

MORE THAN SOIL, SEEDS, AND WATER

True Cost Accounting
and an Intersectional
Sustainability Index
for Gender Equity
and Racial Justice

Developed For

 Sustainable Food Trust

THANK YOU

Published June, 2021.

This project was developed in association with, and funding from,
Sustainable Food Trust and Women Forward International.

We would like to extend our deepest gratitude to both organizations for their
commitment to a more just world for women and a food system that works for all.

Our deepest thanks go to Dr. Rachel Bezner Kerr, Professor of Global Development at
Cornell University for her dedication to her students and a brighter future.

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EXECUTIVE SUMMARY

True Cost Accounting (TCA) is gaining prominence in the food and agriculture industry. The concept seeks to measure all the benefits and drawbacks of decisions made on farms and accounts for the real cost of our food. From soil health to air quality and biodiversity, there are multitudes of ways agriculture secretly shapes our world. This report investigates ways food production impacts women and racial and ethnic minorities, people who make up a significant portion of the agriculture industry but are often overlooked or mistreated. The way food is produced today is unsustainable and dangerous; it does not sustain lives, livelihoods, or our planet. That's because we do not value much of the land, inputs, and people that create our food. And of course, we cannot value what we do not measure.

The Sustainable Food Trust developed a survey with 11 indicators that shows farmers how to make the right choices, and what impacts their current choices have on the world around us. Their Global Farm Metric is a harmonized measure of on-farm sustainability that can be used by land managers to monitor their impacts on the environment and inform sustainable decision-making. This report offers research and recommendations to better inform two of their current categories: human and social capital.

This report is the first of its kind, developing TCA tools to measure gender and racial equity on farms. The report begins with a literature review of current tools for measuring gender and racial equity in agriculture. Next, researchers used this work to develop a theoretical framework including gender equity achievements (recognition, redistribution, and representation) and racial justice (ownership, opportunity, and openness). The framework shaped a pilot survey that was tested in Canada and the United States with farmers, farmworkers, landowners, and tenants. The survey offers deep insights into structures, systems, and beliefs that may cause injustice in the farm gates.

The food we eat sees a lifetime of stories before it ever enters our fridge. So much of the discrimination women farmers and farmworkers face is systemic or structural. It's created by histories of colonialism, centuries of assumptions about naturalized ability, or past financial barriers. While not all inequities will be solved inside a farmgate, TCA makes it easier for producers, consumers, and policymakers to understand what it takes to create an equitable food system.

RECOMMENDATIONS

- 1** Embed Gender and Racial Equity Survey into the Sustainable Food Trust Global Farm Metric
- 2** Rename Human and Social Capital Pillars to Racial and Gender Equity
- 3** Revise and test pilot surveys in different national contexts
- 4** Integrate qualitative data tools into equity measurement practices

RECOMMENDATIONS

1. Embed Gender and Racial Equity Survey into the Sustainable Food Trust Global Farm Metric

The pilot-test of this instrument indicates that the questions are relevant and that they capture important and undervalued dimensions of the true costs of equitable, sustainable food production systems. Putting tangible metrics to seemingly intangible and often context-specific values (recognition, dignified work) is an imperfect and challenging exercise; however, putting measurements to these values can make them--and the diversity of farms, farmers, and farmworkers--visible. Integrating this gender and racial equity survey into SFT's overall Global Farm Metric is a first step to recognizing the importance of equitable social foundations to sustainable, diversified, and environmentally appropriate food production systems. As respondents to the pilot-test noted, "It's nice to know someone is interested in us" and "there are so many farm situations, types of farms, and conditions, what a great idea to bring to light more information about what types of farms and their conditions might be better or worse." While some respondents felt that covert questions on race and gender inequality or sexual diversity were more appropriate than asking about them directly, farmworkers in particular wanted to talk about these issues. They felt that the survey provided an opportunity to broach issues of power, insecurity, and inequality—as well as the conditions and skills that gave them pride and job satisfaction and made them feel cared for. Offering the survey in a local language to non-English speakers and to all farm workers (not just owners or operators) is an important step to ensuring that all food producers are represented and given the opportunity to share their experiences. While factors such as racial and gender equity in land and capital ownership are unlikely to be resolved on-farm, administering the survey can provide an important discussion-starter for farm operators and farming communities at large.

2. Rename Human and Social Capital Pillars to Racial and Gender Equity

The labels of “human capital” and “social capital” in the SFT Global Farm Metric Survey derive from the Household Sustainable Livelihoods Framework. Human capital refers to the cumulative knowledge, skills, capacities that can support resilience and adaptation to livelihoods shocks and adversities. Social capital refers to the networks, relationships, and institutional access that can support resilience, livelihoods success, and adaptation. As early critiques of the Household Sustainable Livelihoods Framework found, however, these terms are perceived as gender- and race-neutral and they fail to capture the dimensions of power inequalities and active discrimination that lead to unequal access to the human and social capitals. While using the terms “capitals” appears to make them measurable and therefore more easily translated into an accounting system, these terms can hide the reality of the power relations and discriminatory processes that result in differential access to social and human capitals.

As global work on gender mainstreaming in agriculture has found, when concepts of empowerment and social justice are conceived as technical problems, the underlying issues of power and justice can be “mainstreamed away.” Simply offering loans or credit to support women’s historically unequal access to training, inputs, or capital, for example, does not address the underlying issues of their unequal responsibility for care work, or the informal norms, attitudes, and threats that make certain spaces and services inaccessible or uncomfortable. When it comes to racial justice for farm workers, for example, measuring workers’ skills, job training, and human does not capture the invisible costs of fear, discrimination, insecurity, and undignified working conditions that the industrial food system currently depends upon. We strongly suggest that to address issues of power and injustice in food systems, it is important to name them explicitly. We propose therefore to rename the Human Capital and Social Capital Pillars as “Gender Equity” and “Racial Justice,” and to measure the sub-indicators as laid out in the framework. For Gender Equity, the high-level on-farm achievements can be measured in terms of equitable Redistribution, Recognition, and Representation. The sub-indicators of on-farm gender equity are organized around Agency (power to) and Resources (which includes human, social, and financial capitals); these should capture both individual-level, on-farm,



and community-level gender equity. For Racial Justice, the on-farm achievements should be measured in terms of Ownership, Opportunity, and Openness. The sub-dimensions of on-farm racial justice include equitable time accounting and wages, opportunity and security, immigration status, and language and culture; asking these questions of farmworkers, farm operators, landowners, and tenants draws attention and responsibility to all levels of farm systems. While these multiple dimensions add considerable layers of complexity to an already extensive metric, they more accurately represent the structures of constraint as well as connection, interrelation, and empowerment that are fundamental to recognize if we want to reward and support equitable, just food systems.

3. Revise and test pilot surveys in different national contexts

The pilot-test of this survey demonstrates the great diversity of farm types, farming operations, and farmers in any given rural community. Farm systems in other parts of the country have different historical gender and race relations, different policies and subsidy regimes that produce unique patterns of opportunity and discrimination. We highly recommend that this survey be tested in other North American farm systems and also that it be adapted and applied to smallholder farm systems in the Global South. While the overarching achievement objectives (racial and gender equity on-farm) are global goals, each indicator category and set of questions needs to be adapted and validated for different cultural contexts and farm systems. Measures of empowerment, equity, and racial justice are contextually and historically specific and benchmarks need to be adapted and refined to reflect that context.

4. Integrate qualitative data tools into equity measurement practices

As indicated in the framework design, one of the important lessons from the use of other standardized farm-equity measures (such as the WEAI and its iterations) is that it is important to embrace complexity and context specificity of conditions of justice and inequality. While there can be similar global patterns and manifestations of racial and gender inequality, how men and women define justice, empowerment,



and dignified working conditions varies widely, depending on local cultural and historical conditions. While a survey provides valuable data to set benchmarks and measure progress toward sustainable food systems, it is important to avoid the temptation to reduce complex power dynamics and processes to a single “empowerment” score. Qualitative data is vital not only to refining the indicators and adapting the tool for different contexts, but for opening community dialogue that can spark on-farm and systemic changes. We recommend that in further pilot-tests of this survey, open-ended qualitative data be used to complement and unpack the issues. In the communities where the survey will be administered, we recommend facilitating focus group discussions to discuss the survey results (with a representation of survey respondents) and sharing the discussion through the appropriate communications channels. In this way, the survey and follow-up dialogue can be tools not only for data collection and monitoring but catalysts for vital community conversations.

FRAMEWORK

True cost accounting (TCA) is an attempt by the global community to take stock of tangible and intangible assets that are generally left off traditional bookkeeping and out of finance tools. TCA bookkeeping may include natural assets like soil health or environmental assets like nearby water quality. These assets, which generally are not valued in a market, are given a market value and farms are then paid for, or pay for, these goods and services. Markets, the space producers and consumers exchange goods and services at a set price, account for very few of the actual services farmers and farm workers utilize or provide. For example, while farms would lay bare without micro-organisms present in soil, no micro-organism market exists for the productivity they create. The inverse is also true: when farmers choose to invest in, or build up natural environmental capital, such as microorganisms (called internalizing), there is little economic reward for doing so. In an effort to level the playing field between the variety of recognized types of capital true cost accounting was born. As The International Integrated Reporting Framework (2013) defines, “The capitals are stocks of value that are increased, decreased or transformed through the activities and outputs of the organization. For example, an organization’s financial capital is increased when it makes a profit, and the quality of its human capital is improved when employees become better trained.”

Natural capital, as Helm (2019) states, is what nature gives us for free: constant flows of water, photosynthesis, fish and animals. Social capital is the networks of connections between us that allow for powerful human connection, effective economic output, and the creation of new ideas. Human capital is the interpersonal: the knowledge, skills and experience one collects over time. Finally, financial capital is the economic or fiscal tools we use to trade goods and services such as lending institutions. There are several of TCA tools that measure these capitals and are publicly available, such as United Nations System of Environmental Economic Accounting (SEEA), The Prince of Wales’ Accounting for Sustainability Project (A4S), and the Sustainable Food Trust’s On-Farm Sustainability Tool. To date, very few employ gender or race



lenses to their environmental and social externality frameworks. This is true despite well documented research acknowledging many ways economic, climatic and environmental, and social factors impact marginalized people's ability to produce and access sustainable foods, despite the value they create in the food system (White-Means, 1987), (Aspenson, 2020), (Ahmad and Koh, 2011). Aspenson (2020) notes that while most TCA frameworks are committed to equity and whole system thinking, few embed democratic and equity considerations in their tools. This review seeks to understand how one may add both gender and racial equity dimensions into TCA to ensure women, Indigenous, Black, immigrant, and other marginalized groups of farmers and farm workers are represented and compensated for their total work provided to food production and that they can work without fear of discrimination, harm and with dignity.

