Version 7: Dec 12, 2024

Informed Consent Form and Privacy Policy (Farm Owner and Farm Manager)

Welcome to LiteFarm!

We understand that your privacy and the protection of your data are important to you. We created this Informed Consent Form and Privacy Policy to help you understand how and when we collect, use and share your information, and to ensure we have your consent for doing so. Please keep in mind that you will need to consent to our collection and use of your data as described in this Informed Consent Form and Privacy Policy **for every farm that you are associated with via your account on the LiteFarm platform**. If you do not agree with our practices as outlined in this Informed Consent Form and Privacy Policy, you will not be able to use the LiteFarm platform.

What is LiteFarm?

LiteFarm is a participatory science research project hosted at the University of British Columbia to help improve access to digital agricultural technology for farming communities and develop better understanding of pathways towards sustainable agriculture. UBC works with farmer organizations to pilot and evaluate tools and knowledge to help farmers manage their farms in more profitable and environmentally and socially sustainable ways. The code underlying LiteFarm is free and open source (GPLv3) so that researchers, experts, and developers across the world can help to improve the services offered to the farming community. LiteFarm is a non-commercial entity.

Who is the LiteFarm team?

The LiteFarm team is a cross-disciplinary group of scientists, researchers, farmers, designers and software professionals. The team was initially formed at the University of British Columbia (UBC), and has grown to include a participatory global network of individuals and organizations. The Principal Investigators are Dr. Zia Mehrabi (University of Colorado) and Dr. Hannah Wittman (hannah.wittman@ubc.ca), as well as Dr. Sean Smukler, Director of the Centre for Sustainable Food Systems at UBC Farm.

Who funds LiteFarm?

LiteFarm is funded by the Centre for Sustainable Food Systems at UBC and other grants. For a complete list, please visit: https://ubcfarm.ubc.ca/csfs-research/litefarm/. Our external funders have no say in the operation and management of LiteFarm, and are unable to access any of the personal information housed on the platform. Our funding model is currently donor and grant-driven.

Why are we conducting this project?

We recognize gaps in farmer access to digital technology services, low adoption rates, and a need expressed by farmers to combine a range of agricultural data management services in a single, non-commercially driven platform. We want to develop a solution that both helps farmers operate their business in a more financially and ecologically sustainable way, and also helps advance the science of sustainability.

What data do we collect?

Depending on which parts of the LiteFarm platform you use, we may collect different kinds of information:

Personal Information

"Personal Information" describes any information that can be used to identify you or your workers. LiteFarm will never disclose personal information to third parties without your express consent. This includes:

- Contact information (name, address, phone number, email address)

- Demographic information (gender, year of birth, language preference, country, currency)

- Business information (farm name, farm address, farm coordinates)

- Photos

- Internet Protocol (IP) address

- Worker information (name, role on farm, email address)

- Geolocation (e.g., GPS coordinates of farm locations, location boundaries, etc.)

Farm Management Information

LiteFarm uses the management information that you enter into the app to generate insights about the financial, environmental, and social benefits or impacts of your management decisions. We anonymize this data to conduct non-commercial academic research on sustainable food systems. Because this data is anonymized when used in our research, it cannot be traced to you or your farm. This data includes:

- Farm location information: different types of locations on the farm, including size; names; crops planted in locations; organic status; and other attributes specific to location type

- Crop information: crop type, varietal, supplier, common names, species, genus, crop group, organic certification status and supporting information

- Crop management information: Including start and end dates; planting method; transplanting method; age of crop; tasks associated with the plan; estimated price of crops; estimated yield of crops, and others.

- Information about tasks performed on the farm: assignee, creator, duration, location(s), crop(s) impacted, inputs, notes, dates, completion status, etc.

- Pest control information: product name; amount of product applied; application target (i.e., pest or disease name), common name, scientific name, group; active ingredient name; active ingredient concentration; harvest interval; entry interval; type of control; location(s) and crop(s) targeted.

- Harvest information: field harvested; crop harvested; quantity harvested, uses of harvests.

- Seeding information: location(s) seeded; crop(s) seeded; spacing depth, length, width, and rate.

- Field work information: location(s), crops(s); type of work, notes.

- Soil information: location; depth; texture; percentage potassium, phosphorus, nitrogen, organic matter, organic carbon, inorganic carbon, total carbon, sulfur, calcium, magnesium, sodium, zinc, manganese, iron, copper, boron; cation exchange capacity (CEC); pH; bulk density.

- Sensor data such as soil water content and soil temperature that you, the farmer, route to the app through LiteFarm integration with third-party sensors.

- Irrigation information: location(s), crop(s); irrigation type, flow rate; total time flowing.

- Scouting information: location(s); crop(s); type; action needed (yes/no).

- Other information: location(s); crop(s); notes.

