

## TINY BEAM FUND SUPPORTED PROJECTS AND WORK

(SINCE ITS FOUNDING IN 2019)

### 1. Burning Questions Initiative: Fellowships for Individuals

This is Tiny Beam Fund's flagship program. Fellowship recipients are all PhD holders or students close to completing their PhD degree. They work on topics that shed light on "burning questions" asked by staff of non-profit organizations and funders who are trying to understand and find solutions to large-scale/industrial food animal production's negative impacts, particularly concerning low- and middle-income countries. [HERE](#) is the 2023 list of "burning questions".

A key deliverable of a fellowship recipient is a "Guidance Memo". This is a report written in plain language aimed at helping these groups deepen their understanding of the issues they have asked in their questions.

#### *Guidance Memos, organized by date*

*In Progress as of October 2023*

Provisional Title	Key topic; country	Authors / Fellowship Recipients
<b>Beekeeper-led efforts to resist pressure to industrialize beekeeping in Mexico, and to maintain small-scale diversified production systems of honey bees</b>	bee farming; Mexico	Maggie Shanahan
<b>Unmasking JBS's corporate profits and capital accumulation, state investments from the Brazil government, and foreign support, in perpetuating social inequalities and development challenges in Brazil</b>	JBS meat corporation; Brazil	Raisa Ramos de Pina
<b>Understanding the social and ecological implications of the planned export-driven growth of industrial beef production in South Africa in a time of climate crisis</b>	beef industry; South Africa	Andrew Bennie; Andrew Bowman; Basani Baloyi; Yasirah Madhi
<b>Creating alliances and networks against industrial animal farms in the Americas</b>	industrial livestock production; resistance; Latin America; U.S.	Karen Hudlet Vazquez
<b>How two key food supply chain actors - animal housing technology suppliers upstream and meat processing companies downstream from farmers - influence animal welfare in large-scale farms in regions in Europe</b>	animal farming supply chains; animal welfare; Eastern Europe	Mariann Molnár

**Curbing the use of medically important antibiotics in food production: profiles in low and middle-income countries (LMICs) and guidance for identifying priority interventions**

animal-sourced food production; antibiotics use

Keeve Nachman;  
Brent Kim; Aimee Bourey

*Completed in January – September 2023*

Title	Key topic; country	Authors / Fellowship Recipients
<p><b>Effective behaviour change strategies to promote meat reduction in Brazil</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</p>	<p>animal-sourced food consumption reduction; Brazil</p>	<p>Brian Cook</p>
<p><b>Designing a “good life” for livestock: Could gene editing improve animal welfare in low- and middle- income countries?</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</p>	<p>gene editing; developing countries</p>	<p>Rachel Ankeny; Emily Buddle; Rebecca Paxton</p>

*Completed in 2022*

Title	Key topic; country	Authors / Fellowship Recipients
<p><b>Dairy production in India: Animal welfare implications and public perceptions</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</p>	<p>dairy production and consumption; animal welfare; India</p>	<p>Jesse A. Robbins</p>
<p><b>Eek! What the chick: Addressing the issues of industrial poultry in Egypt</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</p> <p>(Arabic version) الغذائي معالجة قضايا الدواجن الصناعية في مصر</p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download directly. <a href="#">Link</a> to companion annotated bibliography.</p>	<p>poultry production and diseases; food security; Egypt</p>	<p>Marion W. Dixon</p>
<p><b>Egg producer and egg buyer disconnect: Exploring barriers and levers to increase cage-free egg production in China</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download directly. <a href="#">Link</a> to companion annotated bibliography.</p>	<p>cage-free eggs production and consumption; China</p>	<p>Ashleigh Bright</p>
<p><b>The role of major retailers and supermarkets in the transition from industrial animal agriculture to alternative proteins in low- and middle-income countries: The case of Brazil</b></p>	<p>plant-based "meat" retail; Brazil</p>	<p>Germano Glufke Reis; Educarado Guedes Villar</p>

Click [here](#) for key points. [Link](#) to download.  
[Link](#) to companion annotated bibliography.