The term ecosystem services, the capital generated by natural systems, is used to bring to light the invisible social, cultural, and ecological benefits provided by nature (Sandhu, 2016). This may include pollination, grass or soil's ability to filter water, genetic variation in species, or the spiritual benefits felt by preserving natural places. Equally important to the farming ecosystem is human and social capital. Human capital is commonly defined as a human's collective education, experience, personal attributes such as loyalty or health. Alternatively, social capital is the assets produced through many and varied human interactions. This may include innovation, community safety and cooperation. These services and their generated capital should not be understood to be siloed as either human or natural services. Farms must exist as natural and human spaces, together. Indeed, re-integrating the currently disaggregated natural and human spaces is necessary if we seek a sustainable food system (Patel & Moore, 2018). This report argues by knowing the true cost and benefit of ecosystem services, including gender and racial social inequities, we may begin to re-incorporate natural and human spaces, creating and exchanging value as one system. Put another way, food system researchers found their research on the basis that a good food system is not one that just feeds people, but serves as a culturally, politically, and ecologically nourishing space (FAO, 2019). By re-integrating



natural and human contributions, we argue TCA methods are capable of valuing traditionally undervalued gendered and racial and ethnic minority work provided to these food systems. Much of the inequity experienced by marginalized people is the result of both historic structures that were created to disadvantage women or people of colour, and current embedded stereotypes and barriers. Both are difficult to compensate for as externalities because, similar to pollution, the issue does not have a distinct and definable source. In relation to environmental externalities, this phenomenon is called non-point source pollution and is generally confronted using non-traditional policy methods such as endogenous monitoring (Xepapadeas, 2011). For example, farmers of colour often do not have access to educational materials or technical assistance, do not qualify for many of the national tax incentives (Hinson & Robinson, 2008) and are tasked with managing some of the most barren lands in the United States and Canada.¹ While these are certainly social capital issues, they are difficult to internalize on the footprint of individual farms.

This report reviews common conceptualizations of on-farm race equity and ways in which an on-farm sustainability tool may incorporate a well-rounded race and gender lens. Developing farm gate accounting tools in relation to gender equity is more straightforward than on-farm race equity tools, in part due to the large swath of literature and simplicity of intra vs inter variable interactions about the former. Most farms in Canada and the United States constitute a nuclear family in which the heads of business are also heterosexual life partners. Addressing complex intra-household gender dynamics through an empowerment index is feasible, though not without difficulties, because while societal gender inequity cannot be managed from the home, individual empowerment can be. In contrast, racial equity is not generally confined to the footprint of the farm and has significantly more community-based interactions. Therefore, using an on-farm sustainability index to measure racial equity will be contingent on the structure of farm employment – regardless of the fact that all farms benefit from historic and present-day racial injustice (Horst & Marion, 2019).

GENDER EQUITY

Gender inequalities in global agriculture and in US and Canada

In attempting to establish a more sustainable and equitable value system, true cost accounting should look at agriculture not only from the perspective of production and consumption, but “as sets of social, economic, and ecological relationships, [which] requires an acknowledgment that social relationships are always power relationships” (Leslie 2019, p.868). Relations of gender and race are central—not peripheral—to the organization of farm labor, agricultural institutions, and to the decisions around farming practices. In the US and Canada, the stereotypical image of the idealized “family farm model” is not a natural or inevitable evolution; this model farm structure was deliberately promoted through nationally funded extension programs, which disseminated the idea of the entrepreneurial male “farmer-as-businessman,” who owns the capital and manages the business decisions, and the subordinate “farmer’s wife,” who is primarily preoccupied with caregiving, nurturing, and domestic consumption. These socially constructed images are enduring and continue to contribute significantly to the unseen barriers and internalized challenges to gender equality and recognition of women and sexual minorities in farm systems (Leslie et al, 2019).

As the industrial model of farming took over in North America, the gendered social construction of the male farmer and the female farm helpmate on the family farm created lasting formal and informal barriers in access to networks, capital, subsidies, and loans. In the US and Canada, as in the rest of the world, one central challenge to gender equity in farm systems is failure of representation of women as farmers and misrecognition of the vital but often invisible roles that women and sexual minorities play in farm systems. Women represent only 29 percent of farmers in Canada, and it wasn’t until 1991 that women who worked on or owned farms were identified as farmers by the Canadian census (Roppel et al., 2006). Research clearly demonstrates the title is more than a name: the title is a strong indicator of land management decisions, access to financial tools, and time allocation (Leslie et al., 2019).



Many of the gender challenges that US and Canadian female farmers face are categorically similar to those that women in the Global South confront. Such barriers include inequitable distribution of the resources to support farmers and sustainable farm practices. US farm women are less likely to receive farm subsidies than men, particularly when it comes to commodity crops that require capital and mechanization; they face discrimination in accessing loans; they are less likely to access land, the primary input for farming; and they tend to be underrepresented in the farmers networks that may provide information and support in accessing such capitals (Leslie et al 2019, Brandth 2002). Women's off-farm paid income is increasingly vital to the viability of farming as a family livelihood. The likelihood that the woman pursues off-farm work has increased from thirty to fifty percent since 1980 (Corman 2006). In fact, Farm Credit Canada, Canada's largest farm finance organization, prefers farm families to have off-farm income (Roppel et al. 2006).

In addition to their exclusion from the inputs, networks, capitals, and institutions that support farmers, the perpetuation of gendered family farm ideal renders invisible and unvalued the essential caregiving work and reproductive labor that goes unrecognized in national systems of accounts (Folbre 2015, Ahmad and Koh, 2011). Globally, the disparity in unpaid caregiving work adds stress, time burdens, and health and social constraints. Even as women are equally involved in paid labor as well as unpaid farming and caregiving activities, they are not afforded the same privileges that come with the breadwinner status. Having primarily female family labor to draw on for caring labor, for example, allows men to participate in the associational and collective activities that can be essential to farm success; female farmers do not have this privilege (Patel-Campillo and Garcia, 2018).

In part because of these gendered obstacles built into the conventional farm model, women in the US and Canada are more likely to be represented in “alternative” sustainable and organic farming practices, which opens up space for women to start their own knowledge-sharing networks and promote sustainable practices. More women than ever are choosing agriculture



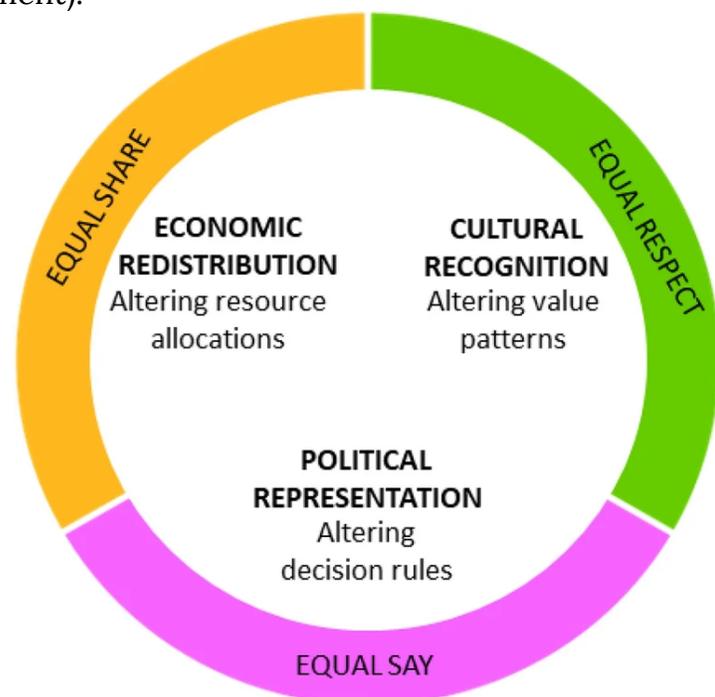
as a livelihood. The 2017 USDA census reported that 29 % of farms were operated by women, an increase of 15 percentage points from the 2012 census. In addition, 78% of female producers reported that they were involved in the day-to-day operations of the farm management, even if they were not principal owners (USDA 2017). Many women are practicing a ‘civic agriculture’, which is transforming traditional gendered roles and demonstrating a type of community-engaged entrepreneurship, which values their gendered identities as practitioners of sustainable farming practices (Trauger et al, 2009). Women’s farming networks are vital for women to challenge patriarchal expectations in agriculture, as such networks can provide solidarity, support as well as access to information and alternative financing women, as well as to promote alternative and sustainable practices, which in turn have environmental payoffs. However, such engagements can also be an additional time burden for some farm women, who are also primarily responsible for unpaid care. It is also important to recognize that such spaces that valorize “alternative” practices are predominately accessible to a particular female profile: “white, well-educated, heterosexual, and married,” who are able to access land (Leslie 2019, p. 861).

There has been a tendency to essentialize all women farmers as victims, or to valorize them as uniquely tied to the earth, intrinsically “virtuous,” and inherently more interested than men in sustainable approaches (Doss 2018, Arora-Johnson 2011). In creating a metric that values gender equity in farm practices, it is important to avoid this “virtue/vulnerability” discourse, because it represents all women as a monolithic group (ignoring dimensions of class, race, and sexuality), but also because it overlooks the systemic challenges of how gender inequality is embedded in institutions of decision-making in both Global North and South (Arora-Johnson 2011). Simply integrating or adding women to gender-biased groups or institutions won’t automatically change unequal relations; use of gender analysis is important to understand how unequal gender and power relations play out in different institutional contexts and structures (Arora-Johnson, 2011). Attention to the gender power dynamics at play in farmers’ associations as well as in the working conditions for farm workers and household farm management dynamics is important to addressing gender equity in farm systems.