- Information relating to the completion of tasks including: date; duration of work; mood (happy, very happy, sad, very sad, neutral); notes on work.

- Expense information: date; type; name; expense amount.

- Sales information: date; name of buyer/market; crop; amount sold (kg); revenue.

- Worker details: number of registered workers; hourly pay; email address; role; name, etc.

- Farm specific details: preferred units (e.g. metric or imperial); currency; whether the farm is seeking certification; certifier; bed attributes; row attributes.

- Animal information: individual animal or batch of animal names, types, breeds, sex, brought-in or birth date and other identification details

- Animal movements information: location, reason for movement and date of movement

Usage Data

We collect usage data (i.e., general statistics about users, traffic patterns, and how users respond to various site features) to improve the quality of services we provide to you. This type of data includes: when you log in to LiteFarm, pages you request, how long you visit the site for, how you interact with the app, and technical details about your device (e.g., browser, screen type, and processor). This data will either be associated with your LiteFarm username (if you are logged into the app) or your IP address (if you are not logged in). We may use software such as Google Analytics to collect and analyze *usage data*, but in these cases, all personal information will be *anonymized*.

How do we use data?

There are three primary ways that we use your data:

- To improve the agricultural data visualization services we provide you with: As described above, we use your usage data (i.e., general information about how you interact with the LiteFarm platform) to improve the LiteFarm platform and the services it provides.

- To generate insights about the financial, environmental, and social benefits or impacts of your management decisions: The LiteFarm platform uses the management data that you enter into the app (see "Farm management information" section above for a full list), along with built-in algorithms and some public data (e.g., local weather station information, crop coefficients, crop and fertilizer nutrient content, species occurrence data, and topographic data) to generate insights about financial, environmental, and social benefits/impacts of your management decisions.

- To conduct non-commercial academic research on sustainable food systems: Along with our academic collaborators, we will use your anonymized farm management data (see "Farm management information" section above for a full list) to conduct agronomic, ecological, and food-systems based academic research. Some of this research will be conducted by students as part of their graduate and undergraduate degrees.

We will rigorously evaluate every project proposal to ensure that your data is used effectively to advance knowledge on sustainable food systems, help farmers make sustainable management decisions, and impact public policy to benefit farmers. We will keep you in the loop on research projects through email (unless you would prefer to opt out), and you can always reach out to us to learn more about the research that your data is helping to make possible.

What do we share?

We will only share your data with third parties if it is both anonymized (i.e., contains no personal information) and necessary to accomplish our research goals or validate scientific findings. Specifically, we may share anonymized data at some point in the future with other researchers for non-commercial academic research purposes. Any third-party academic researchers who request use of LiteFarm data will undergo internal review, and will be assessed under our existing ethics and security standards. Due to publishing standards for scientific reproducibility, anonymized data that is used for academic research may be served on public repositories. Copies of non-public releases of anonymized data can be shared with academic researchers for non-commercial research purposes, under time-limited and confidential single-use licenses. If an academic research use includes the use of photos uploaded to LiteFarm, any identifiable features that disclose personal information (e.g., faces of people) will be blurred out of the photos before they are shared.

We do not share any *personal information* to third party analytics services, such as Google Analytics. Through our security protocols, we safeguard the vulnerability of personal information within the LiteFarm website, and we use IP anonymization protocols to prevent identification and geolocation by third parties.

How we use cookies?

In some areas of our site, a cookie might be placed on your computer or device. A cookie is a small file that resides on your computer or device's hard drive that allows us to improve the quality of your visit to our websites by responding to you as an individual. We use cookies to identify which pages are being used and improve our website. we only use this information for statistical analysis purposes, they are not shared with other sites and are not used for advertisements. You can choose to accept or decline cookies. Most web browsers automatically accept cookies, but you can usually modify your browser setting to decline cookies if you prefer. However, if you choose to decline cookies from the LiteFarm then functionality, including your ability to log-in and use the application, may be impaired. Acceptance of cookies is implied if you continue to access our website without adjusting your browser settings.

Where do we store your data?

Our application is hosted on Digital Ocean to quickly and reliably serve our website to an unpredictable number of people. This means that your data will potentially be stored in multiple data centers and locations within Canada and the United States of America (USA). While our application is non-commercial, we note that Digital Ocean is a participant in the Privacy Shield program developed by the USA Department of Commerce and the European Union (EU) and offers services for EU General Data Protection Regulation (GDPR) compliance. In addition to our cloud storage a local copy of the LiteFarm database is housed on an encrypted and password protected server at the University of British Columbia. Anonymized

copies of the LiteFarm database can be stored on public repositories following publishing standards for scientific reproducibility.

