Giving Evidence
Enabling giving based on sound evidence

Burning Questions Initiative: Prioritization Report
April 2017

Context

APOC Fund is interested in setting up an initiative to identify the most important 'Burning Questions' in intensive farm animal production (IFAP; also known as concentrated animal feeding operation, CAFO), with a view to getting those questions answered and thereby upgrading the effectiveness of work in IFAP.

APOC Fund with Giving Evidence asked experts in IFAP to submit their 'burning questions' and then asked the group to prioritise them. This document lays out: (1) the method used, (2) the results of that prioritization process, (3) details of respondents. In the appendices are further details, including the full list of all the questions.

Aims of the Exercise

- To seek the views of experts in IFAP about which questions in IFAP are important and unanswered; and to identify the questions and topics which those experts think are highest priority;
- To disseminate the results to researchers and funding bodies and thus maximise their impact on the future research agenda.

Contents

1. Method

Identifying the Burning Questions

In order to understand the issues and questions that research needs to address, APOC contacted a number of experts in the field and invited them to submit their 'burning questions'. APOC and Giving Evidence provided guidance to them on doing this. Two requests for questions were made over a period of two months.

44 people invited to submit questions	27 people submitted questions	65 questions submitted in total

The exercise was conducted largely in accordance with principles applied in James Lind Alliance priority setting partnerships JLA Method adapted for use in the area of intensive farming. Preparation for the PSP began in late 2016; it concluded in April 2017. (Fig.1)

Figure 1- Summary of the process

Stage 1	Conduct interviews to ascertain appetite for initiative (two stages, in 2015 and 2016)
Stage 2	Collect burning questions from stakeholders (late 2016)
Stage 3	Conduct prioritization with stakeholders (Q1 2017) {In advance, two people in Giving Evidence's team, unconnected with the project, piloted the survey to see how long it took and check that the instructions were intelligible etc.}
Stage 4	Analyze results (April 2017)
Stage 5	Publicize and promote (hereafter)

At Stage 2, two funders opted not to submit their own 'burning questions', but were happy to be involved in the prioritisation at Stage 3.

Conducting the prioritization

Once the experts had submitted their 'burning questions', APOC asked Giving Evidence to run an exercise in which the experts could see all the questions submitted and identify those which they feel are more important to answer. APOC identified the 24 experts across the field to invite to participate: details of their location and specialisms are given in Appendix 2.

We agreed to run the prioritization process online, given the geographic disbursement of the participants.

The questions were presented precisely as submitted, and all of them were included. In some cases, Giving Evidence suggested some clarifications which were included in the material sent to participants. Questions were arranged into a random sequence to discourage bias. All participants saw the same sequence.

Participants were asked to rank their top 20 questions in order of priority. The survey was kept open for two months.

Analysis

We analysed the results in three ways:

a) Citation frequency: simply the number of times that a question featured in the top 20 of any expert. This is unweighted, i.e., does not take account of the how that participant ranked the question.

b) Weighted score: if a question was rated Number 1, it scored 20 points; if it was rated Number 2, it scored 19 points; if a question was rated Number 3, it scored 18 points, and so on.

c) Categories: we also analysed the responses (both by citation frequency and weighting) according to the geographic region of respondent, their type of institution (e.g., NGO, academia), and we categorized the questions. The categories are:

- Animal Welfare
- Consumption & Demand
- Externalities & Economics
- Specific kinds of animals: Chickens
- Specific countries: India
- Specific countries: China
- Key actors: Governments, large public institutions, int'l bodies
- Key Actors: Meat industry & Multi-national corporations
- Environmental & Ecological Impacts
- Key actors: NGOs, campaigners, donors

The results are presented in each of these three ways below.

2. Results

Question 11 was selected as the number 1 priority, both in the weighted and unweighted analysis.

Question 11: *What kind of public domestic policies and financial support do major industrial livestock producing countries provide [to] global meat processors and retailers to increase their global power and production? How many countries are using similar policies and financial measures? What have been civil society efforts to stop such support and measures? How many of such efforts have been successful? What were some of the key factors that led to their success? Those that failed, what were the key factors that could have contributed to the failure? Based on this analysis, identify key proposals for stopping public financing of industrial livestock production and policy measures and campaigns that could help stop the industry's global consolidation and power. The aim is to differentiate these proposals by regions or identify to what extent such measures would be globally applicable.*

Results by weighted and unweighted responses

In fact, the two ways of looking at the data yield very similar priorities: of the seven questions which rank top in the weighted analysis, six are in the top seven of the unweighted analysis, and vice versa. The following table refers to their question number:

Top seven questions by citation frequency (unweighted analysis)	Top seven questions by weighted priority
11	11
7	17
23	7
17	6
29	23
33	32
6	33