<p><b>The politics of milk: Examining claims about dairy in China</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download.  <a href="#">Link</a> to companion annotated bibliography.</p>	<p>dairy marketing; dairy consumption; corporations; China</p>	<p>Philip H. Howard</p>
<p><b>From pasture to compost barns: Smallholder family dairy farmers and the expansion of industrialized animal production in Santa Catarina, Brazil</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download.  <a href="#">Link</a> to companion annotated bibliography.</p>	<p>dairy farming; smallholder farmers; Brazil</p>	<p>María José Hötzel; Luiz Carlos Pinheiro Machado Filho; Matías Hargreaves Méndez</p>
<p><b>The path towards CAFO in Argentina: The 2020 Argentina-China agreement and the absence of animal welfare considerations in the intensification of animal agriculture</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download.  <a href="#">Link</a> to companion annotated bibliography.</p> <p>(Spanish version) <b>El proceso de intensificación de la ganadería en Argentina: El rol del acuerdo porcino del 2020 y la ausencia de estándares de Bienestar animal en la intensificación ganadera</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download.  <a href="#">Link</a> to companion annotated bibliography.</p>	<p>industrial pig farms; trade; government; Argentina; China</p>	<p>Silvina Pezzetta</p>
<p><b>A human rights approach for resisting CAFOs: The Mayan community of Homun against a 49,000-pig operation in Yucatan, Mexico</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download.  <a href="#">Link</a> to companion annotated bibliography.</p>	<p>industrial pig farms; human rights; environmental pollution; Mexico</p>	<p>Karen Hudlet</p>
<p><b>Livelihood transitions in low- and middle-income countries: From animal agriculture to alternative proteins</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download.  <a href="#">Link</a> to companion annotated bibliography.</p>	<p>livestock producers; alternative protein; Brazil</p>	<p>Peter Newton; Waverly Eichhorst</p>
<p><b>Las universidades públicas de Argentina como instituciones clave para la reducción del consumo de productos de origen animal: Actores, intereses y prácticas involucradas para lograr el compromiso de incorporar menús 100% vegetales en sus comedores estudiantiles</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download.  <a href="#">Link</a> to companion annotated bibliography.</p> <p>(English version) <b>Public universities in Argentina as critical institutions for reducing animal food product consumption: Actors, interests, and practices involved in achieving a commitment to</b></p>	<p>vegetarian meals; universities; Argentina</p>	<p>Alexandra Navarro</p>

**incorporate 100% vegetable menus in their student canteens**

Click [here](#) for key points. [Link to download.](#)  
[Link to companion annotated bibliography.](#)

<p><b>Identifying economic and financial drivers of industrial livestock production - the case of the global chicken industry</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link to download.</a>  <a href="#">Link to companion annotated bibliography.</a></p>	<p>chicken and livestock industries; financial drivers; India</p>	<p>Mehroosh Tak; Ivo Syndicus; Ambarish Karamchedu</p>
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*Completed in 2021*

Title	Key topic; country	Authors / Fellowship Recipients
<p><b>Situational analysis of farm animal cruelty in large farms, general community and in relevant government authorities operating in Kenya</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link to download.</a>  <a href="#">Link to companion annotated bibliography.</a></p>	<p>farm animal welfare; Kenya</p>	<p>Maureen K. Luvanda</p>
<p><b>How have corporate industrial food systems been entrenched into the Arab region?</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link to download.</a>  <a href="#">Link to companion annotated bibliography.</a></p>	<p>agribusinesses; Gulf states; Egypt; Morocco; Lebanon</p>	<p>Christian Henderson</p>
<p><b>Building bridges to promote sustainable livestock systems: Opinions of stakeholders in Brazil towards gene editing of farm animals</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link to download.</a>  <a href="#">Link to companion annotated bibliography.</a></p>	<p>gene editing; Brazil</p>	<p>Maria Cristina Yunes</p>
<p><b>Industrial aquaculture: History, problems, potential - Political economic review and analysis of socioecological issues in global industrial aquaculture supply chains</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link to download.</a>  <a href="#">Link to companion annotated bibliography.</a></p>	<p>aquaculture supply chains</p>	<p>Timothy Clark; Stefano Longo</p>
<p><b>The meatification and re-meatification of diets: The unequal burdens of animal flesh and the urgency of plant-meat alternatives</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link to download.</a>  <a href="#">Link to companion annotated bibliography.</a></p>	<p>meat consumption; plant-based "meat"; U.S., Germany, Brazil, China, India, Nigeria</p>	<p>Allison Gray; Tony Weis</p>
<p><b>Game On! Understanding the Emerging Game Meat Value Chain in South Africa</b></p> <p>Click <a href="#">here</a> for key points. <a href="#">Link to download.</a>  <a href="#">Link to companion annotated bibliography.</a></p>	<p>game farming; South Africa</p>	<p>Melanie Sommerville; Shirley Brooks; Tariro Kamuti; Lindokuhle Khumalo</p>