Farmers participating in a certification network may choose to export data they have inserted into LiteFarm into a downloadable report that they can share with an external party (e.g., an agricultural certifier). Some certifiers may independently request additional questions from the farmer related to their certification process, which farmers may optionally choose to respond to as part of their certification download within the LiteFarm application. In order to facilitate the integration of questions from independent certifiers, LiteFarm contains an integration with SurveyStack, an open-source and open-access survey questionnaire platform. By agreeing to this privacy policy, you are not required to make use of the SurveyStack integration. This is an optional feature to facilitate the certification process between your farm and your certifier.

Data entered via the SurveyStack integration is stored on SurveyStack's infrastructure using MongoDB on Amazon Web Services (AWS) via the MongoDB Cloud Atlas service. SurveyStack aims to create an open data ecosystem. Therefore, all submission data on the platform is public by default, except for data associated to survey fields marked as private, which are only accessible by the person completing the survey and the creator of the survey (e.g., a certifier). Certifiers are encouraged to make their surveys private but the LiteFarm team has no control over whether they do.

How do we protect your data?

We follow industry best practices to secure user data, and we have built and continue to maintain the LiteFarm application in line with Open Web Application Security Project's Annotated Application Security Verification Standard Level 2. Access to the LiteFarm database is limited to members of the LiteFarm team who have undergone ethics training (Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, TCPS2), and have signed confidentiality agreements. However, we cannot guarantee that data transmitted over the internet will always be secure. As a result, though we strive to protect your personal information, we cannot ensure the security of any information you transmit while using LiteFarm.

What other potential risks are involved with using LiteFarm?

While we have made every reasonable effort to ensure our application is secure and provides as accurate as possible information to assist you in managing your farm, we recognize that usage of the LiteFarm carries risks to you and your farming operation, and may contain errors, or inaccuracies of content, and security risks. The risks associated with these include potential loss of production, revenue or profit, inability to use, interruption or delay of services, loss, damage, corruption or recovery of data, or breach of data or system security, which may result from using the LiteFarm application. We do not accept liability for these risks. If you have any concern and are not able to consent to the possibility of these arising please do not sign the consent form at the end of this page or register to use this product. In the cases of known impending risks (such as known dates of loss of services) we will make every effort to

forewarn you as a user so you can take necessary precautions to mitigate the risk (e.g. to back-up your data).

How long will we retain your data?

We aim to retain your data indefinitely in the interests of scientific reproducibility, but for a minimum of 5 years.

What are your rights with respect to your personal information?

You have the right to know what data we have about you, request a copy of it, update and correct your data, request that we stop collecting your data, request a transfer of your data, or ask questions about any analyses using your data. For any such information or requests, contact litefarm.team@ubc.ca.

Your usage of LiteFarm is entirely voluntary. If you decide to use LiteFarm, you may choose to inactivate your account at any time without giving a reason, and without any further action by the researcher. If you wish to remove all of your data from the LiteFarm database, you may do so by emailing litefarm.team@ubc.ca with your request.

What happens if you withdraw consent?

If you withdraw your consent by emailing litefarm.team@ubc.ca, your account(s) on the LiteFarm platform will be marked as inactive and you will not be able to use the LiteFarm platform. However, your information will not be deleted in the case you would like to return at a later time. You can request that your data be permanently and irrevocably deleted by sending a request to litefarm.team@ubc.ca If you plan to withdraw consent, and would like a copy of your data please request that when you withdraw your consent.

How do we make changes to the Privacy Policy?

Although most changes are likely to be minor, LiteFarm may occasionally change its Privacy Policy. We will post an updated and revised version of the Privacy Policy on the LiteFarm website (www.litefarm.org) and notify you via the application when we make any changes. You will be required to accept the new consent form to continue using the software. If you do not accept changes, you will be able to download your data but will not be able to enter any new data into the app. The revisions are effective immediately upon posting. Your continued use of this site after any change in this Privacy Policy will constitute your acceptance of such change.

When will we contact you?

If you create a LiteFarm account, we will occasionally send email to announce new features in LiteFarm, explain any changes to the app, invite you to special events, or tell you about research projects that LiteFarm data is helping make possible. We might also email you occasionally to ask for your feedback about the platform or website. Your participation in any such request is entirely optional and will not affect your use of the platform.

Licensing

At this time, the LiteFarm application is free to use. The software itself is licenced under the GNU Public Licence v3, which is a free and open-source licence (https://www.gnu.org/licenses/quick-guide-gplv3.en.html)

For further information

With respect to the application, please contact:

Product Manager: litefarm.team@ubc.ca

With respect to this study, please contact the principal investigator:

Principal Investigator: Dr. Hannah Wittman (hannah.wittman@ubc.ca)

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study

Contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Consent

By pressing Agree below, it indicates that you have downloaded a copy of this consent form and Privacy Policy for your own records and that you consent to participate in this study.

UBC Study ethics ID: H19-01482