Concepts of gender justice and women’s empowerment in agriculture

Valuing gender equity in sustainable farm systems can be conceptualized as a matter of **recognition, representation, and redistribution**, a framework that aims to value corrections of economic, cultural, and political inequalities that systematically subordinate women, sexual minorities, and the traits and tasks that are culturally constructed as “feminine” (Fraser 1996, Fraser et al, 2004). Although the focus in the global agriculture sector has been on the latter—redistribution of intra-household farm resources and on-farm decisions—the struggles for recognition and redistribution need to go hand in hand (Fraser et al, 2004). **Recognition** entails questioning the assumptions of who is a “farmer”—and rejecting the presumption that the “farmer” is the (white) male owner of the land and capital. It entails making visible and values the contributions of groups that have been invisible, such as female and Black farmers, migrant farm laborers, but it also means valuing the non-economic values that have been undervalued or associated with the feminine (including unpaid care labor; the true costs of unsustainable practices; and the societal benefits of cooperation, collective action, sustainability and interrelation over competition or individual achievement).

Representation addresses political marginalization of historically marginalized groups and the gender biases within institutions and structures that have served a particular type of farmer and make the policy decisions that incentivize particular systems. True cost accounting should reward measures taken to reduce discrimination (including sexual violence and unequal wages) that farmers may encounter on the farm and within the farmers’ associations and institutions designed to support them. **Redistribution** refers to equitable access to the suite of human, social, political, and financial resources that are currently concentrated to support



Source: Smaal et al. 2020

a particular, male-dominated, unsustainable, and industrial model of agriculture, determining who “gets” to farm and make decisions in agriculture policy and on-farm production decisions.

In the global discourse of gender and agriculture, women’s empowerment is a core construct for understanding progress toward gender equity. Many intra-household and farm-level empowerment frameworks, including the Women’s Empowerment in Agriculture Index (WEAI), build from Kabeer’s (1999) framework, which conceives of empowerment as the expansion of strategic life decisions, or “the ‘process by which an individual acquires the capacity for self-determination, that is, of living the life that she or he has reason to value’ (Galiè et al., 2017). The initial model sees resources (including human capital, social capital, and enabling institutional environments) as a precursor to agency (both collective and individual), which leads to achievements that challenge the status quo and represent strategic life choices (Kabeer, 1999). Kabeer emphasizes that not all life choices are equally strategic: what is considered “empowering” or disempowering must be defined within its context (Richardson, 2018). Moreover, empowerment is both a process and an outcome: some outcomes may be produced within a short time, while others are slower transformations, which can only be captured through process indicators. Ideally, measures of empowerment as a process would also capture dimensions of voice, aspiration, choice, and change over time (Kabeer 2011, Klugman 2016).

Current Models and Challenges with Gender Equity Survey Indicators

There are many different models that draw from some iteration of Kabeer’s 1999 framework, measuring some combination of resources (including human, social, and enabling institutional environments), and agency (both collective and individual). The Women’s Empowerment in Agriculture Index (WEAI) is one such model that was developed in 2012 by USAID, with technical support from IFPRI to ensure that Feed the Future (FTF) agriculture programs take into account gender and women’s empowerment in their design (Malapit et al, 2020). The WEAI draws from the methodologies of Alkire et al and the OPHI multidimensional poverty and

well-being index. It consists of two separate indices: the 5DE and the Gender Parity Index. The 5DE index assesses the degree to which women are empowered in the following five domains: Production, Resources, Income, Leadership, and Time. The Gender Parity Index is calculated separately, based on men’s and women’s responses (within the same household) to identical questions, and it is intended to reflect the percentage of women who are equally empowered as the men in their households. The A-WEAI score consists of a weighted average of the two sub-indices (5DE and GPI), which provide a single composite empowerment score for women in the population and illustrate the “empowerment gap” to be closed (Malapit et al, 2020).

The original WEAI was originally designed as a population-based survey, tested in six countries. To make this resource-intensive survey less time-consuming for respondents and more applicable to organizations, an abbreviated version (the A-WEAI) was developed, which reduces some of the key indicators in each of the five domains, bringing the response time down to an estimated 25-30 minutes per respondent. The user guide notes that individual domains and even indicators within domains can be lifted and integrated to a broader survey, although they would not yield the composite index score. The survey is intended to apply to a range of household configurations but assumes a heteronormative household, as the survey is asked to one “primary” and one “secondary” respondent (a male and female) from the same household. The guidance note also suggests oversampling for subpopulations of interest (for example, single-female households) (Malapit et al, 2020).

Abbreviated Women’s Empowerment in Agriculture Index (A-WEAI)	
Domains	Indicators
Production	Input in productive decisions
Resources	Ownership of assets Access to and decisions on credit
Income	Control over use of income
Leadership	Group membership
Time	Workload



The WEAI responded to a demand for a global, uniform, comparable approach to measuring improvement in gender issues in a sector that has historically had paid little attention to them. The five key domains correspond to evidence about the key gender “gaps” that are common across cultural contexts and different agriculture systems. For these reasons, the WEAI has been widely adapted, shortened, revised, and modified in multiple contexts and sub-sectors, including the Women’s Empowerment in Livestock Index, or WELI. In the process, these adaptations and revisions have generated many critiques and suggestions for improvement and adaptation (Colverson et al, 2020). Chief among these is that the WEAI tends to emphasize an individualistic model that measures gender in terms of intra-household and on-farm gaps in access to resources, inputs, services, and tends to view men’s and women’s production activities and decisions as separate and independent. This individual emphasis tends to set up the farm as a site of conflictual and separate interests—rather than a holistic system that relies on interdependence, complementarity, and cooperation in complex decisions (Farnworth et al 2019; Okali 2014; O’Laughlin, 2009). Underwood et al (2014), in their review of 12 different multidimensional measures of gender equality, propose that an approach that values interdependence rather than individualism might emphasize social capital and factors such as membership in groups working for community benefit, equity of leadership within such groups, and strength of ties beyond the farm and community (Underwood et al, 2014).

In addition, an empowerment index that is weighted to privilege women’s autonomy and self-efficacy neglects relational aspects of gender and the forms of collective agency that are necessary to transform and challenge institutional barriers and social biases (Farnworth et al, 2018). This does not mean that on-farm gender “gaps” should be overlooked, rather that gender needs to be understood as a dynamic that operates across multiple levels and relationships and manifests differently in particular contexts. Another key critique is that the WEAI concept of individual empowerment doesn’t capture the vital dimension of critical consciousness (or awareness of one’s rights, value, as well as of gendered structural inequalities); research into empowerment confirms that critical consciousness of structural inequity and of one’s internal



power is critical to the process of collective action that can bring structural change (Cornwall 2016, O'Hara and Clement 2018).

It should be noted that there are inherent tensions between the demand for global, comparable metrics and the complex, context-specific, and multidimensional nature of the concepts of gender equity and women's empowerment. Richardson sums up three common shortcomings in empowerment measurement: Failure to incorporate an explicit theory of empowerment into indicators; defining empowerment too narrowly; and using imprecise or biased analytical measures (Richardson, 2018). Global measures such as the WEAI indicators should be applied with caution, using qualitative processes to contextualize key gender power issues in on-farm, community, networks, and market processes. For quantitative measures, it is recommended to explicitly describe the conceptual model of empowerment processes, using context-specific, direct indicators of agency, collective action), rather than relying on proxies such as resources and assets, where possible. In multidimensional models, greater weight should be assigned to those factors and indicators that are most important in the theory of change. Analytic methods should minimize implicit judgments or assumptions. In particular, this means avoiding using fixed "cut-off" points to classify people as "empowered" or "disempowered", which carries implicit judgment. It also means taking care that the dimensions of empowerment are relevant and meaningful to the study participants (again using qualitative or participatory research). Methods should also collect comprehensive information, by talking with men as well as women, farm workers as well as farm owners; supplementing quantitative data with qualitative information; and measuring multiple dimensions and processes of empowerment (Richardson, 2018).

Qualitative methods (focus group discussions, in-depth interviews, vision diagrams, mapping exercises, problem trees) can be used to identify the underlying gender and social inequalities, as well as to lay out in subjective, localized terms the on-farm and community-based transformations that food producers would like to see, which would account for the true cost



costs and value of their labor. Methodologies that incorporate critical consciousness-building into the process of measurement, such as participatory household methodologies or the Gender Action Learning System (GALS), are readily adapted to a range of contexts and sectors, including agriculture and value-chain analyses. These participatory, community-based methodologies can engage farmers and farm workers in the process of reflection on gender and social inequalities in agriculture, which can in turn catalyse processes of collective action and transformation of gender inequalities (Galie et al, 2016).

Key indicators of gender equity to retain for True Cost Accounting

Building on the empowerment framework and guidance above, we set out multi-level and multidimensional domains to calculate the benefits of gender equality in on-farm practices. They are outlined in terms of resources, agency, and the equitable enabling environment to support achievements in gender equity. Resources can be conceived of as social capital (relationships, community, access to networks and services), building human capital (personal empowerment, knowledge, access to extension), as well as equality in financial capitals (access to credit, land, assets). Agency encapsulates individual critical consciousness and awareness, as well as collective actions, and community interrelations. As outlined above, we propose sample domains and illustrative questions, but we would strongly urge that specific indicators be developed through qualitative interviews with a diversity of respondents, before drafting and testing preliminary quantitative indicators. The table below illustrates a preliminary starting point for defining specific indicators of change.

