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by

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Global
Food Ethics
Project

MORAL MAPS

7 Projects to Make Progress on Ethics and Global Food Security in 5 Years



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Moral Maps

The Global Food Ethics Project team developed “moral maps” of issues and disagreements in global food security and food systems that are, in whole or in part, ethical.¹ These maps were based on interviews with all Working Group members, critical analysis of the literature, and commissioned papers. The primary purpose of the moral maps was to served as a starting point for the daily discussions at the *Feeding the World, Ethically* meeting held in October 2014 (Ranco, Italy).

Some of the ethical issues identified on the moral maps are hotly debated and have given rise to formal disagreements between opposing camps. Others are widely recognized as morally important and are not so much contested as unresolved. And still others highlight problems that have so far gone unacknowledged.

Though not exhaustive of any and all potential ethical issues, the maps capture many of the most pressing moral concerns in global food security and food systems. A total of more than 200 issues were identified and divided into the following seven areas:

- Human Population Health and Nutrition
- Welfare of Farmers, Farm Workers, & Food Chain Workers
- Projecting Food Need, Demand, and Supply
- Crop Production
- Animal Agriculture and Animal Welfare
- Environment, Food Systems, and Agriculture
- Economics and the Global Agrifood System

This document has been edited slightly for clarity between the Ranco meeting and its posting online. For information on post-Ranco plans for progress on these issues, please visit www.bioethicsinstitute.org/globalfoodethics.

Baltimore, MD, May 2015

¹ Because there is no standard distinction between “moral” and “ethical” in philosophy, we use these adjectives interchangeably.

Human Population Health and Nutrition

Moral Assumption

All people, now and in the future, should have affordable access to safe, sufficient, and nutritious food, and the conditions necessary to benefit from that food, for adequate health across the life span.

Rights, Duties, and Institutions

1. Except in emergency situations (e.g. war or natural disaster), whether the “right to food” is really the right not to be poor
2. Whether there is a fundamental right to adequate nutrition (sufficient to prevent both undernutrition and overnutrition) and, if so, upon which specified parties correlative obligations fall
3. The absence of fixed responsibilities/accountability for population nutrition, complicated by the diverse, multi-sectorial institutions involved (e.g., national and international, government and non-government, food and agriculture, education, water and sanitation, healthcare)
4. Ethical permissibility and/or desirability of alternative policy options for food and nutrition assistance (e.g., monetary or in-kind, targeted or non-targeted, universal transfers)
5. Whether the narrative about agriculture’s role in securing adequate nutrition should be broadened beyond the focus on increasing aggregate food supply and improving income
6. Extent and nature of the moral obligations of *both* farmers *and* the agrifood industry for the safety and nutritional value of the food they produce and market; for industry, whether/how these obligations extend to suppliers/partners along the food chain (with or without formal contracts)
7. The extent and nature of the moral obligations of *both* farmers *and* the agrifood industry arising from health effects of their activities (e.g., use of pesticides, hormone and antibiotics; animal waste runoff) on populations (neighboring communities and general population)

Inequalities, Health, and Nutrition

8. That malnutrition and hunger are much more prevalent in low- and middle-income countries, and in the poor populations of all countries
9. That, in many parts of the world, women, girls, and other socially disadvantaged groups are more likely to be malnourished and hungry than men, boys, and more socially powerful groups
10. That many people in the world do not have sufficient purchasing power to secure sufficient, nutritious food for themselves and their families

11. Discriminatory perceptions which may lead to a systematic undervaluation of the contributions, needs or abilities of women and girls and other disadvantaged groups; extent to which serious adverse implications for their food and nutritional security
12. Extent of the permissible means that governments can use to correct or compensate for food and nutrition-related discriminatory perceptions
13. The extent of public authorities' obligation to anticipate the effects of discriminatory perceptions on the implementation of food and nutrition policies
14. Whether, as a consequence, countries and cultures do not see resultant inequalities as unfair
15. Inclusion of obesity, but not nutritional deficiency diseases, in debates about the rising importance of global non-communicable diseases

Trade-Offs and Priority Setting

16. How priorities ought to be set in nutrition policies (including treating vs. preventing malnutrition) and among different sub-populations (e.g., children, pregnant women, adolescents)
17. Whether children (and other groups with increased nutrient requirements) have a special claim on food and other nutrition resources, and whether children or other groups should be privileged in food demand projections and in food security debates
18. The role that intergenerational effects (e.g., improved nutrition in pregnancy, well-nourished children becoming more productive adults) should play in food security policy
19. Managing tradeoffs between environmental sustainability in food production and meeting the nutritional needs of the world's population, with particular focus on animal-source foods

Animal Source Foods

20. Ethical significance of the claim that consumption of animal-source foods provides micronutrients that are critical to human health, difficult to obtain from plant-sourced foods, and virtually impossible to do so on a global scale
21. Using one third of global cereal production to meet demand for animal products among the comparatively affluent, while many people experience, or are at constant risk of, starvation
22. Inequitable global access to animal source foods; disproportionate consumption by US and other high-income countries
23. Whether it is ethically acceptable to ask the governments of emerging economies and their newly middle class populations to moderate their consumption of animal food products