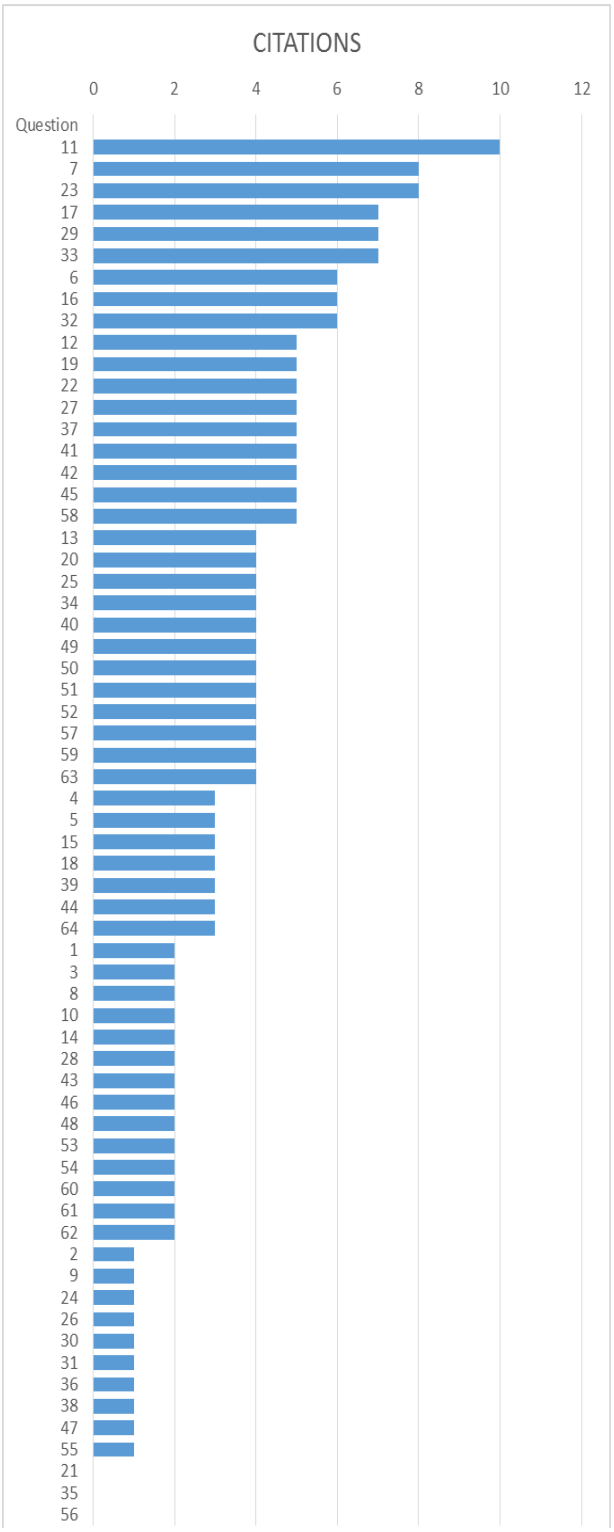
Those top eight questions are (by question number):

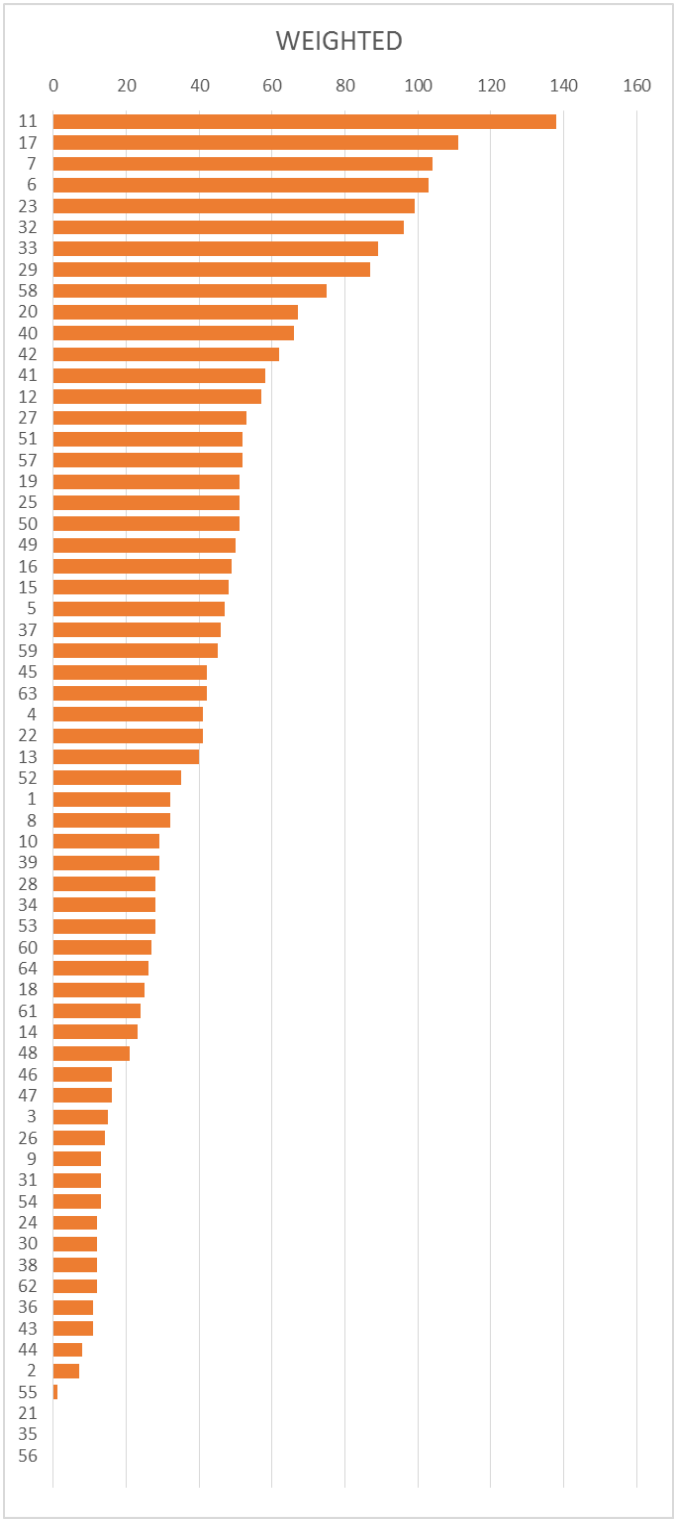
11	*As above*.
17	What specific policies of the World Bank, the World Trade Organizations and other similar entities are leading to the development and expansion of industrial scale animal production in developing countries in low, middle income or emerging economies?
7	What are the most effective interventions in terms of changing behaviour towards decreasing animal product consumption? How does this differ geographically e.g. between the US / Europe and developing/middle-income countries?
6	How robust are the existing data and analysis which makes an effective case that industrial animal production is detrimental to climate change and that alternatives are much more cost effective, create resilience in the food system and contribute tremendously towards the reduction of greenhouse gases (GHGs)? What are the existing gaps in such literature/research/evidence? And who are the experts that can help fill these gaps?