GENDER EQUITY ACHIEVEMENTS

Recognition: Food producers and farmworkers of all genders and races are visible, valued, and recognized; care work valued

Redistribution: Equitable distribution of caregiving work, resources, profits

Representation: Representation of women, historically marginalized farmers and farmworkers in community structures, farmers networks, and markets

	Agency: (Process) ("Power within" / Power to)	Resources (Preconditions): Social, financial, and human capitals ("Power over" resources and "power to" use them)
Individual	<p>Recognition of oneself as farmer;</p> <p>Awareness of rights, services, and supports to marginalized farmers and farmworkers</p> <p>Control over time, bodily integrity, and movement;</p>	<p>Access to land title, capital, loans, extension, subsidies;</p> <p>Health insurance, sick leave, and adequate protections for farm workers;</p>
Intrahousehold / On-Farm	<p>Equal sharing of caregiving work and leisure time;</p> <p>Total value of care work hours;</p> <p>Free from violence;</p>	<p>Equitable decision-making processes over production decisions;</p> <p>Equitable distribution of farm profits;</p> <p>Living wages to farm workers;</p>
Community and market structures	<p>Meaningful participation in farmers' associations, networks, community groups;</p> <p>Collective actions taken in community or groups;</p>	<p>Group-based access to financial services, markets, networks, consumers, and information;</p>
Sample Questions	<p>Is your work as a farmer valued?</p> <p>Do you have someone to turn to if you have problems or concerns about discrimination?</p> <p>Do you have the ability to decide how and when to spend your time?</p> <p>How many hours of caregiving work per week?</p> <p>Who is primarily responsible for those tasks?</p> <p>Who on the farm has the time/interest to participate in which community activities and networks?</p> <p>What collective actions have farmers' groups taken that recognize or support marginalized farmers?</p>	<p>Who is listed on the land deeds, loan applications, equipment titles?</p> <p>Is external income necessary to support farming activities? Who earns that income?</p> <p>How are key decisions made about investments, farm practices, accessing resources, and reaching consumers?</p> <p>Do farm members and farmworkers have the rights and resources to protect their bodies and health?</p>

RACIAL EQUITY

While women constitute one in ten farmers across Canada and the USA, only two percent of farmers are not white (Horst & Marion, 2019). Only one quarter of all immigrant farmers in the United States are women and a majority are undocumented (Leslie et al., 2019). The intersections between gender and race on farms in Canada and the US are vast, but not exclusive. Racial and ethnic minorities see inequity along the worker hierarchy and questions of equity must investigate the racial inequities between non-operating landowners, operator-owners, tenants, and labourers. Of the two percent of total farmers who are Black, brown, Native American, and/or new immigrants, a significant number do not qualify for key federal support programs like the Conservation Reserve Program, lack access to tax savings mechanisms, and struggle under current food structures. Similar statistics lay to bare on the Canadian landscape, particularly for Indigenous people, who face systemic and individual racism within the agriculture system (Rotz, 2017). Appropriating valuing work in Canadian and American food industries racial and ethnic minority farmworkers and owners is vital to successfully developing a sustainable food system. Like non-point source pollution, structural racism is not just maintained by one member of the community; the global agri-food community and histories are responsible for its proliferation (Mintz, 1986). The lack of a single source to blame for structural racism allows for all farms to perpetuate and profit in its presence. incentivizing or punishing valuations of Black, Indigenous, and brown human and social outputs is possible just as incentives and punishments may be developed to mitigate environmental pollution from farms. This section seeks to outline qualitative methods to do so.

Racial and ethnic minority farmers and farm workers feel the negative impacts of this industrial food system to a much greater degree than white settler farmers/farm workers (Horst & Marion, 2019). This is true from land inheritance to wealth generation to access to markets. In an effort to stay competitive, among other reasons, farmers of colour and immigrant farmers are more likely to head small, diversified, or high-value product farms. This trend is similar for women farmers, as presented earlier in the report. Racial inequities are



rooted in a system of oppression and inequity and racist actors may produce and reproduce such inequities through interpersonal, institutional and structural racism. Interpersonal racism is the consistent barrage of negative stereotypes and messages developed by an ethnic or racial majority group in reference to a minority group. Institutional racism is the embedment of such messages and assumptions into social and economic systems, and structural racism is the cumulative impact of institutional and interpersonal racism felt by a minority group over time. All forms of racism may be overt and covert (Holt-Giménez & Harper, 2016).

In the United States, the majority of Mexican farm workers are undocumented, which leaves them vulnerable to exploitation and harassment. The consolidation of farms means an increased need for inexpensive, hired labour. In Canada, reviews of the Temporary Foreign Worker Program found that guest workers experience vastly different work conditions and exert greater effort than their domestic counterparts. Guest farm workers are more likely to work longer hours, at a lower wage and for more consecutive days than domestic workers who hold a similar job (Brochu et al., 2020). These findings demonstrate agriculture is international in scale and therefore, exploits inexpensive Black, Indigenous, and labour provided by people of colour as part of the production process.

A TCA on-farm sustainability tool must be built with systemic equity in mind, where racial and ethnic minority farmers and farmworkers are compensated for their efforts appropriately. Developing an on-farm sustainability tool that incentivizes small scale agriculture will indirectly support the deconsolidation of land masses (Horst & Marion, 2019) and encourage culturally-informed production methods (Minkoff-Zern, 2018). The vision for a new food system supported by a TCA tool will therefore also create a supportive environment for racial and ethnic minority farmers to be successful.

Conceptualizations of race equitable food production in North America

This section seeks to review popular and burgeoning academic concepts that analyze how a Canadian and American food system may be developed with racial equity in mind. From fair labour practices to Indigenous knowledge, there are many ways in which individual farms may take action to develop a more racially just farm and food system. As denoted by Horst & Marion (2019), there are four general classifications of farm ownership and labour. The classifications include non-operating landowner, operator-owner, tenant, and labourer.

At present, more than 90 percent of farmland is owned and operated by white Americans and people of colour represent 60 percent of farm labourers (Horst & Marion, 2019). The displacement of Indigenous peoples from their land hundreds of years ago, and today's migration of food producers follow similar tracks; one sparked by colonialism and the other the expansive and extractive nature of globalized markets and labour (Minkoff-Zern, 2018). Access to land, international markets, and capital is differentiated. An equitable distribution of both workers and owners across race and ethnicity is both difficult and necessary to create a fair and sustainable food system. Using a race equity lens in an on-farm sustainability tool is a powerful step in recognizing non-financial capital asset development. For example, research shows Black land ownership increases community well-being (social capital) and Black landowners felt a stronger sense of optimism (arguably human capital) compared to Black tenants (Gilbert et al., 2002). Latinx farmworkers turned farmers are highly motivated by 'self-direction' (Wells, 1996) and 'freedom' (Minkoff-Zern, 2018), a clear demonstration of rising human capital.

To ensure fair representation in food production ownership and labour, and in order to safeguard the equitable valuation of social and human capital assets, three actions are to be considered: transitioning farmland and operational ownership from the current white majority



to the over-representative pool of workers who are of racial and ethnic minority; second is to ensure the vitality and success of current farms owned and operated by people of colour; third is to incentivize new people of colour into the farming system. The first two aspects of representation can be partially accounted for using an on-farm sustainability tool such that specific survey questions are asked of racial and ethnic minority workers and operators. The third action item is best addressed using public policy (Minkoff-Zern & Sloat, 2017).

First, a racially equitable agriculture industry will incentivize farm labourers of colour to transition from labourer to ownership. Farm incubation programs have been successful in this effort, promising immigrants and refugees access to educational materials and business skills and addressing common barriers to entry such as access to equipment and capital (Calo & Master, 2016). Still, the most significant barrier is access to land. Along a parallel track, farmworkers who continue to work for an owner/operator must also be supported and provided with fair working standards. In the last two decades food system research has initiated focus on concepts of social justice in food systems, focusing largely on workers along the agriculture supply chain (Allen, 2008).

For workers who have not or cannot transition to ownership, academia provides evidence to show increases in human, natural, and social capital come when farmworkers are protected under labour legislation (Cohen & Hjalmarson, 2020). This may include wage security, fair complaint mechanisms, and access to education or training in native languages. In Canada, most racial and ethnic minority workers are introduced to the food production system through the Temporary Foreign Worker Program; a federal government initiative developed to fill the agriculture labour gap with non-citizen workers. While similar programs exist in the United States, in the American context many agricultural workers are undocumented. Precarious immigration status of workers adds downward pressure to financial and social resources, reducing the sustainability of the farm enterprise. Minkoff-Zern (2018) argues the race and the class-based experiences of racial and ethnic minority farmworkers and farmers transforms



their production methods and community connections. Research notes access to healthcare, education, and good housing for farmworkers increases worker output and human capital by breaking the cycle of poverty and illness, especially for Black workers (Sexsmith, 2017).

Second, racial and ethnic minority farmers who own and/or operate a farm should be supported in their effort to feed communities. Gilbert et al. (2001) reviews the effective survival strategies that may be employed by Black farmers to maintain land ownership and success on farms. The allocative efficiency, how best to use on-farm resources to generate a feasible income, notes farmers must diversify their land use in order to maintain viability. Diversifying income streams is a necessary practice especially for farmers of colour, which may include direct marketing to local consumers, offering hunting leases, and accessing federal government conservation and forestry programs. While conventional wisdom may persuade farmers to grow larger rather than more diversified, intersections between race, class mobility, and citizenships direct farmworkers and farmers of colour to small and diversified production methods (Minkoff-Zern, 2018). Survey questions about income streams and the financial sustainability of the farm should be asked of all farmers, but especially farmers of colour. In addition to income diversification, providing documents and programs in a farmer's native language is a necessary part of a farmer's long-term sustainability. There is a significant body of research that points to language barriers as a reason immigrant and Indigenous farmers do not seek or receive assistance from federal programs (Minkoff-Zern & Sloat, 2017), (Wells, 1996), (García-Pabón & Lucht, 2009). Without documents available in a native language, racial and ethnic minority farmers continue to feel isolated from, or unconscious of, available aid (Minkoff-Zern & Sloat, 2017).

Academic literature also states that a racially just, and therefore sustainable food system, must address Indigenous knowledge, understandings, and techniques for food production. Recent literature, sparked by conversations around a desire for economic independence and new land management opportunities, argues First Nations have a valuable role in Canadian food



production (Arcand et al., 2020), (Rotz, 2017). In the years after Canada was colonized and western agriculture methods were introduced, Indigenous farmers often outproduced their settler neighbours. Despite dozens of laws and regulations introduced to limit Indigenous peoples' production ability, they continue to grow food and commodities successfully. When asked today how Indigenous agriculture may be revitalized, centering Indigenous knowledge and traditional relationships to the land is action item number one. For farms not led by Indigenous people, this means supporting agriculture practices that sustain natural resources for generations to come. For an on-farm sustainability tool: valuing ecological goods and services produced by Indigenous and non-Indigenous farmers such as pollination and flood management. There are endless externalities and historical inequities that cannot be accounted for nor should be quantified at the farmgate but rather should be understood using public policy and community development initiatives. Significantly more research, especially that which interviews Native American, Indigenous, and immigrant producers, is needed to understand appropriate ways to compensate farmers through TCA for their socially and ethically produced and culturally appropriate foods.