Food Choices and Preferences

24. Ethical obligations of, and limits on, state interference with individual food choices and food offerings when the goal is to promote: a) population health; b) individual wellbeing

- (health promotion); c) environmental sustainability; and/or d) welfare of non-human animals
25. Recognizing that health/nutrition is not the only value that food serves (e.g., aesthetic pleasure, comfort, preserving cultures and traditions)
 26. Meaning and value consumers' freedom of choice in the food marketplace

Food Safety and Quality

27. Whether there is a fundamental right to safe food and, if so, upon which specified parties do the correlative obligations to ensure safe food fall
28. Whether it is ethically permissible or ethically required for food safety standards to vary from country to country, and in particular, between high- and low-/middle-income countries
29. Whether low-income countries should operate with the same food safety standards as high-income countries when most of their populations do not participate in commercial markets
30. Low-income governments' obligations, if any, to ensure the availability of foods that meet high-income country safety standards for wealthy citizens who are willing to pay for them
31. Impact of food safety standards on the poor, particularly in low income countries where many people are food and nutrition insecure; safety vs. affordability
32. Trade-offs related to demand for traceability of food
33. Whether laws prohibiting GMOs based on their perceived ethical impermissibility make improving food safety more difficult
34. Whether the argument against GMO foods on food safety concerns is ethically defensible
35. Moral importance of establishing the health claims of organic farming practices (e.g., that pasture-fed animals produce healthy fats)
36. Role of precautionary principle in evaluating the health impacts of new agricultural practices
37. Whether higher food safety standards place ethically unacceptable economic burdens on small producers/farmers, including denying them access to markets
38. How human interests in affordable access to animal source products should be balanced with population health risks of non-therapeutic use of antibiotics in animal management
39. Intentional adulteration of food products by farmers or food processors
40. Assigning obligations to provide clean water for human populations outside of government operated water supplies

Welfare of Farmers, Farm Workers, & Food Chain Workers

Rural/Urban Dynamics

1. In developing countries, how to balance the interests of smallholder farmers and urban populations; who does the balancing; what mechanisms can give sufficient voice to different parties, especially the most disadvantaged or discriminated against (e.g., landless farmers, rural women, the urban poor)
2. Whether it is morally permissible for low-income country governments to depress the urban price of food for the benefit of urban consumers when this depresses the price received by their farmers
3. Whether larger scale, industrial/mechanized agriculture is necessary to ensure food security for urban populations; if yes, how to take into account the rights and interests of smaller holders
4. Whether states should intervene to decelerate the rate of rural-urban migration
5. Whether governments have an obligation to provide farmers and their families meaningful opportunities when they are transitioning out of farming; moral impermissibility, permissibility, or desirability of policies for pursuing this goal
6. Whether there is ongoing systematic discrimination against rural areas in allocation of national development strategies and investments in rural public goods essential for economic development (e.g. rural infrastructure, education, health care) of both agriculture and nonfarm sectors, despite the fact that three quarters of extreme poverty is situated in rural areas

General Orientation of State Policies

7. Whether certain policies and regulations are incompatible with, or undermine efforts for, providing workers all along the food value chain with meaningful work prospects and access to social benefits that are comparable to those of workers in other economic sectors
8. To what extent and how farmers, farmworkers, and food value chain workers should be involved in defining the policies that affect them; roles of social movements, trade unions, and NGOs; problems associated with inadequate representation of all categories of workers
9. Whether extremely low-income people, many of whom are located in rural areas, should be the first priority for pro-poor development strategies
10. Whether governments can permissibly endorse agrarian ideals or should remain neutral towards different visions of the good life; morally significant consequences of either option for the life prospects of rural populations (individuals and communities)
11. Whether the state should combat the informal food economy (because it increases the risk of exploitation of vulnerable populations and has a negative impact on public health) or support it (because it provides livelihood and access to food to many people living in developing countries)

12. Whether it is ethical for a country to force local production of staple foods when the same agricultural resources could produce more value-growing cash crops (perhaps at lower environmental cost) and would allow the local population to buy more food with the proceeds than it could grow

State Support to Farmers

13. Moral permissibility of different objectives for agricultural subsidies; in particular, protecting ways of living, landscapes, and economic interests
14. Whether certain price-support practices are morally impermissible or morally undesirable (e.g., price supports that distribute the benefits in proportion to sales or production, thus benefitting disproportionately larger, usually more prosperous farmers)
15. Whether it is morally permissible to substitute agricultural subsidies for investments in rural public goods (e.g., rural roads, agricultural research and education)
16. Whether the comparatively limited access of small farmers to credit is unfair
17. Whether the comparatively limited access to new technology is unfair
18. Whether governments have an obligation to remove technological constraints on family farmers so that they can fully participate in any future growth in demand
19. Whether low-income country governments undermine the credibility of agricultural cooperatives designed to give small farmers market power by politicizing them (e.g. using them as conduits for cash to farmers prior to elections)
20. Whether targeting of agricultural support and subsidy policies to staple crops, to the relative exclusion of nutrient-dense foods (fruits and vegetables) that are much needed for human nutrition and in relative short supply, is morally permissible