23	How will ongoing and completed negotiations on free trade agreements (FTAs) (for example: CETA, TTIP, TPP, potential NAFTA renegotiations, EU-Mexico, EU-Mercosur, RCEP) expand the power of global transnational meat processing corporations? What are the key lessons which developing countries can learn from the findings of the above analysis? What are policy provisions that must be adopted in order to prevent and reverse this global consolidation through FTAs?
32	In a low- or middle-income country where industrial food animal production (IFAP) is expanding, what are some examples of existing food animal production operations that use more sustainable practices and/or higher animal welfare standards, what are the factors enabling their success, and how can these producers be supported?
33	Analyze ways in which small-scale livestock farmers in the developing world (i) have improved and (ii) could improve productivity and hence their livelihoods without moving to industrial livestock production; the study should in each case quantify the productivity enhancement that has been achieved.
29	What leverage does public procurement (particular in schools and universities to target consumers of tomorrow) hold in terms of decreasing the demand side of meat production in key countries/regions (USA, Brazil, Argentina, Southeast Asia, China, EU, Japan, South Africa)? What portion of meat consumption in key countries/regions is consumed by public procurement? Would a vegetarian public procurement policy significantly decrease overall meat consumption? How much money could governments save by reducing meat served in schools by 50 % or a 100%, but replacing it with ecoag veggie alternatives?

Respondents made some comments on individual questions: these are listed in the appendices.

Fig 2: Citation frequency, and weighted score, of all questions





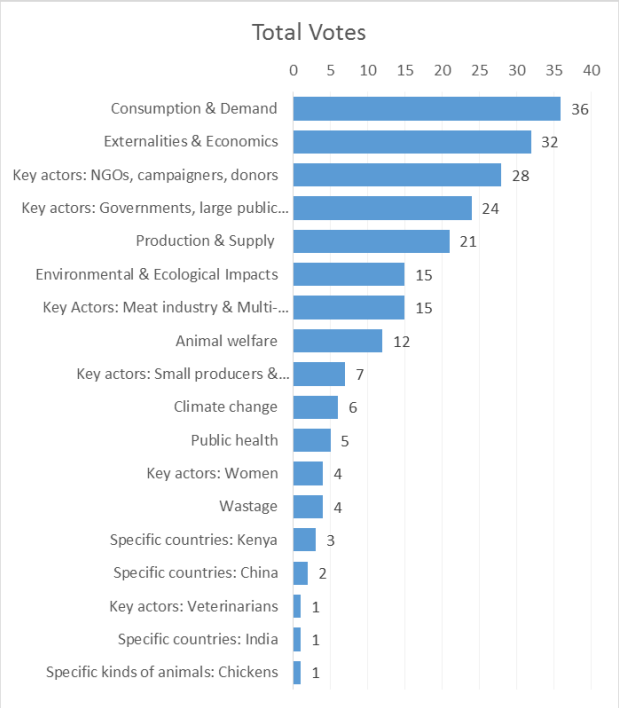
Results by category

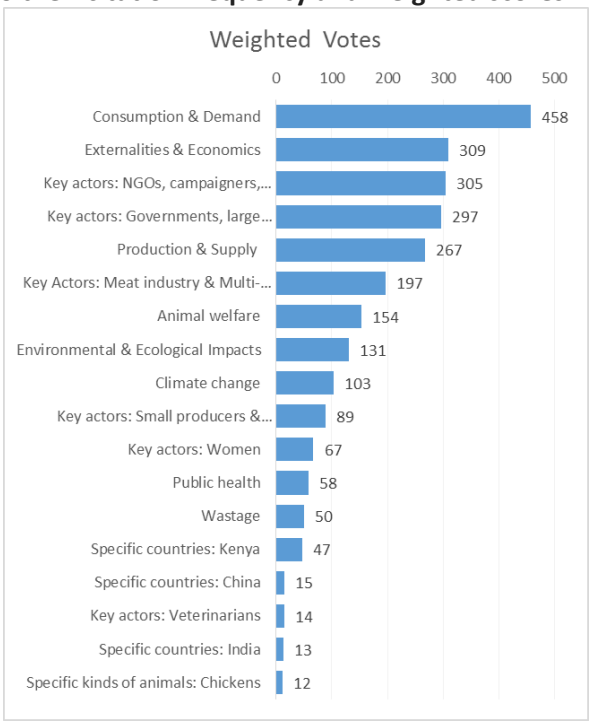
The number of questions assigned to each category varied – as shown below. Of course, this means that if (say) 'Consumption and Demand' questions scored a lot of 'votes', that *might* be because participants thought that was most important, or alternatively simply that there were more questions in that category to choose.

Categories	Number of questions per category
Externalities & Economics	9
Consumption & Demand	9
Key actors: NGOs, campaigners, donors	7
Key Actors: Meat industry & Multi-national corporations	6
Production & Supply	6
Environmental & Ecological Impacts	5
Animal welfare	5
Key actors: Governments, large public institutions, int'l bodies	4
Specific countries: India	3
Public health	2
Specific countries: Kenya	1
Key actors: Veterinarians	1
Specific countries: China	1
Key actors: Women	1
Wastage	1
Specific kinds of animals: Chickens	1
Climate change	1
Key actors: Small producers & operators; Livelihoods of local communities	1

Again, the same categories came top in both the analysis by citation frequency and by weighted response:

Fig 3: The priority of the various categories according to their citation frequency and weighted scores





The table below shows the responses by question by category in more detail:

Figure 4: Response by question by category

Category	Question	Total
Consumption & Demand	7	8
	29	7
	58	5
	12	5
	57	4
	1	2
	53	2
	43	2
	24	1
Consumption & Demand Total		36
Externalities & Economics	16	6
	22	5
	41	5
	13	4
	34	4
	4	3
	61	2
	46	2
	38	1
Externalities & Economics Total		32

Key actors: NGOs, campaigners, donors	11	10	
	37	5	
	52	4	
	63	4	
	62	2	
	48	2	
	36	1	
Key actors: NGOs, campaigners, donors Total		28	
Key actors: Governments, large public institutions, int'l bodies	23	8	
	17	7	
	45	5	
	59	4	
Key actors: Governments, large public institutions, int'l bodies Total		24	
Production & Supply	32	6	
	42	5	
	19	5	
	10	2	
	28	2	
	55	1	
Production & Supply Total		21	
Environmental & Ecological Impacts	27	5	
	18	3	
	44	3	
	39	3	
	47	1	
Environmental & Ecological Impacts Total		15	
Key Actors: Meat industry & Multi-national corporations	50	4	
	25	4	
	15	3	
	60	2	
	2	1	
	31	1	
Key Actors: Meat industry & Multi-national corporations Total		15	
Animal welfare	51	4	
	40	4	
	14	2	
	54	2	
	21	0	
Animal welfare Total		12	
Key actors: Small producers & operators; Livelihoods of local communities	33	7	
Key actors: Small producers & operators; Livelihoods of local communities Total		7	

Climate change	6	6	
Climate change Total		6	
Public health	64	3	
	8	2	
Public health Total		5	
Key actors: Women	20	4	
Key actors: Women Total		4	
Wastage	49	4	
Wastage Total		4	
Specific countries: Kenya	5	3	
Specific countries: Kenya Total		3	
Specific countries: China	3	2	
Specific countries: China Total		2	
Key actors: Veterinarians	26	1	
Key actors: Veterinarians Total		1	
Specific countries: India	9	1	
	56	0	
	35	0	
Specific countries: India Total		1	
Specific kinds of animals: Chickens	30	1	
Specific kinds of animals: Chickens Total		1	

3. Respondent Demographics

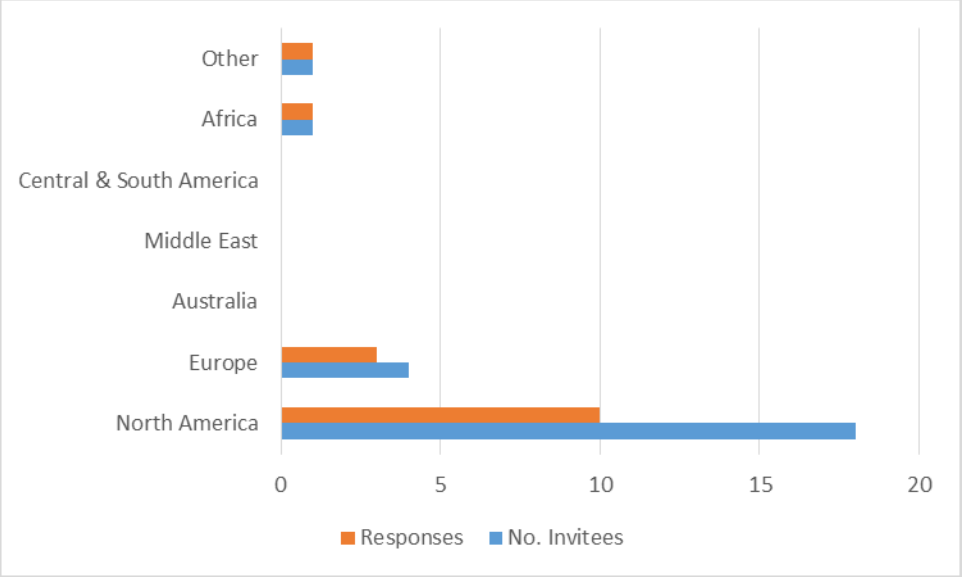
No. of invited participants	No. completed	No. who completed the exercise
24	15	11

Some people said that they did not complete the prioritization exercise because of the time that it took.

Geography

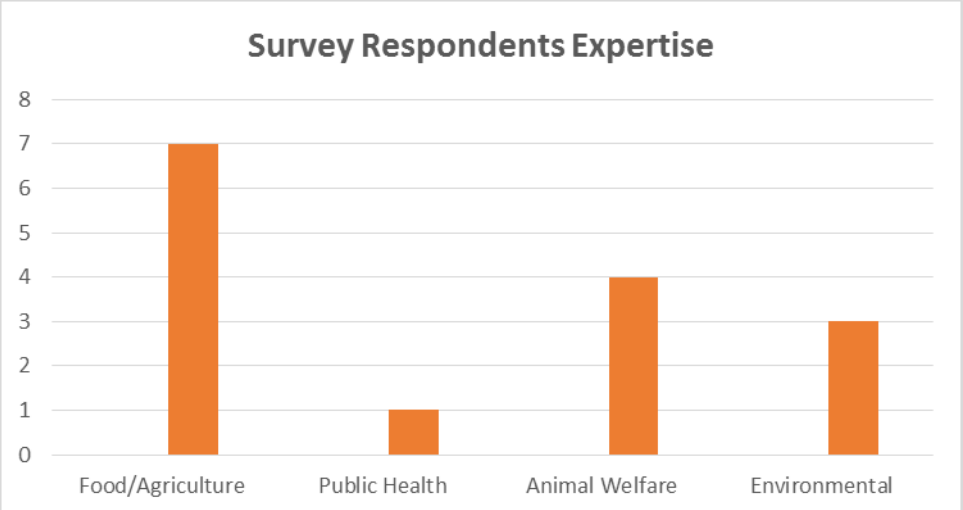
Stakeholders from the USA, Kenya, India, Canada, Netherlands and Germany were invited to complete the prioritisation exercise. All respondents, bar one, were from North America or Europe.