While many systemic racial inequity concerns cannot be accounted for on the farm, some research argues farmers do have the opportunity and responsibility to produce social capital through community engagement. Advocates of Role-Driven Race Equity reform, for example, argue farmers have a responsibility to mitigate local food insecurity by selling produce to disparately impacted communities, or communities caught in a food desert (Washington & Williams Jr, 2019). Role-Driven Race Equity theorists call on all individuals embedded within a food system to act in anti-racist ways, to the best of their ability. The tool argues individual authority cannot transform system inequity but transformational change will only be enacted when a critical mass of individuals align actions and vision. The model includes race equity action along the supply chain but specific actions for the farmer include community development (social capital development in TCA terms) and when possible, donating or marking down the price of excess harvest to be distributed to marginalized communities.



The Equitable Food Initiative (EFI), a convention of global stakeholders brought together by OXFAM International, sets on-farm work standards for labourers that include non-discrimination standards and dispute settlement mechanisms (Scully-Russ & Boyle, 2018). While developing the framework, the organization came to a similar conceptualization of on-farm equity action as Washington & Williams Jr's (2019) Role-Driven Race Equity analysis: the conclusion must not be “that others needed to change before the conditions of the industry could improve.” We now move to analyzing current models and recommendations for an on-farm sustainability index.

Current Models and Recommendations for Survey Indicators

A study using the Equitable Food Initiative demonstrated when workers are provided with greater economic benefit connected to the farm's success and decision-making processes, workers develop greater self-confidence and community building skills, boosting social and human capital within and around the farm (Scully-Russ & Boyle, 2018). These programs may include training about on-farm discrimination and leadership for all employees, developing a culture of dignified work, creating time for informal learning opportunities and sharing Indigenous knowledge, and ensuring diverse representation in leadership positions. If the approach developed by the Equitable Food Initiative are applicable to a farm's structure, a sustainability index should evaluate the presence of such processes. We recommend four pillars for analyzing on farm sustainability through a racial equity lens that investigates 4 categories: Time accounting and wage, opportunity and security, immigration status, and language and culture. Survey questions should be built for each of these categories, allowing for perspective from each classification of worker/owner reviewed in the previous section.

Time, as argued by Meadows (1998), is the most valuable resource any human has and how they spend it, or how much agency they have in managing their time, is often an indicator of their



wellbeing. Time accounting in relation to racial category may be a powerful indicator of on-farm structural inequity. In a report outlining working conditions in New York dairies, workers (mostly undocumented) work about 12 hours per day with few breaks. Foreign farmworkers often report leaving the farm premises less than once per week and feel limited freedom to move or associate with their community (Fox et al., 2017). The estimated living wage in the United States is \$16.54 per hour (Nadeau, 2020) and in Canada it's between \$14 and \$23 per hour (Living Wage Canada, 2019). In the American fruit and vegetable harvest sectors, employees are usually paid using a piece-rate wage structure, where the volume of harvest is directly related to the wage earnings (White-Means, 1987). In other industries, an hourly wage contract is used (Cohen & Hjalmarson, 2020). A sustainability index should assess the disparity between local living wages and current agricultural worker wages. In addition, survey should include time/task accounting for all staff. Accounting for time presents a macro-level understanding of task distribution and realizes potential worker opportunity and security, or lack thereof.

Opportunity and security, the recommended second indicators are defined through a series of quantitative and qualitative metrics that assess a worker's support from the farm structure and autonomy within it. Across Canada and the United States, farm labour legislation is weak and often ignored by owners and operators (Brochu et al., 2020). Sustainability on the farm will require more support for workers than the law provides. Survey questions should be asked about farmworkers' access to equity stakes in the farm corporation or farm workers' ability to transition to landowner or operator. Security of person is also relevant to human and social capital development. Fox et al. (2017) notes nearly one in two surveyed farmworkers in New York dairy facilities experiences discrimination at work and preliminary research finds 80 percent of women farmworkers experience sexual harassment. Questions about exposure to sexual and physical violence, and how workers are protected is important. This may include inquiries into the efficacy of complaint mechanisms.



Of course, a worker's opportunities and security are contingent on their visa status or structure of the seasonal work contract. This is the foundation of the third indicator: immigration status. A farm sustainability index should value the structure of the contracts or visas. If farms sponsor seasonal workers or hire undocumented workers, supports beyond legal obligations must be reflected in work sponsorship packages. In addition, as described in the previous section, access to native language is necessary in ensuring workers understand their rights. The index should inquire if all farm documents, safety protocols, and employment contracts are available in the employees' native tongue. This leads to the final indicator: language and culture.

An estimated 78 percent of American farmworkers are foreign born and 70 percent do not speak any English (Minkoff-Zern & Sloat, 2017). Language is more than a communication device; it shapes worldview and perspective and can foster both social and human capital. An on-farm sustainability tool analyzing racial equity may ask questions like the following:

RACIAL EQUITY ACHIEVEMENTS

Ownership: Transition worker to tenant to owner, growing social and human capital.

Opportunity: Secure work environment, leadership prospects, safe immigration.

Openness: Free to use language, knowledge, and culture that may create better outcomes for farm and workers.

	Non-operating landowners	Owner / Operator	Tenant	Farmworker
Time Accounting and Wage	Time accounting in relation to farm work; time poverty	Time accounting in relation to farm work; time poverty	Time accounting in relation to farm work; time poverty	Time accounting in relation to farm work; time poverty
Opportunity and Security		Adequate Healthcare	Long term lease contracts; opportunity to purchase assets; healthcare	Unionization and arbitration; leadership; healthcare; violence
Immigration Status			Rent or own restrictions	Legal supports; contract structure
Language and Culture		Integration of cultural practices; diversity training	Diversity training	Language and food offered on-farm
Sample Questions	Is there opportunity for tenants/ farm workers to purchase land they operate on?	Do you rely on volunteers? Do workers have access to a complaint and arbitration mechanism? Can workers employ Indigenous or cultural practices on the farm?	Are revenues enough to sustain all workers? Do you believe you have the opportunity to purchase the land you are leasing? Can workers employ Indigenous or cultural practices on the farm?	Are labourers paid at least the regional living wage? Do workers have the freedom to unionize? Do workers have the opportunity to move upwards into a leadership position? Do workers have healthcare and paid sick leave? Are there policies in place to prevent workplace sexual or physical violence?

SURVEY

In 2021 Sustainable Food Trust released an eleven-indicator Global Farm Metric that measures whole-farm sustainability, from water and soil to animal husbandry and productivity. This report seeks to outline a more inclusive approach to two of the eleven indicators: human and social capital. The Global Farm Metric assesses sustainability through a series of surveys so, with the framework developed in the first half of the report, this portion of the report reviews a new gender and racial equity survey.

Methodology

We developed the gender and racial equity survey based on a “theory of change.” That is, the survey questions are based on our literature review, and the findings will help guide agriculture towards a more inclusive future for women and racial and ethnic minorities. Each question digs deep into the experiences of women and racialized people on farms, so that Sustainable Food Trust may offer tangible changes to farmers who seek to improve their gender and racial equity score. Through the literature review, broad frameworks for gender and racial equity were developed. For gender equity, the framing is based on recognition, redistribution, and representation, while for racial equity the framing is based on ownership, opportunity, and openness. These frameworks have been further articulated as preliminary indicators of change in the Gender and Racial Equity Achievement tables (page 18 and 26, respectively).

Survey question development was an iterative process informed by the Achievement tables. Numerous question types were used in the survey, including multiple-choice, text entry, and matrix tables with Likert-scale response options. The Qualtrics online survey platform was used to create an electronic survey tool that was accessible with a computer, tablet, or smartphone.



After writing a first draft of the survey, we piloted the questionnaire with 18 participants: 4 farmers, 9 farmworkers, 1 employer, 1 tenant, and 3 mixed-role respondents. A potential respondent contact list was generated based on expert recommendations and research team contacts. Given the origin of these contacts, we ensured that the pilot study group of respondents was not composed of farmers who are known to regularly participate in academic research, thereby avoiding selection bias.

Following the completion of the pilot questionnaire, the 18 respondents were interviewed to gather information about the survey tool. Using a semi-structured interview guide, the respondents were asked to provide feedback on whether they experienced any challenges navigating the survey, if any questions were unclear or difficult to understand, and if they had any suggestions for questions to add, among other topics. This feedback provided valuable insight. Along with comments and suggestions from subject experts and SFT advisors, the respondent feedback directly informed the questionnaire revisions.

Results

Generally, piloting a questionnaire can help survey designers identify unforeseen problems (with wording, format, etc.), increase the internal validity of the questionnaire, avoid collecting irrelevant or redundant data, and ensure the right data—in both content and form—are collected. As such, formal statistical analyses of the small dataset are not typically appropriate. Key findings or a theoretical basis from the literature were developed, followed by the initial survey questions, then the revised questions (post-pilot). Demographic data from the pilot survey is presented below.