Corporate Ownership and Vertical Integration²

21. Conditions under which vertical integration is compatible with economic arrangements that offer farmers, farmworkers, and workers along the food value chain fair compensation; arrangements which might take unfair advantage of them
22. Whether widespread arrangements in vertical integration deprive farmers, farm workers, and food value chain workers of meaningful choice with respect to certain practices and undermine their sense of moral integrity (e.g., farming methods; use and protection from agrochemicals; deciding what to feed animals, how to raise them, or how to slaughter them)
23. Whether and how vertical integration can be voluntarily changed or regulated so as to address moral concerns for farmers, farm workers, and food value chain workers

² These issues are also discussed in the moral map on economics and the global agrifood system.

Gender Issues

24. Whether female farmers are unfairly disadvantaged by a male bias in state support services (e.g., provision of inputs, information about new technologies, access to water, subsidies) that is rooted in culturally-mediated false perceptions of the role, contributions, and abilities of women in farming
25. Whether culturally-mediated false perceptions of women's contributions, abilities and needs negatively and unfairly affect women's access to land (via inheritance, state transfers of land to households, or the market)
26. Whether some laws, policies or social practices systematically deprive female farmers of equal rights to land ownership, land access, and access to credit and other resources; whether they are deprived of the ability to easily defend those rights

Other Disadvantaged Groups

27. The special ethical concerns and vulnerabilities of migrant and casual labor in agriculture
28. The special ethical concerns and ambiguities of child labor on family farms
29. How to adequately protect the interests indigenous peoples have in customary land and water use or traditional seeds

Land reform

30. Whether property distribution of farmland should not be so unequal as to cause major, avoidable harm to non-owners' access to equal opportunity
31. Whether redistributive land reform is morally permissible or desirable based on equal opportunity, other metrics of equality, or other values (e.g., liberty, sustainability, personal responsibility)
32. Whether redistributive land reform is an efficient and morally defensible way to increase food security, address vulnerability (e.g., slipping into deeper poverty for lack of assets and income in bad years), increase opportunities, and secure non-domination from large land owners
33. Whether redistributive land reform benefits rural populations but undermines the food security of urban populations
34. Whether, or under what conditions, setting higher limits (ceilings) to land areas (allowing for quality) that a person or household may legally own is morally permissible or desirable
35. Whether defensible land reform should set lower limits (floors) to land area (allowing for quality) that a person or household may legally own
36. Adjudicating trade-offs between productivity gains from smallholder individual property rights after land reform and the benefits of co-operatives for the sustainable use of resources and joint marketing

37. Whether some alternatives to redistributive land reform to reduce unequal ownership of land (e.g., collectivizing land reform; direct action ignoring, bypassing or overthrowing the state) are morally impermissible (based on their consequences or in principle)
38. Whether some alternatives to redistributive land reform are, all things considered, morally preferable because they are either voluntary and/or more effective in addressing collective action problems (e.g., an ethics-based movement that transfers land to the poor; regulated tenancy)
39. Whether the tension between claims based on equality of opportunity (or other goals) and legitimate incumbency (property rights) is irresolvable (e.g., because these values cannot be ranked or weighed/lack of common currency), or whether the moral permissibility and desirability of land reform can be addressed on a case-by-case basis
40. Moral evaluation of alternatives to redistributive land reform (in particular, tenancy)

Occupational Health and Safety in the Agrifood Sector

41. Given the prevalence of corruption, lack of political democracy and public accountability, and deficiencies in the enforcement of laws and regulations in developing countries, how to assign responsibility for minimal standards of occupational health and safety in the production of agricultural products that benefit consumers in affluent countries and transnational companies
42. How the fact that much of the agrifood sector is largely informal affects moral debates on standards of occupational health and safety
43. Whether globalization puts developing countries under pressure to adopt low occupational health and safety standards, or not to enforce existing standards, to remain competitive in international markets
44. Whether globalization puts developed countries under pressure to maximize profits by lowering health and safety standards
45. Particular moral concerns for the health and safety of illegal migrant workers and children in the informal and formal agrifood sectors
46. Features of agriculture that increase moral concerns for the health and safety of farmers, farm workers and their families, including seasonal, temporary, casual, low-paid, isolated work and blurred boundaries between home and workplace (e.g., overcrowded accommodation for seasonal workers)
47. Whether there are morally relevant differences between different types of agricultural production, ownership and use of land (e.g., subsistence farming, slash-and-burn agriculture, commercial farming, plantation agriculture) that bear on responsibilities and accountability for health and safety
48. Need to secure levels of safety and health for those involved in food production, especially animal agriculture, that are comparable to levels in other industrial sectors; recognizing inequities in occupational risk, with animal production being especially dangerous to health