Fig 5: People invited to participate vs. responses received, by geography

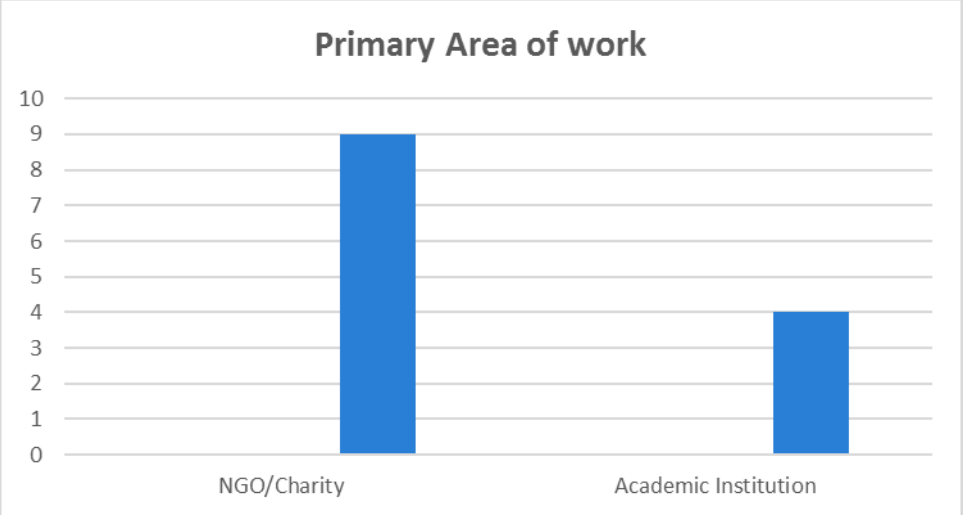


Roles

A range of responses were received from people with different areas of expertise (respondents were asked to choose one):



All respondents were from academic institutions or NGOs (including think-tanks):



All respondents said that they work in animal welfare, environment, food/agriculture or public health.

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Appendix 1: Giving Evidence, and Team

Giving Evidence encourages and enables charitable *giving* (in all its forms) to be based on sound *evidence*. We have worked on many issues, with many donors and funders and academic institutions in many continents for many years. Our work has two parts: consulting and campaigning, which closely connected, in that client work often raises, refines or tests ideas on which we campaign.

Consulting. We help major donors and implementers to use data to select their focus, and improve their operations, both by commissioning and using research, and by using existing evidence in their decisions.

Campaigning. We speak and write publicly about the problems with evidence in the charity sector and about what donors can do; and we publish new evidence. For example, we:

- published the first ever *data* (rather than just opinion) in the long-running debate about whether charities should be judged on their admin costs. It was one of The Guardian's most read pieces of the year.
- published analysis showing that the evidence from the world's first social impact bond ('pay for success' mechanism) won't be robust enough to show whether it's worked or not.
- wrote recently in The Economist and Financial Times about how donors could avoid waste and improve performance by sharing more information about their work.
- speak at high-profile events such as the Arab Foundations Forum, the Skoll World Forum and many events for general audiences.

Team: Giving Evidence was founded by **Caroline Fiennes**, one of few people whose work has featured in both *OK! Magazine* and *The Lancet*. Now a Financial Times columnist, she has worked for over a decade in making nonprofits more effective and advising major donors around the world. Caroline was an award-winning charity CEO, and her experience led to her well-received book *It Ain't What You Give* ('the Freakonomics of the charity sector'). She speaks often on BBC TV and radio, and writes in many channels.

Sheela Upadhyaya is a trained James Lind Alliance (JLA) adviser and has run a number of JLA priority setting partnerships (PSPs) in different diseases and healthcare settings. The James Lind Alliance is an initiative to help identify and prioritize for research in health. She has published a number of articles on priority setting using the JLA Method and articles on the evaluation challenges in evaluation drugs for use on rare diseases.

Dr Helen Owen is a PhD epidemiologist, with experience in qualitative and quantitative data analysis. She has published all the work she has been involved with to date (currently named author on 13 articles in peer-reviewed academic journals). She teaches at the London School of Hygiene and Tropical Medicine.

Appendix 2: Summary of the people invited to participate

Title and Location of the individual	Animal welfare	Environmental; Food & Agriculture	Public health	Farm workers, operators, owners	Agribusiness	Local community	**Role(s)**
Assistant Director in international org. (USA)		X					practitioner
Chief Executive of international org. (UK)	X						practitioner
Executive Director in the U.S. of international org. (USA)	X						practitioner
Founder and Chief Executive of org. (UK)		X					researcher; practitioner
Vice President of org. (USA)	X						practitioner
Executive Director of foundation (UK)	X						funder
Executive Director of org. (USA)	X						practitioner
Postdoc livestock scientist (Kenya)						X	researcher
Assistant Professor (USA)		X			x		academic researcher
Chief Executive Officer of org. (USA)				X		X	practitioner
Professor Emeritus (USA)		x			X		academic researcher
Senior Attorney and program head in org. (USA)		X					practitioner
Program Director (USA)	X						practitioner
Livestock veterinarian (India)	X	X		X		X	researcher; practitioner
Founder and Executive Director of org. (USA)	X	X					researcher; practitioner
Program Director in foundation (USA)	X	X					funder
Professor (Canada)	X						academic researcher
Director of key initiative in international org. (USA / Germany)		X					practitioner
Executive Director of foundation (USA)	X	X					funder
Research Coordinator in international org. (Netherlands)		X					researcher
Public health scientist in university (USA)	x	x	X	x		x	academic researcher
Director of key department in international org. (USA)	X						practitioner
Program Officer in foundation (USA)	X						funder
Professor (USA)	X	X					academic researcher
TOTAL: 24 PERSONS							
note: capital X = primary area(s) of expertise /interest ; small x = secondary							

Appendix 3: Full list of the questions

People submitting questions were invited to provide some context for each question. Some did, and this was included in the material sent to participants. It is omitted from here, simply for brevity.