Completed in 2020

Title	Key topic; country	Authors / Fellowship Recipients
<p><b>The impact of European Union Common Agricultural Policy on the intensification of animal farming in Bulgaria, Romania, and the countries that have signed association agreements with the EU</b></p> <p><i>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</i></p>	<p>EU agricultural policies; livestock production; Bulgaria; Romania</p>	<p>Włodzimierz Gogłóża; Radosław Pastuszko</p>
<p><b>Large-scale cattle and pig production systems in three regions of Armenia: Engaging frontline persons in assessing the environmental, animal, &amp; human health conditions of these systems</b></p> <p><i>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</i></p>	<p>cattle and pig farming; environmental issues; Armenia</p>	<p>Kiara S. Winans; Irina Mkrtchyan</p>
<p><b>Living well through food: Examining messages about food in popular Kenyan media</b></p> <p><i>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</i></p>	<p>vegetarian diet; Kenya</p>	<p>Kristie O'Neill</p>
<p><b>Changing chicken in Guatemala: Relevance of poultry to income generation, food security, health, and nutrition</b></p> <p><i>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</i></p>	<p>chicken consumption and production; corporations; Guatemala</p>	<p>Ioulia Fenton</p>
<p><b>Supporting high welfare cage-free egg production in China</b></p> <p><i>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</i></p>	<p>cage-free eggs production; animal welfare; China</p>	<p>Kate Hartcher</p>
<p><b>Alimentación y Cultura en Argentina: Percepciones sobre dietas basadas en plantas, estigmatización del veganismo y desafíos actuales del activismo para reducir (y terminar) con el consumo de animales</b></p> <p><i>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</i></p> <p><b>(English version) Food and culture in Argentina: Perceptions of plant-based diets, stigmatization of veganism and current challenges of activism to reduce (and end) animal consumption</b></p> <p><i>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</i></p>	<p>meat consumption; vegetarian diet; Argentina</p>	<p>Alexandra Navarro</p>

Completed in 2019

Title	Key topic; country	Authors / Fellowship Recipients
<p><b>An analysis of value-chains and market development to support the smaller-scale production of pork by ethnic minority women in the Northern Mountainous Region of Vietnam</b></p> <p><i>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</i></p>	<p>smallholders pig farming; Vietnam</p>	<p>Aaron Kingsbury; Ha Thi Hoa; Ho Ngoc Son; Kieu Thi Thu Huong</p>
<p><b>Underestimates of US emissions and global implications for industrializing animal agriculture</b></p> <p><i>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</i></p>	<p>livestock production; greenhouse gas emissions</p>	<p>Matthew N. Hayek</p>
<p><b>Cattle and the climate: Why industrial production is not the solution to emissions from beef and dairy farms</b></p> <p><i>Click <a href="#">here</a> for key points. <a href="#">Link</a> to download. <a href="#">Link</a> to companion annotated bibliography.</i></p>	<p>cattle and dairy production; greenhouse gas emissions</p>	<p>R. E. Mason</p>

## 2. Burning Questions Initiative: Research Planning Grants to Universities

These grants are given to university-based researchers interested in planning (or recently started) projects on issues relevant to "burning questions" asked by leaders of NGOs tackling negative impacts of industrial animal agriculture in developing countries.

Name of University	Topic / Theme of Research Project
<p><b>Dublin City University</b></p>	<p>Political economy of environmental problems caused by the animal feed industry in mainland Southeast Asia. [PI: Danny Marks. Team member: Sayamol Charoenratana - Chulalongkorn University.]</p>
<p><b>University of Technology Berlin</b></p>	<p>Motivational conflict and cultural heterogeneity in meat consumption and plant-centric diets across Latin America. [Researcher: Jonas Ludwig.]</p>
<p><b>Leiden University</b></p>	<p>What are the environmental and economic impacts on LMICs if there is a dietary shift in HICs away from animal-source foods and toward more plant-based foods?</p>

