welfare points system, (Sarek 2018) we have attempted to quantify the welfare impact of this ask. As this ask aims to ban the import of each product the welfare points estimate for each product is an overview of the conditions different animals are raised in. Some of these are estimates provided in charity entrepreneurship's original piece on welfare points whereas others such as frogs we have estimated ourselves. These should best be viewed as the moral value of preventing an animal from being reared through particular methods.

OTHER DIRECT AND INDIRECT EFFECTS

The main indirect effects of this ask are the shift in consumer demand to substitute products. For some products this is animal products as a whole, which is then mostly assumed to be chicken, but for items such as foie gras we have more accurate data available. Another important indirect effect is the reduced demand for feed for frogs and reptiles reared for exotic leather. As both of these species consume other animals the reduced demand for feed will also reduce consumption of other animal products, in this case insects, fish and chicken. There is some uncertainty surrounding the effect of both reptile and fox/mink feed as these species are often fed by-products of animals raised for human consumption. This means that eliminating the demand for these products probably wouldn't reduce product as much as the tonnage of feed would initially suggest.

COSTS

An estimate for costs was provided by sentence politics but will likely vary depending on future strategic considerations and their ability to fundraise. If they manage to raise more funds for the initiative this may increase the probability of success via a better funded public campaign. However as the same costs are assumed across asks this estimate won't effect the relative promise of any particular ask.

AFFECTING FACTORS

We conducted a sensitivity analysis in our Guesstimate model to find the inputs to which our model is most sensitive to. An intuitive explanation of sensitivity analysis is that the inputs highlighted are the figures that have the potential to most affect the final figures.

Parameter	Affecting factor 1	Affecting factor 2	Affecting factor 3
Total WP affected per \$	Probability of success ($r^2=0.31$)	Time Until counterfactual improvement (years) ($r^2=0.19$)	% of frog frog legs ($r^2=0.07$)
Total Welfare value per year	frog imports kg (average between 1990-2006) ($r^2=0.25$)	% of frogs that are farmed ($r^2=0.25$)	% of frog frog legs ($r^2=0.15$)

The two most prominent affecting factors for the overall model are the probability of success and the time until counterfactual improvement. These both reflect areas of high uncertainty that could dramatically affect the impact of the ask. Both of the estimates for these are subjective, although we are able to gather some polling data to predict the likelihood of the initiative succeeding. These should be factors that should be carefully monitored and if there is resistance to the ban from the public or some indication that the policy will pass without interference from sentence politics then another ask may look more promising, as is true for all asks we have considered.

For the total welfare value of the policy, all of the most sensitive parameters surround frog related inputs, particularly those used in the calculation of wild and farmed populations. The

reason the model is more sensitive to these is because the ban on frog legs makes up a large proportion of the value of this ask and the level of uncertainty with these estimates is higher. Particularly with what percentage of imports are from farmed rather than wild caught frogs. Further discussion on this is available in the main report but in brief this estimate is informed by FAO estimates on the % of frog production is from aquaculture in 2002, growth rates of wider aquaculture and adjusting for the main countries the Switzerland imports from.

ASSUMPTIONS

Our CEA makes several assumptions in creating the model. Some of these may increase the asks estimated cost-effectiveness while others may decrease it. Others capture other considerations for the farmer that are not captured by the way cost-effectiveness was modeled.

- The elimination of foie gras would make foie gras farms shut down as the liver makes up the vast majority of the value of the goose or duck
- The relative weight of different products approximates contribution to farming additional animals. A better approximation would be what percentage of financial value so this is likely to be an underestimate.
- Cow and calf leather is a by-product of the industry and leads to no or very few additional cows farmed. If this is false then the value of the CEA would decrease slightly but not significantly.
- Caged eggs are imported at the same proportion of EU production before a ban and egg demand would shift between barn and free-range eggs at the same ratio as EU production
- Reduced demand for shark fins translates into reduced shark fishing on a roughly one to one basis. This is likely to be an overestimate, although given the numbers has negligible bearing on the overall value of this ask.
- All exotic leather comes from crocodiles. If this is false, as it likely is, then the number of farmed reptiles affected by this ask would be larger. However given the already small number it would not greatly affect the promise of this ask if this estimate is an order of magnitude or two lower than the true figure.

Entrepreneurship, Charity. n.d. "Cost-Effectiveness Analysis." Accessed March 24, 2021.

<https://www.charityentrepreneurship.com/cea.html>.

GiveWell. 2017. "Cost-Effectiveness." 2017.

<https://www.givewell.org/how-we-work/our-criteria/cost-effectiveness>.

Reese, Jacy. 2016. "Some Thoughts on Our Cost-Effectiveness Estimates." April 21, 2016.

<https://animalcharityevaluators.org/blog/some-thoughts-on-our-cost-effectiveness-estimates/>.

Sarek. 2018. "Is It Better to Be a Wild Rat or a Factory Farmed Cow? A Systematic Method for Comparing Animal Welfare." 2018.

<https://www.charityentrepreneurship.com/blog/is-it-better-to-be-a-wild-rat-or-a-factory-farmed-cow-a-systematic-method-for-comparing-animal-welfare>.