49. Moral implications of anticipated effects on employment opportunities of (1) improving, or better enforcing, occupational health and safety standards, or (2) mechanization (e.g., harvest mechanization avoids exposing workers to risk by eliminating their positions)
50. Problems of dual loyalty of occupational health and safety practitioners employed by private agribusinesses
51. Whether structural adjustment policies restrict the capacity of states to improve or enforce occupational health and safety standards in the agrifood sector
52. Whether prevailing power differentials in the workplace (especially for temporary, undocumented agricultural workers, as well as female workers) morally compromise occupational health and safety measures (e.g., issues of consent, stigma, and fear for employment status)
53. Assigning obligations and responsibilities for maintaining essential services necessary for occupational health and safety (e.g., healthcare) for farmers and farm workers in depopulated rural areas
54. Extent to which farmers, farm workers, and slaughterhouse and food processing plant workers are inappropriately held accountable for unsafe behaviors, accidents and injuries (victim-blaming)

Projecting Food Need, Demand and Supply

Moral Significance of Food Projections of Need, Demand, and Supply

1. Moral significance and implications of food projections; potential for harm and injustice when projections miss the mark but play a role in government
2. Moral significance and practical implications of failing to produce enough food to respond to current and future need (e.g., pressure on food prices that disproportionately and severely harm the world's poor, food shortages, political unrest, etc.)
3. Specified parties upon whom obligation falls to ensure that enough foods of the right kinds are produced
4. Whether the food security/food systems debate is best framed in terms of a tension between 1) a concern for ensuring adequate food production capacity and 2) a concern for fairness in the production, distribution, and consumption of food
5. Whether the paramount moral importance of producing enough food of the right kind unduly dwarfs other morally significant considerations

Concepts, Operational Definitions, and Measurement

6. Moral importance of expanding the dominant measure of food security (FAO) from meeting basic dietary energy requirements to also meeting protein, vitamin, and mineral requirements; implications for projection models
7. Whether different ways of measuring and tracking malnutrition have different ethical ramifications; implications for projection models
8. Ethical challenges in developing a global account of the concept of a sustainable diet; implications for projection models
9. Ethical challenges in developing consensus about an optimal and acceptable human diet; implications for measurements of food security and projection models

Projecting Need versus Demand

10. Responsibilities of scientists to provide scenarios for future demand for food compatible with the moral obligations to achieve universal food and nutrition security; whether this is projecting need (understood as food and nutrition security for all) rather than demand
11. In determining the production required to feed the world, the moral importance of mainstream projection models' continued focus on estimating merely food demand rather than also food need (understood in terms of nutrition security for all)
12. Responsibility to produce alternative projection scenarios specifically regarding resource-intensive fruits and vegetables, to meet current and future population nutritional needs

13. Whether/how adequate nutrition, including its non-food specific components (healthcare, sanitation, etc.), should be included in projections about global food security (currently focused on calories to eliminate hunger and immediate threats to survival)

Projecting Demand

14. Whether mainstream projections of future demand for food are severely inadequate and therefore morally unacceptable because they take nothing more into account than projected population growth, estimates of increased consumption of resource-intensive foods associated with changing trends in dietary preferences (urbanization effect) and per capita income growth
15. Who benefits from and who is harmed by current practices and assumptions of mainstream projection models of demand; political and economic decisions based on those projections
16. Moral importance of projection models making explicit the assumptions upon which their models rely; recognition that many of these assumptions have ethical implications or are not ethically neutral
17. Whether mainstream projections of future demand for food select scenarios that depend on a morally unacceptable assumption that severe poverty and profound inequalities will not be significantly reduced in absolute terms in the future
18. Whether mainstream projection models do and should include scenarios that do not perpetuate existing unjust inequalities in income and wealth, including poverty levels and their implications for food demand
19. Recognizing that projections of food demand should not only include agricultural products in raw form, but also explain how, and how much, diverse agricultural products (e.g., grains, oilseeds, fruits, vegetables, poultry, and livestock products) are included in these projections and why
20. Recognizing the possibility that a broad range of alternative policies could alter the assumptions of current models; debating criteria that make a policy option in the context of scenario-building morally permissible or desirable, relevant, plausible, reasonable, politically acceptable, feasible, etc.
21. In alternative scenarios projecting food demand, what assumptions about population control are compatible with the obligations of, and limits to, state action on reproductive choices
22. In alternative scenarios projecting food demand, what assumptions about consumption patterns are compatible with the obligations of, and limits to, state action to modify dietary patterns at the population-level
23. In alternative scenarios projecting food demand, what assumptions about rate of urbanization are compatible with the obligations of, and limits to, state action to alter urban migration

24. In alternative scenarios projecting food demand, what assumptions about increases in the education of girls and in opportunities for women in the paid work force are compatible with minimal demands of justice
25. Whether, under some assumptions about food waste and postharvest loss reduction, unacceptable burdens are placed on certain populations or sectors of activity
26. Whether assumptions that age, sex, and activity-level of populations will remain in the same proportions as in the base period are technically and morally problematic

Projecting Supply³

27. Moral significance of assumptions about whether or how much existing additional arable land should be brought into crop production
28. Moral implications of various assumptions about the projected rate of yield gains for priority setting in agricultural R&D and agricultural policy
29. The moral significance of assumptions of projection models of food supply with respect to international trade in agricultural products⁴

³ This section is tightly connected to the moral map on crop production.