	How can conflicts between LMICs and HICs that arise from this shift be eased with strategic international partnerships? [Researcher: Paul Behrens.]
<b>University of Bamenda</b>	Fieldwork to measure and analyze greenhouse gas emissions that come from large, industrial animal farms in Cameroon. [Researcher: Ngwa Martin Ngwabie.]
<b>University of British Columbia</b>	In emerging economies that are transitioning to large-scale, industrial animal farming systems (particularly those that may apply or have applied for EU membership), what are the pressures from parties embedded in the value chain that drive the animal farming sector in these countries to invest in industrial systems and intensify animal agriculture? [PI: Mariann Molnár. Team member: David Fraser.]
<b>New York University</b>	Describe and quantify the animal welfare and environmental concerns in each of the hundreds of fish species raised in aquaculture farms, many of which are in low- and middle-income countries. [Researcher: Becca Franks.]
<b>New York University</b>	Identify networks that support or engage in sustainable agriculture across predominately agrarian low- and middle-income countries - networks that can help to shift away from factory farming and move towards agriculture systems that are more humane and sustainable. [Researcher: Matthew Hayek.]
<b>New York University</b>	An investigative study into the recent interest in various countries (e.g. Mexico, Chile, Spain, China) in developing and financing large-scale farming of octopus. [Researcher: Jennifer Jacquet.]
<b>Royal Veterinary College</b>	A pilot study in the Indian state of Tamil Nadu to test a new research method that can be very useful in identifying links between government food policies and rising consumer demand for chickens and eggs. [PI: Mehroosh Tak. Team member: Lavinia Scudiero.]
<b>University of Colorado, Boulder</b>	A systematic review of the evidence to assess the efficacy of interventions to decrease consumption of animal-based food in different parts of the world. [Researcher: Peter Newton.]
<b>University of Edinburgh</b>	Confirm preliminary findings of viability of alternative models to industrial poultry operations in Nilgiris region of India. [Researcher: Krithika Srinivasan. Team members: Aaron Gross, Pradeep Kuttuva.]
<b>University of Adelaide</b>	The impact of globalization on industrial agricultural expansion and animal welfare in low- and middle-income countries reliant on halal production practices. [Researcher: Rachel Ankeny.]
<b>University of Waterloo</b>	Financial supports enabling factory farming industry to expand to emerging markets, and viable interventions to impede expansion. [Researcher: Jennifer Clapp.]
<b>Lille Catholic University</b>	Strategies led by small farmers to resist expansion of factory farming in Global South, and mechanisms to learn from each other. [PI: Brendan Coolsaet. Team member: Kristin Reynolds.]

### 3. Kindling Initiative: Grants to Universities

The purpose of Kindling Initiative is to fire up academic researchers and institutions’ interest in the negative impacts of industrial animal agriculture, especially concerning low- and middle-income countries – building their capacity within academe, helping them to communicate their research insights and to serve as a trusted voice beyond academe.

Name of University	Purpose of Grant
<b>Royal Veterinary College</b>	Launch and develop a new network for academic researchers – tentatively named Critical Research on Industrial Livestock Systems (CRILS) network. In particular, to support an in-person workshop in London in 2024 and a series of seven seminars in 2023-24.
<b>Royal Veterinary College</b>	To defray expenses of six researchers to attend a conference organized by the International Initiative for Promoting Political Economy. Their panel’s title is: "The Political Economy of Animal-Sourced Food Production and Consumption". Papers include: "The political economy of intensified poultry production systems in Bangladesh"; "Using political economy lenses to understand the problem of antimicrobial resistance and its control in Vietnamese aquaculture systems".
<b>Harvard Law School, Animal Law &amp; Policy Program</b>	To cover the stipend of a Visiting Fellowship recipient - an early-career academic specializing in international farm animal welfare with a focus on industrial scale systems in Asia (e.g. China, India). The main work during the fellowship is to build a broad international network of academics in farm animal welfare, and dissemination of her recent research in China to NGOs.
<b>New York University, Center for Environmental and Animal Protection (CEAP)</b>	To hire a graduate student as the center's part-time staff for three years to serve as CEAP's first and only dedicated staff support for administering and disseminating its research, most of which involves animal agriculture in LMICs (e.g. track projects, disseminate projects' findings, serve as the center's webmaster, strengthen collaboration and communication with other universities and NGOs).
<b>Emory University</b>	Use Guidance Memo written by Yulia Chuvileva /Ioulia Fenton (Burning Questions Fellowship winner) on the rise of "industrial chicken" in Guatemala and its negative impact on income generation, public health, food security and justice in the country: 1) As an anchor to rally academics in Guatemala round issues addressed in the report. 2) As the basis for a communications campaign in Guatemala (including translating the Memo into Spanish and disseminating it to groups and indigenous communities working on topics addressed in the Memo). Materials produced with grant funds: Spanish report <a href="#">here</a> , English report <a href="#">here</a> , Spanish infographic <a href="#">here</a> .

### 4. Fueling Advocates Initiative: Grants to NGOs

These grants are provided to not-for-profit NGOs (non-governmental organizations) to help them make use of academic research and experts to bolster their work in tackling large-scale /industrial animal agriculture in low- and middle-income countries.