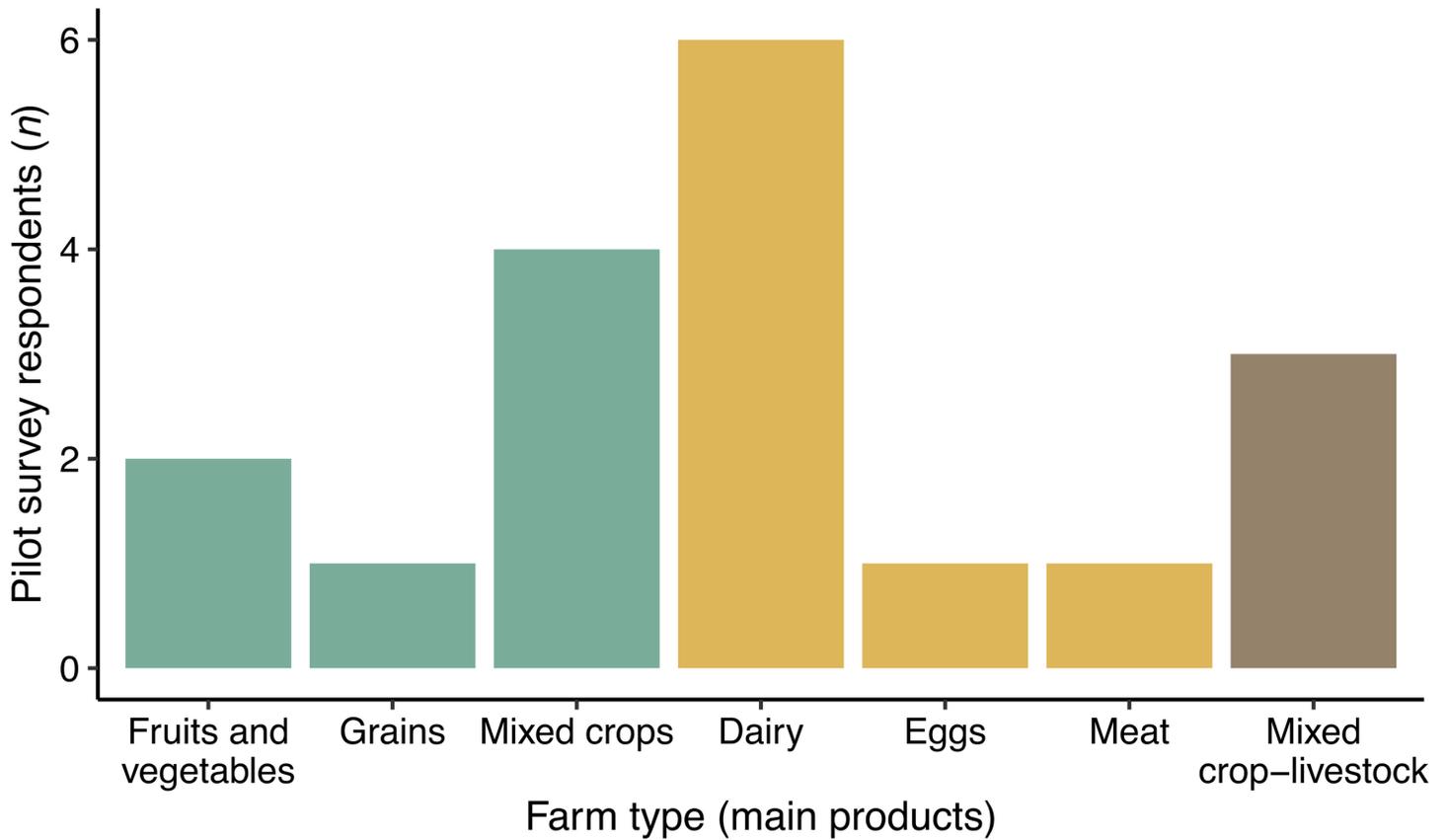


Figure 1. A visual representation of the farm type each survey respondent works on. Many farmworkers are hired on dairy and fruit and vegetable farms, hence the over-representation of both farm types. Mixed-crop farms are very common in North America.

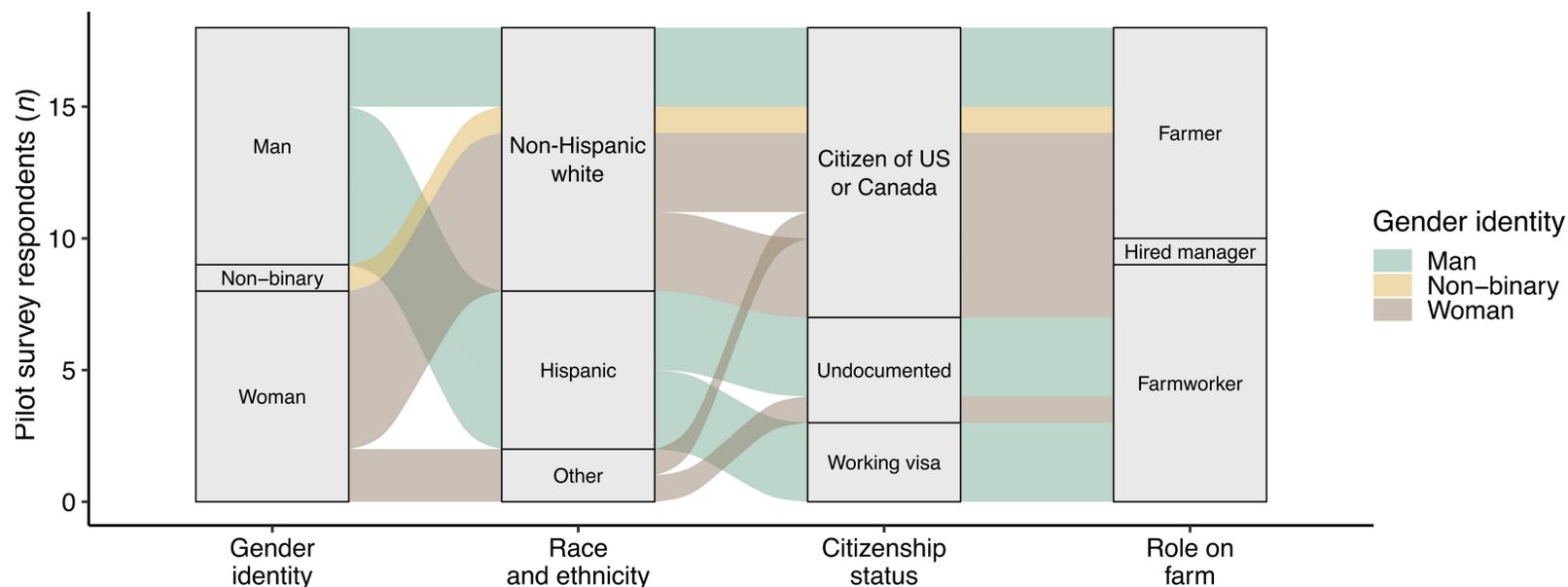


Figure 2. A visual representation of the relationship between gender identity, racial and ethnic identity, citizenship status, and role on the farm. There are clear relationships between the power of one's role and social identifiers.

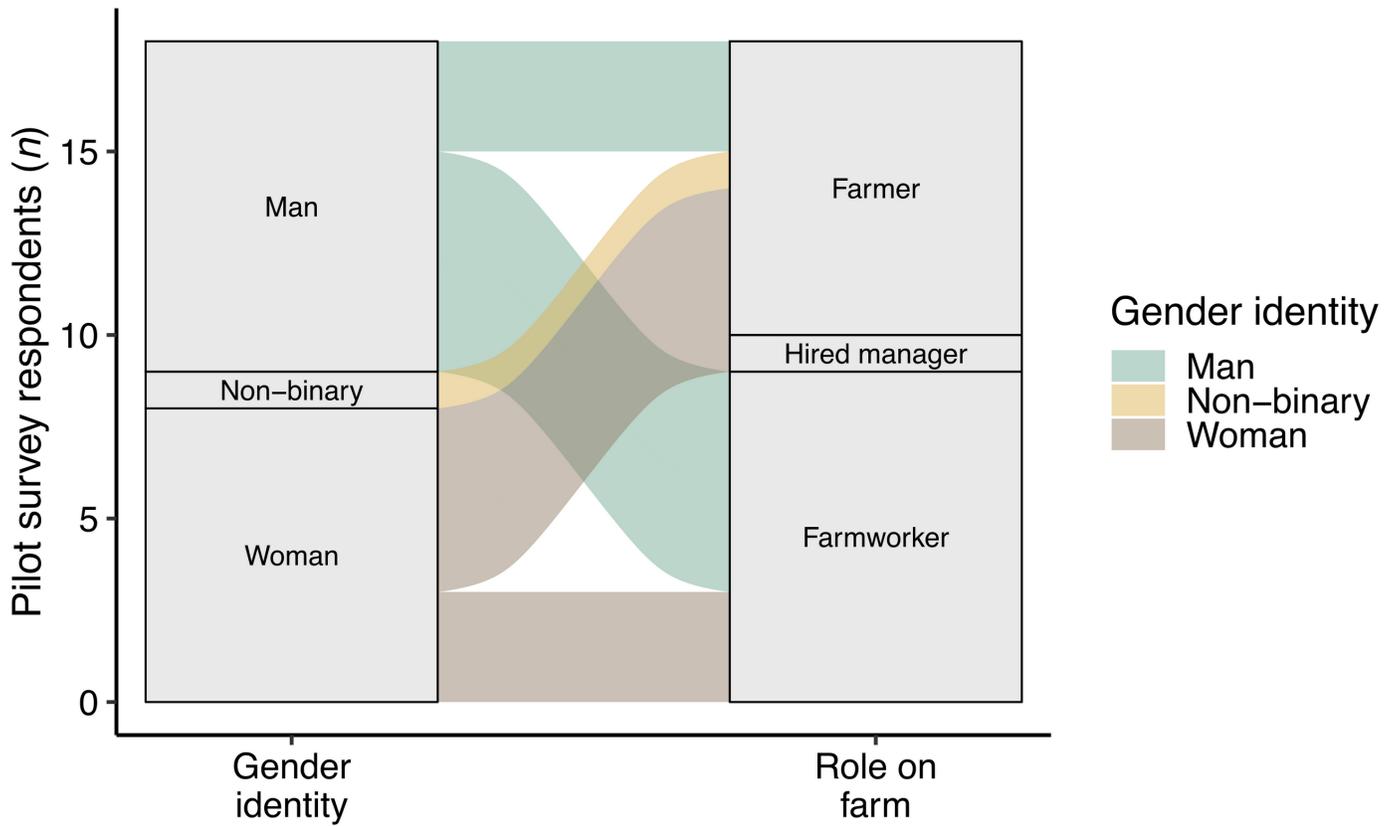


Figure 3. A visual representation of the relationship between the gender identity of respondents and their role on the farm. Equal opportunity was given to each role and each gender.