ID no	**"BURNING QUESTIONS"** (Note: The order of these questions was random)
1	If we keep eating meat at current rates, in how many years will we have reached 1.5°C/2°C? Or in other words (borrowing from carbon language): What budget does the global population have left in terms of meat consumption until we reach 1.5°C/2°C? And breaking down to per person meat budget: What is a sustainable level of meat consumption per capita globally and could that amount of meat be sustainably (to be defined) grown?
2	How to transition those now working raising animals to other less environmentally harmful jobs? (Both in the US and globally there are many workers dependent on livestock. Not only will they fight a diet shift absent a new future for themselves, but it's only fair and right.)
3	What is the % of animals factory farmed, the companies involved, and the supply chains in China and India?
4	What are the inherent negative ecologically, socially, and economically significant impacts of specialization, standardization, and consolidated control on the natural ecosystems, societies, and economies in which meat, dairy, and egg production are carried out? What are the significant positive aspects of industrial-scale production?
5	Understanding the pork and poultry meat corporations in Kenya 1. Internal operations: What is the operational framework and structure of Farmer's Choice (pork) and Kenchic (poultry) meat corporations in Kenya? - How have these factories grown over time in terms of volumes of inputs, outputs and profit? - Has the ownership changed over the years, from whom to who? - Has contracting arrangements with farmers changed over the years, how and why? - Is there (has there been) vertical integration? Has it evolved over time? How? What motivated the various changes? 2. Market participation: How have the pig and poultry local and global markets evolved over the years? - How has competitiveness in the pig and poultry markets evolved over the years? Are there similarities and differences in the local and foreign markets? What are they? - Are there any trends (e.g. requirements of production practices for animals' and workers' rights, consumers' preferences etc.), and are there explanations of the trends? 3. Policies: (Policy documents and implementers) What are the current local and international meat trade policies? Are there differences for pork, poultry or other meats? (Meat corporations) What are the opportunities provided by policy and regulatory bodies? What are the barriers? What lessons have corporations learned to overcome the barriers and exploit opportunities? 4. Consumers: Who are the main consumers of these products locally and internationally? - What do consumers understand in terms of the scale and mode (contract farmers and vertical integration) of production of these corporations? - What are the consumers' stand with regards to ethics around meat production in terms of human (contract farmer, worker, consumer) and animal rights? - What about public health issues with rural communities living near the factories – pollution in terms of waste disposal and noise?

6	How robust are the existing data and analysis which makes an effective case that industrial animal production is detrimental to climate change and that alternatives are much more cost effective, create resilience in the food system and contribute tremendously towards the reduction of greenhouse gases (GHGs)? What are the existing gaps in such literature/research/evidence? And who are the experts that can help fill these gaps?
7	What are the most effective interventions in terms of changing behaviour towards decreasing animal product consumption? How does this differ geographically e.g. between the US / Europe and developing/middle-income countries?
8	In a low- or middle-income country where industrial food animal production (IFAP) is expanding, how do resource use and negative public health and/or environmental impacts of agricultural production compare between systems that support diets with low vs. high consumption of animal products?
9	Which part of the meat value chain in domestic Indian markets have these large Meat Corporations already entered / and how do they intend to enter these chains?
10	Should farming practices be socially acceptable and if so who determines this?
11	What kind of public domestic policies and financial support do major industrial livestock producing countries provide [to] global meat processors and retailers to increase their global power and production? How many countries are using similar policies and financial measures? What have been civil society efforts to stop such support and measures? How many of such efforts have been successful? What were some of the key factors that led to their success? Those that failed, what were key factors that could have contributed to the failure? Based on this analysis, identify key proposals for stopping public financing of industrial livestock production and policy measures and campaigns that could help stop the industry's global consolidation and power. The aim is to differentiate these proposals by regions or identify to what extent such measures would be globally applicable.
12	What are the reasons for the greater demand for meat in developing countries?
13	What are the economics impacts of the various changes to factory farm policy that will be implemented over the comings years? This would include bans on various forms of intensive confinement, changes in the use of antibiotics, changes to broiler or fish welfare standards, increased need for auditing, etc.
14	Do members of the public in major industrializing countries (Brazil, Mexico, India, China, etc.) respond to materials that promote compassion for farmed animals, concern with factory farming, and the benefits of plant-based eating in the same way as American audience? Or are there differences in language and focus that would make such materials more effective for a general global audience?
15	What is the level of market share by top 4 companies that would still allow independent, regional/local, non-vertically integrated livestock production to successfully access retail/food service (not just direct sale) markets in their region?
16	What would the price of meat be, if all costs that are currently externalized (e.g. water, CO2 –equivalent emissions, healthcare) would be reflected in the price of meat at retail level?
17	What specific policies of the World Bank, the World Trade Organizations and other similar entities are leading to the development and expansion of industrial scale animal production in developing countries in low, middle income or emerging economies?