⁴ This question is tightly connected to the “Economics and the Global Agrifood System” map.

Crop Production⁵

Agricultural Intensification and Land Use

1. Whether (and if so, why) it is morally impermissible or undesirable to massively expand farmland area in order to increase food production, fiber production, or biofuels
2. Adjudicating trade-offs between increasing yield, multi-functionality, and maintaining ecosystem services
3. Adjudicating trade-offs between land sparing and land sharing
4. Adjudicating trade-offs between multiple ecosystem services of agriculture
5. The extent to which moral disagreements over the permissibility and desirability of different farming methods (e.g., conventional agriculture and organic agriculture) can be diminished in the light of the best scientific evidence on the performance of those methods
6. Moral justification for evaluating farming methods by focusing on their outputs versus their inputs and process
7. Whether methodological disputes in agronomy are to some extent based on different moral assumptions
8. Extent to which broadening the range of farming techniques under consideration (beyond conventional versus organic, such as integrated farming) can help redefine ethical issues and disagreements on crop production
9. Moral significance of cultural values for crop production practices and selection of cultivars

Ecological or Sustainable Agriculture

10. Whether debates on intensification are best advanced with a capacious understanding of sustainability (e.g., as a placeholder for what is broadly morally permissible or desirable) or a narrower understanding of sustainability (environmental only)
11. Whether the goal(s) of ecological intensification should be to: (1) avoid or minimize additional moderate or catastrophic environmental degradation; (2) reduce or minimize existing levels of environmental degradation; (3) improve current environmental quality; or all three (and why)
12. Whether large-scale mono-cropping in mechanized agriculture, with the use of agrochemical inputs, raises particular ethical concerns with respect to environmental quality, fauna and flora biodiversity, agri-diversity, and occupational health and safety that “ecological” agriculture can or cannot address

⁵ Many of the problems mentioned in this moral map overlap with issues that are discussed in the “Environment, Food Systems, and Agriculture” Moral Map.

*Participation*⁶

13. Extent to which participation of farmers and other stakeholders in decision-making about farming practices, technological choices, and plant breeding is morally obligatory or simply desirable
14. Moral evaluation of alternative institutional mechanisms to secure meaningful participation

*Agricultural Research and Development*⁷

15. Moral implications of knowledge gaps in agriculture (e.g., best practices for the use of certain pesticides; agrochemical packages); assignment of responsibility for supporting research designed to build evidence to fill knowledge gaps that are of special ethical significance
16. Extent to which it is morally obligatory or desirable to integrate indigenous knowledge in agricultural research
17. Whether agricultural R&D is a public good or a global public good; if yes, what are the ethical implications
18. Moral justification for the increasing public investment in agricultural R&D
19. Extent of, and the justification for, the obligations (if any) of affluent countries to fund a global agricultural R&D portfolio that would benefit farmers and consumers in low- and middle-income countries
20. Extent of, and the justification for, the obligations (if any) of governments of countries with rapidly emerging economies, and low-income, typically agrarian, developing countries to fund public agricultural R&D that would benefit their farmers and consumers (when these compete for the allocation of scarce resources with other priorities)
21. Extent and nature of the obligations and responsibilities (if any) of private charitable foundations to fund public agricultural R&D
22. Extent and nature of the obligations and/or responsibilities (if any) of transnational private companies to fund an agricultural R&D portfolio that would benefit farmers and consumers in middle- and low-income countries
23. Adjudicating conflicts between the national self-interest of governments of high-income countries in securing the competitiveness of their agricultural products on international markets, their moral obligations (if any) to fund agricultural R&D in middle- and low-income countries that could result in new products competing with donor countries' own products, and the right to development of middle- and low-income countries
24. Specific morally permissible, obligatory, or desirable criteria for setting priorities in agricultural R&D by international public research consortia and private for-profit companies

⁶ The problems under this heading apply equally to animal agriculture.

⁷ In this section, we have in mind specific problems raised by agricultural R&D in crop production, but many of the problems listed apply equally to animal agriculture.