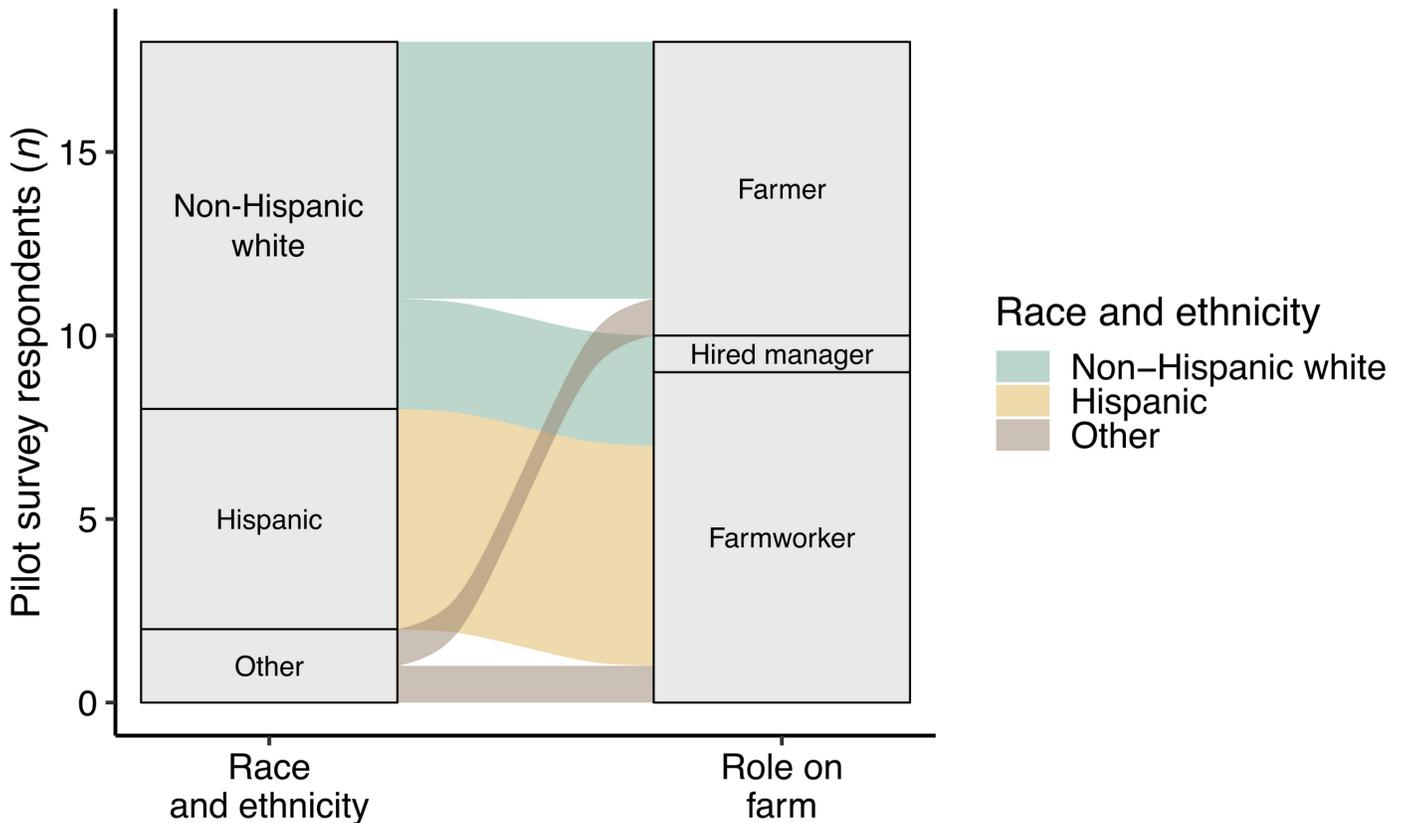


Figure 4. A visual representation of the relationship between race and ethnicity, and the role on the farm. More than 60 percent of farmworkers are people of colour and the majority of farmers in Canada and the United States are non-Hispanic white. This representation is reflected in the pilot survey results.

Farming and Social Relations Survey

Survey Flow

Block: Intro

Block: Identity (15 Questions)

Branch: New Branch

If

If Which of these terms best describes your role on the farm? Farmer (I am involved in day-to-day farm tasks and I'm compensated for production, such as grains or vegetables grown and sold) Is Selected

Block: Farmer questions (11 Questions)

Branch: New Branch

If

If Do you hire any permanent or seasonal employees (e.g., field workers or administrative staff) to... Yes Is Selected

Block: Employer questions (8 Questions)

Branch: New Branch

If

If Which of these terms best describes your role on the farm? Hired farmworker (I receive compensation for carrying out on-farm work) Is Selected

Block: Farmworker/employee (hired worker) questions (10 Questions)

Branch: New Branch

If

If Which of these terms best describes your role on the farm? Landowner (I am not involved in day-to-day farming activities; I own land that is farmed by those I rent it to) Is Selected

Or Do you own or lease the land you farm? Own Is Selected

Or Do you own or lease the land you farm? Own and lease/rent Is Selected

Block: Landowner questions (3 Questions)

Branch: New Branch

If

If Do you own or lease the land you farm? Lease/rent Is Selected

Or Do you own or lease the land you farm? Own and lease/rent Is Selected

Block: Tenant questions (4 Questions)

Start of Block: Intro

Thank you for taking part in our pilot survey about Farming and Social Relations.

This survey is part of a long-term project to explore ways we may make farms more equitable. This portion of the research analyzes how farmers, policymakers, and communities can understand social dynamics between members on the farm. This includes landowners, farmworkers, and farmers. Participation in this study will contribute to a deeper understanding of how we may better acknowledge and account for the social aspects of farming systems and change public policy to incentivize equitable relationships.

Today's survey is a pilot and we will reaching out to you for general feedback once you have completed the survey. The information you provide will remain completely confidential and will never be used in any way to identify you. Note that by taking part in this survey, you are indicating your consent to participate in this research.

This survey can be completed on a smartphone, desktop computer, laptop, or tablet. It should take less than 10 minutes to complete.

If you have any questions, please contact Louise Erskine (lme57@cornell.edu).

End of Block: Intro

Start of Block: Identity

1. What country is your farm located in? (If you have land in both countries, select the country in which the *majority* of your farm is located.)

Canada

United States

Display This Question:

If 1 = Canada

2a. What province is your farm located in? (If more than one province, select the province in which the majority of your farm is located.)

▼ Alberta ... Yukon

Display This Question:

If 1 = United States

2b. What state is your farm located in? (If more than one state, select the state in which the *majority* of your farm is located.)

▼ Alabama ... Wyoming

3. What does the farm produce? (select all that apply)

Meat

Eggs

Dairy

Grains and field crops (wheat, corn, soybean, cotton, etc.)

Fruits and/or vegetables

Herbs

Non-food products (flowers, wool, Christmas trees, etc.)

Other (please specify) _____

4. Which of these terms best describes your role on the farm?

- Landowner (I am not involved in day-to-day farming activities; I own land that is farmed by those I rent it to)
- Farmer (I am involved in day-to-day farm tasks and I'm compensated for production, such as grains or vegetables grown and sold)
- Hired farmworker (I receive compensation for carrying out on-farm work)

Display This Question:

If 4 = Farmer (I am involved in day-to-day farm tasks and I'm compensated for production, such as grains or vegetables grown and sold)

5. Do you hire any permanent or seasonal employees (e.g., field workers or administrative staff) to help you run the farm?

- Yes
- No

Display This Question:

If 4 = Farmer (I am involved in day-to-day farm tasks and I'm compensated for production, such as grains or vegetables grown and sold)

6. Do you own or lease the land you farm?

- Own
- Lease/rent
- Own and lease/rent

7. Please briefly describe your role on the farm (i.e., your main responsibilities, tasks, or priorities):

13. Are you a primary caregiver for any children?

Yes

No

Display This Question:

If 13 = Yes

14. How many children do you take care of?

▼ 1 ... 10

End of Block: Identity

Start of Block: Farmer questions

15. Who is listed on your land deeds, loan applications, or equipment titles? If it varies, whose name is on the *majority* of the documents? (select all that apply)

Me

My partner/spouse

A family member

Business partner

Friend or neighbour

A group (e.g., incorporated cooperative)

Other (please specify relationship) _____

16. I am involved with key decisions made about the following:

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
Farming practices	<input type="radio"/>					
Marketing	<input type="radio"/>					
Employees	<input type="radio"/>					
Farm goals, vision, and strategy	<input type="radio"/>					
Investments (e.g., purchasing land or retirement savings)	<input type="radio"/>					
Accessing financial resources (e.g., taking out a new loan or re-financing capital)	<input type="radio"/>					

17. I feel my level of involvement in key decisions is fair.

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
	<input type="radio"/>					

18. Is off-farm income necessary to finance your farming activities?

Yes

No

Display This Question:

If 18 = Yes

19. Who earns the off-farm income? (select all that apply)

Me

My partner/spouse

Another family member

Other (please specify) _____

20. To what degree do you agree or disagree with the following statements?

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
I have the ability to decide how I spend my day and when I complete tasks.	<input type="radio"/>					
My work is valued by others on the farm.	<input type="radio"/>					
I have time in my day or week to participate in community activities.	<input type="radio"/>					
I am the primary caregiver for my children.	<input type="radio"/>					
I have someone to turn to if I have problems or concerns about discrimination against me. If you agree, what is the nature of this relationship?	<input type="radio"/>					
I have someone to turn to if I have problems or concerns about discrimination against others	<input type="radio"/>					

on the farm.
If you agree,
what is the
nature of this
relationship?

21. Are the following workplace benefits adequately provided?

	Yes	No	Not applicable (do not receive)
Healthcare coverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Workplace accident coverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sick-leave	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parental leave	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Holiday time-off	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If 21 != Healthcare coverage [Yes]

Or 21 != Workplace accident coverage [Yes]

Or 21 != Sick-leave [Yes]

Or 21 != Parental leave [Yes]

Or 21 != Holiday time-off [Yes]

22. If you would like to, please briefly share the ways in which a workplace benefit has been inadequately provided or not provided at all.

23. For an average week, approximately how many hours per week do you spend on the following tasks? (Note that 24 hours x 7 days = 168 hours/week. The total can exceed 168 hours to accommodate multi-tasking.)