18	How is the growing industrialising of meat [production?] affecting and changing cropping pattern of food crops around the world, and impacting resource consumption- land, water, etc
19	Although there is now growing consensus among leading scientists that pasture-based production systems can benefit the animal, the environment and society, how can we best collate and present existing scientific research which support this hypothesis for policy and decision makers? What are the key gaps in our knowledge and what further research is needed?
20	What are the impacts on women as a result of switching from small backyard animal production to an industrial model?
21	How prevalent is the perception that big farms are bad for animal welfare and what evidence is used to support this perception?
22	In the top 10 non-US countries that have experienced the growth of industrial animal agriculture, has the concentration of the market and company ownership impacted independent producers and the independent farm economy in those nation states?
23	How will ongoing and completed negotiations on free trade agreements (FTAs) (for example: CETA, TTIP, TPP, potential NAFTA renegotiations, EU-Mexico, EU-Mercosur, RCEP) expand the power of global transnational meat processing corporations? What are the key lessons which developing countries can learn from the findings of the above analysis? What are policy provisions that must be adopted in order to prevent and reverse this global consolidation through FTAs?
24	How to encourage a shift to diets with less beef and pork (and sheep and goat in other countries)? No amount of raising meat better will alleviate the harm adequately.
25	In a low- or middle-income country where industrial food animal production (IFAP) is expanding, which major multinational meat-producing companies operate there and what are their production practices, headquarter locations, parent companies, and locations of activity?
26	How informed are extension agents and veterinarians working in the developing world about animal welfare?
27	How do the production, including the production of the animals' feed, of (a) intensive beef, (b) extensive beef, (c) intensive pigs and (d) intensive meat chickens compare as regards (i) nutritional quality, (ii) use of antibiotics, (iii) incidence of non-communicable diseases, (iv) area of cropland used, (v) impact on soil organic matter, (vi) impact on soil biodiversity, (vii) volume of blue and grey water used, (viii) impact on biodiversity and wildlife, (ix) greenhouse gas emissions and (x) animal welfare.
28	While high technology will clearly have a vital role in helping to feed the world sustainably, what management approaches and appropriate technologies can we learn from subsistence agriculture models, and how can we best share these ideas among farmers across the world?
29	What leverage does public procurement (particular in schools and universities to target consumers of tomorrow) hold in terms of decreasing the demand side of meat production in key countries/regions (USA, Brazil, Argentina, Southeast Asia, China, EU, Japan, South Africa)? What portion of meat consumption in key countries/regions is consumed by public procurement? Would a vegetarian public procurement policy significantly decrease overall meat consumption? How much money could governments save by reducing meat served in schools by 50 % or a 100%, but replacing it with ecoag veggie alternatives?

30	What would be the impact of a ban on battery cages (for hens) on egg consumption and nutritional outcomes for food insecure households in India? [Note: While this question relates to a current legal case in India, the same question could/should be asked for other developing countries]
31	How are industrial systems being introduced? Is it through home government subsidies or large corporate negotiations? What are the particulars of these diffusions?
32	In a low- or middle-income country where industrial food animal production (IFAP) is expanding, what are some examples of existing food animal production operations that use more sustainable practices and/or higher animal welfare standards, what are the factors enabling their success, and how can these producers be supported?
33	Analyze ways in which small-scale livestock farmers in the developing world (i) have improved and (ii) could improve productivity and hence their livelihoods without moving to industrial livestock production; the study should in each case quantify the productivity enhancement that has been achieved.
34	What are the inherent positive ecological, social, and economically significant impacts of diversification, individualization, and decentralized control on the natural ecosystems, societies, and economies in which meat, dairy, and egg production are carried out? What are the significant negative aspects of holistic management, agroecology, and other sustainable systems of production?
35	How are domestic meat markets of India different or similar to large Industrial meat markets and how do these support local livelihoods of communities? meat includes – poultry, beef (cattle/ buffalo) and mutton (sheep/goat)
36	As concern grows among some food system reformers that we risk creating a self-serving 'echo chamber,' how can we best identify—and learn from—past and present food/farming communications campaigns (both large and small) that have succeeded in reaching new audiences and affecting real change?
37	In those countries where there has been a growth in multinational meat corporations, are there examples in which popular movements have successfully organized in opposition to block or reform how these companies produce their products?
38	At what levels of diversity do the synergistic benefits of resource efficiency, resilience, and regenerative capacity of meat, dairy, and egg production in holistically managed systems begin to diminish significantly and become exhausted? (Specific gains in economic efficiency, reductions in risks, and regenerative capacity could be associated with adding various animal enterprises, phases of production, and resource combinations to specific production systems.) Note: Similar questions could be asked for individualization, with respect of person and place, and dispersion or decentralization of control.)
39	How do IFAP and pasture-based systems, in different regions of the world, differ in terms of carbon and water footprint?
40	What aquaculture/fishing reforms most effectively reduce the suffering of fish?
41	What public, policy-maker and private sector messaging and conscientization projects can lead to factory farming being demystified most effectively in the global South among key policy-makers, media and agricultural communities and enterprises, and the true costs of U.S.-style production of animal-based foods (i.e., the CAFO model and all it entails) be better known and therefore resisted or countered more effectively before it becomes deeply embedded?