25. Extent to which moral disagreements over the use of transgenic crops can be lessened if these crops result from public research, private-public partnerships, or are made widely available by for-profit companies at an affordable price
26. Specific moral concerns (if any) with private-public partnerships in agricultural R&D (e.g., integrity of research; erosion of commitment to public good mission)
27. Specific moral concerns (if any) with different intellectual property rights regimes limiting public access to technological innovations (e.g., R&D on seeds) or essential information in agriculture (e.g., high quality historic and real-time weather data)
28. Extent and nature of legitimate means that farmers, NGOs, and civil society can use to voice dissent with mainstream views on agricultural R&D, but also policies, regulations, and practices, in particular, naming and shaming tactics, lawsuits, civil disobedience, destruction of experimental fields (*les faucheurs*)

Animal Agriculture and Animal Welfare⁸

Animal Rights and Welfare

1. Whether it is ethically permissible for humans to eat non-human animals
2. Whether vegetarianism or veganism is morally required (excluding infants and children) for environmental or animal welfare reasons, or is praiseworthy but goes beyond the call of duty
3. If eating non-human animals is ethically permissible, identification of industrial or small farmer practices that are ethically impermissible on animal suffering grounds
4. Whether industrial production/intensification,⁹ as currently practiced, provides for a minimum standard of animal welfare (generally identified as “The Five Freedoms”¹⁰)
5. If intensification is necessary for food security, whether intensification can meet animal welfare concerns
6. Whether measures of animal welfare in current industrial practice are adequate (e.g., using health and productivity as the sole measure of welfare)
7. Whether there is an inability to set appropriate standards for animal welfare because of an inadequate understanding of what constitutes welfare and suffering for different animal species, including fish as well as mammals
8. Whether those who consume animal protein ought to switch to species thought to have a lesser or minimal capacity for suffering (e.g., mollusks, insects, fish)
9. Whether some percent of animals are not killed quickly and completely, and thus suffer additionally and unnecessarily in rapid and other slaughtering practices (also an issue for worker safety)
10. Whether animals are physically abused, in both industrial and owner operated/owner controlled operations, and whether there are adequate and enforceable laws protecting against cruelty

Environment

11. Whether current industrial production (e.g., animal waste exceeding the absorptive capacity of available land) results in ethically unacceptable levels of environmental degradation, including the pollution of water sources
12. Whether the gases produced by animal agriculture, grain fed (industrial diets) or grass fed, result in ethically unacceptable changes to the world’s climate

⁸ Ethical issues in vertical integration, occupational health, and food safety are addressed in other moral maps.

⁹ We use the term “industrial” as a descriptive term, it covers many types of large-scale intensified production, and it does not presuppose a moral judgment about this type, or any other type of production. Global production of meat is close to a 50/50 split between large-scale industrial production and small-scale owner operated/owner control production. In wealthy countries, industrial production of animal protein is greater than 90%. In low- and middle-income countries, industrial production is currently less than 50%, although industrial production practices in these countries are increasing.

¹⁰ Freedom from hunger or thirst; freedom from discomfort, freedom from pain and injury or disease; freedom to express normal behavior; freedom from fear and distress.

13. How to ethically balance negative effects of animal production on the environment and climate change with both human nutritional need for animal protein and preferences/demand
14. Whether the large amounts of water needed to produce animal protein, including most fish production, is ethically acceptable
15. Whether those who consume animal protein ought to switch to species thought to have less negative effects for the environment and climate change (e.g., mollusks, insects)

Technology

16. Ethical challenges posed by the development of cell culture techniques for the production of animal protein; alternatively, extent to which cell culturing may be a viable technological fix to current moral objections to animals as human food (based on animal welfare/rights or environmental degradation)
17. Whether certain genetic modifications of animals pose specific ethical issues with regard to animal welfare (e.g., enlarging the breast of turkeys to the point where the animals can no longer stand) or characteristics of species that are thought to be in some sense fundamental (e.g., genetic modification of animals that renders them incapable of reproducing)
18. Whether the cloning of animals to facilitate production practices is ethically acceptable

Neighboring Communities

19. Moral implications of the potential for exacerbation of disadvantage for people who live and own property in proximity to intensified animal operations, most/many of whom are low income (e.g., from decrease in value of land and homes)
20. Whether people who live and own property in proximity to intensified animal operations, most/many of whom are low income, have their quality of life compromised because of the aesthetics, health risks, and fear of health risks related to environmental degradation
21. Whether poor people suffer disproportionately from the environmental effects of animal production

Environment, Food Systems, and Agriculture

Agriculture's Effect on Environmental Quality

1. Whether nature in general, and ecosystems in particular, have moral status that grounds moral demands made on their behalf to limit the impact of various agrifood-related activities on them
2. How to understand and evaluate the force of intergenerational solidarity/justice claims in adjudicating the competing demands of sustainability (environmental quality and use of natural resources) on agricultural practices and policies
3. Whether it is ethically impermissible that governments of high-income countries ask middle- and low-income countries not to destroy their forests for agricultural use when that is exactly what they did at similar points in their economic development; whether that demand would be permissible if accompanied by adequate compensation
4. Moral implications of “disowning” practices (e.g., some industries disowning waste in animal production; not accepting a spoiled crop)
5. Value of biodiversity and impact of agricultural on it
6. Value of wildlife and impact of agriculture on it