	Approximate number of hours spent on task per week
Childcare	
Meal preparation, cooking, grocery shopping, etc.	
Farm production tasks	
Farm management tasks (marketing, banking, customer service, etc.)	
Employee management	
Off-farm work (i.e., a second job)	
Professional development and networking	
Community activities not associated with children (e.g., my Wednesday evening Book Club)	

Display This Question:

If 24 [Yes] (Count) > 0

25. Please briefly describe your work on food security, gender-equity, or racial justice:

End of Block: Farmer questions

Start of Block: Employer questions

26. To what degree do you agree or disagree with the following statements about hired workers on the farm?

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
Farmworkers might eventually have the opportunity to lease or purchase land I operate on.	<input type="radio"/>					
Farmworkers have the opportunity to move upwards into a leadership position at the farm.	<input type="radio"/>					
Farmworkers have the opportunity to obtain equity stakes in the farm business.	<input type="radio"/>					
Farmworkers receive wage increases. (Reasons may include hard work, newly acquired skills, time spent in the role, etc.)	<input type="radio"/>					
I rely on unpaid labour, such as volunteers or family members, to complete	<input type="radio"/>					

farming
tasks.

I encourage
farmworkers
to suggest
different or
new farming
techniques.



27. To what degree do you agree or disagree with the following statements about policies on the farm?

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable	Unsure
The farm has a workplace sexual violence policy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farmworkers know about and understand how to access this sexual violence policy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The farm has a workplace physical violence policy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farmworkers know about and understand how to access this physical violence policy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The farm has a formal process to hear, react, and act on employee complaints and concerns.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farmworkers know about and understand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

how to access the provincial, state, or federal human and worker rights complaint and dispute resolution mechanisms.

28. Please estimate the daily wage and time worked for your lowest- and highest-paid employees:

	Lowest-paid employee	Highest-paid employee
Average daily wage (based on hourly or piece-rate wages)		
Average number of hours worked per day		
Average number of days worked per week		
Average number of months worked per year		

31. To what degree do you agree or disagree with the following statements about farmworker benefits?

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
Farmworkers are offered adequate health insurance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farmworkers are offered adequate workplace accident coverage.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farmworkers are offered adequate paid sick-leave.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farmworkers are offered adequate paid parental leave (e.g., maternity or paternity leave).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Farmworkers are offered adequate paid time-off for holiday.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32. To what degree do you agree or disagree with the following statements about farmworker unionization?

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
Workers have discussed unionization with me or managers.	<input type="radio"/>					
Workers have the freedom to unionize.	<input type="radio"/>					

33. To what degree do you agree or disagree with the following statements about farmworker language and communication?

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
Workplace documentation, such as job contracts, are offered in the employees' native language.	<input type="radio"/>					
Safety and training protocols are offered in the employees' native language.	<input type="radio"/>					
Managers can communicate with workers in the employees' native language.	<input type="radio"/>					

End of Block: Employer questions

Start of Block: Farmworker/employee (hired worker) questions

34. For an average week, approximately how many hours per week do you spend on the following tasks? (Note that 24 hours x 7 days = 168 hours/week. The total can exceed 168 hours to accommodate multi-tasking.)

	Approximate number of hours spent on task per week
Childcare	
Meal preparation, cooking, grocery shopping, etc.	
Farm production tasks	
Farm management tasks (marketing, banking, customer service, etc.)	
Off-farm work (i.e., a second job)	
Professional development and networking	
Community activities not associated with children (e.g., my Wednesday evening Book Club)	
Community activities associated with children (e.g., my daughter's soccer games)	

35. To what degree do you agree or disagree with the following statements?

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
My work is valued by others on the farm.	<input type="radio"/>					
I am offered adequate health insurance.	<input type="radio"/>					
I am offered adequate workplace accident coverage.	<input type="radio"/>					
I am offered adequate paid sick-leave.	<input type="radio"/>					
I am offered adequate paid parental leave (e.g., maternity or paternity leave).	<input type="radio"/>					
I am offered adequate paid time off for holidays	<input type="radio"/>					
If provided, my employer offers me adequate housing.	<input type="radio"/>					
I receive wage increases.	<input type="radio"/>					
Reasons may include hard work, newly acquired	<input type="radio"/>					

skills, or
time spent in
my role.

36. To what degree do you agree or disagree with the following statements about unionization?

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
I feel able to discuss unionization with my employer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have the freedom to unionize.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

37. To what degree do you agree or disagree with the following statements about language and communication?

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
Workplace documentations, such as job contracts, are offered in a language I am comfortable with.	<input type="radio"/>					
Safety and training protocols are offered in a language I am comfortable with.	<input type="radio"/>					
Managers can communicate with me in a language I am comfortable with.	<input type="radio"/>					

38. Racial discrimination involves treating someone unfavourably because they are of a certain race or because of personal characteristics associated with race (such as hair texture, skin colour, or certain facial features).

Gender discrimination involves treating someone unfairly because of their gender or sex. This may include physical or emotional harassment based on one's gender or perceived abilities.

To what degree do you agree or disagree with the following statements about safety and discrimination on the farm?

Display This Choice:
 If 11 = Working visa
 Or 11 = Undocumented
 Or 11 = Green card

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable	Unsure
If I have concerns about workplace safety, they are addressed appropriately.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Discrimination on the farm I work at is rare.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have someone to turn to about problems or concerns about discrimination against me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have someone to turn to about problems or concerns about discrimination against others on the farm. If you agree, what is the	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

nature of this relationship?

Display This Choice:

If 11 = Working visa

Or 11 = Undocumented

Or 11 = Green card

I feel I can trust my employer to protect and advocate for my immigration needs.

39. To what degree do you agree or disagree with the following statements?

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
I feel comfortable suggesting farm production practices or management ideas, and my opinion is respected.	<input type="radio"/>					
The changes or ideas I suggest are regularly implemented.	<input type="radio"/>					

40. How are you paid for your work on the farm?

- Hourly wage
- I am paid a piece-rate (e.g., by volume of produce picked) or by another metric

Display This Question:

If 40 = Hourly wage

41a. Approximately, what is your hourly wage?

Display This Question:

If 40 = I am paid a piece-rate (e.g., by volume of produce picked) or by another metric

41b. Please describe how you are paid and at what rate.

42. I think that everyone on the farm does their fair share of work and is compensated fairly based on their contribution.

	Strongly disagree (1)	(2)	(3)	(4)	Strongly agree (5)	Not applicable
	<input type="radio"/>					

End of Block: Farmworker/employee (hired worker) questions

Start of Block: Landowner questions

43. Do you lease any of the land you own?

Yes

No

Display This Question:

If 43 = Yes

44. How many years do you typically lease land to your tenant(s) for on average? (If it varies by tenant, select the lease length that represents the majority of the land you lease)

▼ 1 ... 20 or more

45. If you have one, what is your land-succession plan? (select all that you are considering)

I haven't considered it yet

Gift to a family member

Sell to a family member

Donate to a land trust

Sell to a current farmer-tenant

Sell on the market

Other (please specify) _____

End of Block: Landowner questions

Start of Block: Tenant questions

46. How many years are you typically able to lease land from your landlord(s) for on average? (If it varies by landlord, select the lease length that represents the *majority* of the land you lease)

▼ 1 ... 20 or more

47. I have the ability to negotiate the terms and conditions of the lease.

- Yes, all the time
 - Yes, some of the time
 - No
 - Prefer not to say
-

48. If, within the next ten years, you wanted to purchase the land you currently lease, would your landlord sell it to you?

- Yes, all of it
 - Yes, some of it
 - No
 - Unsure
 - I wouldn't want to buy any of it
-

Display This Question:
If 48 = I wouldn't want to buy any of it

49. Please describe why you would not want to purchase the land:

End of Block: Tenant questions

LIMITATIONS

Sustainable Food Trust is a leader in True Cost Accounting research in the food and agriculture industry. The work of analyzing and implementing TCA research is new, meaning there is much work to be done. This report seeks to fill in some of the many gaps waiting to be filled as TCA becomes more mainstream. There is limited depth to TCA literature and this report is the first of its kind; arguing gender equity and racial justice should be embedded in a farm's sustainability index. This means the work is breaking new ground and of course, is limited in scope. As you near the end of this report, know we recognize the limitations of this research and encourage others to investigate the following questions in the context of TCA.

Future iterations of the survey must be offered in French and Spanish alongside the English version. Many farmworkers in Canada and the United States are native Spanish speakers. Language should not be a barrier to complete the survey. In addition, farmworkers, especially those who have precarious immigration status, must be considered while delivering the survey. Employers control an employee's employment and visa status. Workers who are undocumented are especially vulnerable and often do not feel comfortable sharing any information with researchers or aid organizations about their work conditions. If any survey results are to be returned to a farmworker's employer, even in the form of recommendations for gender and racial equity, strong consideration must be given to anonymizing the data and results.

As is true for most of the other eleven sustainability categories, those who commit the most egregious acts against sustainability did not step up to complete our survey. Until the survey is incentivized or mandated by public policy, changes to gender and racial equity will be marginal and not structural. Structural and institutional sexism and racism will only be dismantled if the darkest spaces within, between, and around farms are illuminated.

CONCLUSION

True Cost Accounting in the agriculture and food industry is a forward-thinking, innovative way to understand what consumers, producers, and policy-makers value in the world around us. Sustainable Food Trust's Global Farm Metric includes eleven categories that measure on-farm sustainability and offer ways to highlight the hidden costs of producing food. From soil health to air quality, food production influences the world around us with limited accountability. And yet, the greatest impacts of all may be the most hidden from view: gender and racial inequity. Ideas and histories of gender, race and labour are central, not peripheral, to how farms are organized. So equity for women, migrant workers, and farmers of colour need to be at the core of a future that includes fair farming.

This report reviews the histories and origins of gender and racial inequity in North American agriculture; how structures and systems of power are embedded into food systems; the impacts such injustices have on food production and rural communities; and, what will happen if gender and racial equity goals are not highlighted or met. The report reviews current models for measuring gender and racial equity in agriculture systems and develops equity achievements based on academic literature. The theoretical framework motivated a pilot survey that we recommend is integrated into the Sustainable Food Trust Global Farm Metric. The survey was tested in-field in Canada and the United States with farmers, farmworkers, women, and ethnic and racial minorities. Feedback from participants and researchers reinforced the survey's practicality and user-friendly nature.

The Sustainable Food Trust is an industry leader in TCA. That means there are gaps to be filled in our understanding of a complex process and tool. This report highlights the necessity to focus on gender and racial equity within farm gates. This framework is a first step towards understanding the true value of work women and racialized people do to produce food. We encourage Sustainable Food Trust to continue investing in research that uncovers the costs of gender and racial inequity in our food system and the value of producing food justly.

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