42	When it comes to food production and distribution, 'big' is not necessarily bad, while 'small' is not always good—or even appropriate. How can we identify the positives of short-stem, integrated supply chains and, where appropriate, replicate successful models that enable/encourage scale- and place-specific sustainable agriculture to access mainstream markets?
43	What diets would be feasible now, and also in 2050, in (a) India, (b) China and (c) South Africa if there were (i) no further intensification of crop or livestock production, other than where intensification can be achieved without damage to natural resources or animal welfare, (ii) no further expansion of cropland or grassland and (iii) no increase in imports of food or feed?
44	How do we reintegrate animal and livestock production, creating a system that efficiently cycles nutrients and captures their value, rather than releasing them to the environment where they wreak ecological havoc?
45	What specific public policies could be put in place that would remove current incentives for specialization, standardization, and consolidation of control and instead would encourage or incentivize the development of diversity, individualistic, decentralized systems of meat, dairy, and egg production? (Specific projections could be made in terms of the resulting diversity, size, numbers, individuality, and geographic dispersion of farming and food enterprises for various policy alternatives.)
46	What is the current and projected economic impact on animal production from a) avian flu and b) swine flu globally? Can this be broken down into country-specific figures? Is there a difference in impact (per bird) between intensive producers and small-scale, free range producers?
47	Do any countries treat IFAP operations under water pollution laws as dischargers? (as opposed to U.S., where agriculture is relegated to being a nonpoint source of water pollution under the Clean Water Act, which has essentially left IFAP to be unregulated in terms of water pollution.)
48	How possible is it to, and what are the best ways to, raise funds in key large industrializing countries?
49	How much meat/dairy is wasted globally in key regions per year? What are mechanisms to reduce that waste to say, 50%? What would the effect on the environment be from that waste reduction?
50	Comparing 1990, 2010 and 2015, what is the increase in the volume and value of sales in developing countries of the world's top six companies in each of the following fields: (a) chemical fertilisers, (b) chemical pesticides, (c) animal pharmaceuticals including antibiotics, (d) animal genetics, (e) commercial seeds and (f) commercial grain traders; and what mechanisms have been used by these companies to increase demand for their products in the developing world?
51	What are the numbers of fish, different systems used, and supply chains in fish farming globally?
52	How can the movements vs. factory farming in the U.S., Europe and other industrialized countries (i.e., related research, multimedia resources, messaging, campaign strategies, key influencers, financial resources) develop strong, effective and ongoing links with emerging movements or individual organizations and activists in the global South, including in key countries like China, India, South Africa and whole regions like East Asia, to maximize solidarity and impact?

53	What are the various cultural paradigms or fundamental drivers in the world that support a meat eating culture and how can they be challenged and changed? What are cultural paradigms of vegetarian diets that need to be saved, preserved and promoted to enable the transition to a mainly plant based diet globally?
54	In countries that, due to hot dry climates, have short or non-existent grass-growing seasons, what forms of rearing dairy cows can achieve high standards of animal welfare?
55	What are the resource demands of industrial farm animal production in developing countries?
56	What are the specific interests of the International Meat MNCs Corporations/ Industry in the Indian Markets? (by meat we mean poultry, beef, goat/ sheep)
57	There are number of foundations, as well as intergovernmental and government financial instruments, which fund climate change mitigation projects. However they are currently not focused on meat reduction efforts. Who are the key individuals or institutions who can influence the direction of climate finance, and what barriers do these individuals/institutions currently face to investing in meat reduction initiatives? Is it a lack of information about the climate impacts of meat consumption? Is it a lack of awareness about solutions (successful private and public sector initiatives to reduce meat consumption)?
58	In a low- or middle-income country where industrial food animal production (IFAP) is expanding, what are examples of culturally appropriate and regionally feasible plant-centric diets with adequate nutrition, and how can these dietary patterns and corresponding agriculture production be promoted to policy makers, farmers, and consumers?
59	Global agribusiness is working to embed factory farming in countries of the global South with relatively little scrutiny from civil society, the media, or researchers/policy experts, and this process if often facilitated by considerable support from host country governments and agribusiness' home country governments as well. What set of measures, spanning research, in-depth reporting, public education, capacity development of southern NGOs and movements, policy advocacy, and private sector engagement/confrontation could bring greater scrutiny to and arrest this process?
60	What are the economic factors, trade policies and regulations that would cause a multi-national meat production company to choose whether to produce meat in the United States for export or within a specific country for domestic consumption?
61	At what scales of sizes of production unit do the economic and productive efficiencies associated with increasing scale or size of meat, dairy, and egg production within a single unit of management or control begin to diminish significantly or become exhausted? (Results could be reported in tabular form with specific percentage increases in size associated with specific increases until efficiency no longer increases.) Note: Similar questions could be asked for degree of specialization and standardization.
62	How is the farm animal rights movement growing in these places where production and demand have risen?
63	How quickly can a system of funding, capacity development, information exchange, and joint campaigning be established to "globalize" the movement against factory farming and ensure that the issue is integrated into movements and sectors where it has huge relevance, including: climate change, water and land use, deforestation and forest protection, biodiversity, sustainable development writ large, agro-ecology, right to food, sustainable livelihoods, hunger and gender equality?

64	In a low- or middle-income country where industrial food animal production (IFAP) is expanding, what is the status of domestic regulatory oversight of IFAP operations and what actions are currently being taken to prevent, monitor, and mitigate public health and environmental impacts?
65	How is the farm animal rights movement growing in these places where production and demand have risen?

Appendix 4: Summary of comments submitted – Weighted Rank list

	Question No.	Comments
1st	11	Why meat consumption and production are increasing. Understanding ties between meat producers and governments, how deep the relationships are, Transparency needed.
2nd	17	International policies by World Bank and World Trade Organisations and others are leading to the proliferation of new industrial animal operations. Understand how it impacts people, animals, and environments on the ground. International policies matter greatly. How do trade policies in different determine production, export and import?
3rd	7	How to change the consumption patterns of individuals. Having a better sense of the impact of various interventions/messages would be very valuable. What are the most effective way to bring down meat consumption
4th	6	Climate change is a high priority for many policy makers, what are the data on the links between industrial animal production and climate change What factors happen globally that corporations consider when thinking where to site facilities/business
5th	23	How do trade agreements and on-going negotiations (not just in the U.S. but elsewhere as well) effect production and consumption? And how do they effect consolidation in meat production sectors?
6th	32	It is important to understand how trade policy drives that spread. How do trade agreements and on-going negotiations (not just in the U.S. but elsewhere as well) effect production and consumption? And how do they effect consolidation in meat production sectors? Seen very little work done on these questions.
7th	32	Livestock is an essential aspect of sustainable agriculture. Livestock producers, particularly in low- and middle-income countries need feasible sustainable alternatives.
8th	33	It is vital to be able to show that improved livelihoods for small scale farmers are feasible without resorting to industrial animal production.

9th	29	What is most effective way to bring down meat consumption? Procurement can be an effective tool for change and should be explored. The wisdom learned could make efforts much more effective.
10th	58	No comments