Environmental Regulations and Agrifood Activities

7. The ethical obligations of, and limits to, state regulation of agrifood-related activities to protect environmental quality
8. Whether high standards of environmental sustainability in agriculture of high-income countries without critical changes in consumption patterns are morally problematic because they *de facto* relocate environmental externalities to developing countries with lower standards where the food they consume is produced
9. Moral evaluation of alternative institutional mechanisms to set environmental quality standards related to farming and agribusiness
10. Whether risks of transfer of DNA material from transgenic crops to other plants are most adequately addressed by regulations and monitoring mechanisms or the application of the precautionary principle
11. Meanings and validity of the precautionary principle to regulate risk of agrifood activities; alternative principles

Climate Change

12. Extent to which climate change aggravates or alters existing ethical problems in agrifood activities, the salience and urgency of certain issues, or the range of appropriate policy responses to those problems

13. Morally relevant differences between the impact of climate change on agricultural production and on food systems
14. Principles for fair distribution of the burdens of adaptation to and mitigation of climate change in agrifood sector among different actors (e.g., farmers, vertical integrators, agroindustry, distributors, consumers), and different countries (e.g., high-income versus middle- and low-income countries), and different generations
15. Assigning moral responsibility for past and present emissions of greenhouse gas (GHG) in agriculture and other sectors; problems with discounting rate
16. Disproportional impact of climate change on the agrifood systems of developing countries

Water and Natural Resources

17. Nature and demandingness of moral constraints on the use of natural resources (renewable and nonrenewable) for agriculture
18. Ethically permissible, required, or desirable systems of property rights over access to water for agricultural use
19. Implicit moral assumptions of intergenerational justice in the context of management of natural resources for agrifood activities (e.g., trade-offs between the interests of present and future generations of the food insecure)

Economics and the Global Agrifood System

Agrifood Exceptionalism, Ethical Values, and the Market

1. Whether there is something morally special about agriculture and food (“agrifood exceptionalism”) that justifies them being treated differently from other commodities or whether they should be treated like any other economic sector with regard to markets, regulation, and international trade agreements
2. Extent to which values that are distinct from economic efficiency, such as social justice, solidarity, the future of human cultures, the value of ecosystems, animal welfare, social and political ideals or aspirational goals, should play an important part in evaluating and reforming agrifood markets, and why
3. Whether the rights claims of humans, animals and those attributed to nature pose fundamental challenges to a market-based agrifood system
4. Meaning and justification of the food sovereignty/food justice claim that agrifood systems should be controlled more democratically than they are at present or more democratically than, or as democratically as, other economic sectors
5. Whether agricultural research and the technologies that result from it should be understood in part as a “commons” or public good; whether this view is based on agrifood exceptionalism or on other grounds
6. Role that the Fair Trade movement, which subjects trade to various ethical constraints regarding living standards for farmers and rural workers, should and can play in introducing ethics into market relations in agriculture and food
7. Tensions between the products and markets whose value lies in specific ethical commitments (e.g., fair trade, sustainable, organic; humane; heritage) and traditional (or commercial) markets that value efficiency
8. Whether the Fair Trade movement can become mainstream (e.g., widely available in supermarkets) without compromising its commitment to its basic values

International Trade and Its Regulation

9. What role international trade in agriculture and food should or must play in ensuring food security; whether agrifood systems should be more or less integrated across the globe
10. Extent (if any) to which international trade agreements on agriculture and food (and vertical integration) threaten the wellbeing and food security of the citizens, farmers and farm workers of low- and middle-income countries
11. When, or under what conditions, protectionist policies in agriculture are ethically problematic (e.g., misuse/ignorance of science by requiring scientifically unsubstantiated sanitary and phyto-sanitary measures to “protect” animal and plant health)
12. Whether protectionist and other fiscal tools to support rural communities in developed countries necessarily distort global markets and harm the global poor

13. Low-income countries imposing higher barriers to imports of agricultural goods from other low-income countries than from high-income countries
14. Conditions under which subsidies of agricultural products are ethically problematic in the context of international trade
15. The impact on food security (especially for the world's most poor) of wealthy countries competing, through subsidization of exports, for developing world markets
16. Agricultural exporting countries, on which other countries rely for part of their national food security, taxing/banning agricultural exports when adverse climatic conditions reduce output
17. Whether the pricing policies of low income countries turn the terms of trade against the interests of their generally impoverished farmers