Name of Organization	Purpose of Grant
<b>Animal Policy International</b>	Develop benchmarking frameworks and methodologies to assess the animal welfare standards of imported animal-based foods, and understand the supply chains of these foods, using New Zealand as a case study.
<b>Aquatic Life Institute</b>	Develop templates to collect data from aquaculture associations in Asia, South America, and other regions and evaluate the data (as part of a large-scale comprehensive research project to document and communicate best practices in aquaculture concerning well-being of farmed fish and shrimps).
<b>Animal Welfare League</b> [in Ghana]	Compare the economic costs of battery cage systems versus cage-free systems in Ghana, and investigate farmers' perception of adopting cage-free systems.
<b>Asociación para el Rescate y Bienestar Animal</b> [in Peru]	Collect and analyze data about cage-free /free-range eggs production in Peru, including interviewer farmers, in order to develop this sector.
<b>SDSN (Sustainable Development Solutions Network) Nigeria</b>	Use local academics to collect data for a better understanding of the out-grower model of poultry production in Nigeria - a model that may be a key driver of the recent acceleration in intensive production.
<b>The Humane League, Mexico</b>	Use local academic researchers to undertake a study of Mexican consumers' attitudes, habits, and willingness to pay for cage-free eggs.
<b>Agriculture and Forestry Research &amp; Development Centre for Mountainous Region (ADC)</b>	Partner with local academic researchers to help small-scale ethnic minority female chicken farmers in the northern mountainous region (NMR) of Vietnam who are being harmed economically by new industrial chicken operations.
<b>Animal Equality Mexico</b>	Ask local academic researchers to design and implement a model and information system that reliably estimates the number of animals at each stage of the food animal production cycle in Mexico annually.
<b>Fórum Nacional de Proteção e Defesa Animal</b>	Hire consultants to set up a science advisory board of local academic experts for the organization.
<b>Fórum Nacional de Proteção e Defesa Animal</b>	Use local academic experts to research issues related to hens welfare and pigs welfare in Brazil. Materials produced with grant funds: Report on animal welfare courses in Brazil universities (English <a href="#">here</a> , Portuguese <a href="#">here</a> ). Report on Brazilian consumers' opinions of eggs <a href="#">here</a> . Report on cage-free and crate-free production systems in Brazil (English <a href="#">here</a> , Portuguese <a href="#">here</a> ).
<b>Good Food Fund</b>	Use academic materials and academic experts (in and outside China) in its research into the topic of farm animals and animal welfare in Chinese culture and history, so that the papers it produces on this topic are based on traditional Chinese (not Western) views and values.
<b>Institute for Agriculture &amp; Trade Policy</b>	For staff time to utilize academic research for its ongoing work against global industrial animal agriculture.

<b>Institute for Agriculture &amp; Trade Policy</b>	For staff time to make greater use of academic experts and materials for campaigns to expose industrial animal agriculture's high greenhouse gas emissions, especially the role of multinational agri-food corporations.
<b>Animal Equality</b>	Use local scientists to conduct research into the use of growth promotion chemicals in industrial animal farms in Mexico in order to support its public campaign and its discussions with policy makers.
<b>Global Food Partners</b>	Partner with experienced academics to conduct train the trainers work at model cage-free eggs farm in Indonesia.
<b>Global Food Partners</b>	With key involvement of academics, conduct focus groups of producers of cage and cage-free eggs in China, Malaysia, Indonesia, Thailand, Japan in order to understand their challenges in operating high animal welfare cage-free farms.
<b>World Resources Institute</b>	Engage with local academics in order to advance its work to reduce beef overconsumption and encourage plant-based diet in Brazil; also to develop idea-sharing among academics and food industry representatives.
<b>Brighter Green</b>	Engage with academics in Africa and use academic materials to help its plan to develop a new initiative about large-scale commercial animal farming and sustainable food systems in 3-5 countries in sub-Saharan Africa.
<b>Otwarte Klatki</b>	Commission local academic researchers to review the relationship between large-scale animal farming and emerging infectious diseases and antibiotics-resistance in Ukraine and Poland.
<b>Sinergia Animal</b>	Use academic researchers in Argentina and in Columbia to conduct projects on salmonella contamination and antibiotic use in egg production, and hold two workshops on farm animal welfare for local academics and researchers, one for Latin America, one for Southeast Asia.
<b>Sinergia Animal</b>	Use local academics to research the harm to human health caused by the use of antibiotics and by salmonella contamination in industrial cage-egg facilities in Indonesia, Chile, Columbia.
<b>Open Cages Ukraine</b>	Commission local academics to do economics-focused research on egg producers transitioning out of cage system in Ukraine, so as to show producers that cage-free system is a better investment than changing to enriched cages.