WTO and Agriculture

18. Specification of procedures and institutions for governing WTO discussions on agriculture democratically; whether current WTO rules meet minimum standards of democratic legitimacy Whether public accountability is sufficient to ground legitimacy of WTO decisions
19. Whether the World Trade Organization (WTO) is capable of addressing ethical issues in international trade in agriculture because all decisions to change trade rules require consensus (which means any one of 158 member nations can prevent any decision); whether a majoritarian decision rule would be ethically preferable or equally problematic
20. Developing countries appealing to poverty of small farmers in international fora (e.g., WTO) to allow them to raise agricultural commodity prices when/if elevated prices disproportionately benefit larger farmers rather than small farmers, and disadvantage poor consumers
21. Whether addressing ethical issues in agricultural trade would require the creation of new supranational institutions

Aid

22. Whether high income countries can justifiably send surplus production associated with their subsidy programs into low income countries as "food aid" without regard for whether the recipient countries need it or not and how this aid will impact the agricultural economy of the recipient countries
23. Ethical implications of high income countries making a gift of surplus commodities to an international NGO, which in turn ships the commodity to a low income country, sells the commodity on the local market and uses the local currency proceeds to finance development projects it is carrying out there

Global Bio-Economy, Resources and Waste

24. Whether, or under what conditions, it is morally permissible for governments or international institutions to encourage the development of a bio-economy (e.g., biofuels, plastics, chemicals and pharmaceuticals), which uses agricultural products as raw materials
25. Ownership of natural resources that affect food security; whether, or under what conditions, these should be shared between and within nations, and between present and future generations
26. How to fairly allocate the burdens of reducing waste, both post-harvest (developing countries) and post-consumption (developed countries)

Values, Contributions, and Obligations of Large Scale and Owner Operated/Owner Controlled Agriculture

27. Extent to which current and future contribution of large scale agricultural and food marketing firms to food security is undervalued in ethical debates
28. Extent to which the ethical concerns of global food security and sustainability have been accepted by transnational agrifood companies and other dominant actors in the agrifood system as a normative baseline for agriculture and food market regulation
29. Relevant differences (if any) between moral and social values that corporate agribusiness endorses and values typically endorsed by farmers in small, family owned, managed, operated, and controlled farms; problems associated with the restricted ability of dependent farm workers, contract growers, and food chain workers to act on their own moral and social values¹¹
30. Whether and how transnational agrifood companies can lobby for their interests without undermining democratic control over the agrifood system
31. Whether transnational agrifood companies have a moral obligation not to do anything that makes it significantly harder for individuals who are near the margin of food adequacy to get enough food
32. Whether transnational agrifood companies have a moral responsibility for the labor and environmental conditions under which the products delivered to them are produced (with or without a formal contract); if yes, scope and demandingness of those responsibilities

Direct Foreign Investment in Land

33. Whether, or under what conditions, “cross border or transnational large-scale land acquisition” (aka “land grabbing”) is ethically acceptable (e.g., when national food security of the host country has not yet been achieved)
34. Whether direct foreign investment in land for agricultural uses is likely to result in the same negative effects on the poor of low income countries as direct foreign investment in extractive industries (e.g., dispossession of the rural poor from traditional ancestral homes,

¹¹ On this issue, see also the map on the welfare of farmers, farm workers, and food chain workers.

economic gains experienced primarily, if not solely, by political elites and urban upper and middle classes)

35. Whether direct foreign investment in land is likely to increase food insecurity and hunger in low income countries insofar as the purpose of this investment is primarily to establish agricultural production facilities to feed the citizens of wealthier countries
36. Potential negative externalities imposed on third parties by direct foreign investment, including dispossession of small holders, deforestation, displacement of local agricultural production, and increased dependency on agricultural exports and thus increased susceptibility to global price shocks
37. Whether recent international statements (G20 Principles of Responsible Agricultural Investments and new voluntary guidelines from the UN Committee on World Food Security) constitute a sufficient global response to the ethical challenges of foreign direct investment in land

Global Vertical and Horizontal Market Concentration in Agrifood And Contract Farming

38. Ethics of emerging forms of market organization; in particular, the distributional effects (asymmetry of power and control over key decisions) of vertical and horizontal market concentration in agriculture and food, from seed to shelf
39. Whether the potential for unfairness of contract agriculture lies in the differential distribution of risks between parties with vastly different bargaining power and vastly different stakes in the success or failure of their joint arrangement
40. Whether or under what conditions contract agriculture, either domestically or globally, is a form of unjust market exploitation or unjust advantage-taking
41. Whether contract chicken production in the United States, which has consigned contract producers to annual incomes at or only modestly above the poverty level with much diminished control over their livelihoods and prospects for the future, is a modern-era form of debt bondage
42. Whether contract chicken production model in the United States is a “captive supply chain contract” model
43. Whether globalization of the contract agriculture model is likely to be as or more ethically problematic than the US contract chicken production experience (see next two questions), or might it be less so
44. What kinds of studies/data are needed to help identify whether or in what ways the globalization of contract agriculture is likely to be ethically problematic
45. Whether the globalization of contract agriculture is likely to add new ethical concerns about countries being beholden to foreign capital in ways that undermine environmental and worker protection laws and being less in control over what is grown within their borders