



GUIDE FOR APPLICANTS

**OPEN CALL FOR
FARMERS AND AGRONOMISTS**

1 Key aspects

- Open call announcement: April 6th 2020
- **Deadline: Applications accepted until August 31st 2020**
- Notification of evaluation outcomes: 15 days after application submission (no need to wait until the deadline)
- Language in which proposals should be submitted: English
- Web address for further information: <https://fields4ever.biomeakers.com>
- Email address for further information: fields4ever@biomeakers.com



2 Introduction/Background

Fields4ever is a global initiative powered by Biome Makers for the conservation and monitoring of soil health by promoting the development of more sustainable and respectful agriculture management.

Improving the soil health of agricultural lands holds the potential for achieving meaningful conservation and economic benefits, as well as mitigating the growing threat of climate change. Indeed, unhealthy soil is becoming a worldwide issue and the public is more aware of the key role that soil plays in supporting life. In order to move forward from theory to action, for providing a pragmatic and measurable approach, and to homogenize soil quality assessment, Biome Makers has developed soil health monitoring tools and metrics for the agriculture community worldwide.

To develop sustainable management systems that integrate soil health monitoring practices it is important to execute different actions in a coordinated fashion and to include relevant stakeholders involved in agriculture such as farmers, agro-input providers, technical support service operators and regulators.

Within this context, we plan to monitor up to 0.4M ha (1M acres) during the 18 months duration of the fields4ever initiative, to achieve the following goals:

- To unravel the soil health status of agriculture fields and to restore their health
- To sequester 0.5M metric tons of greenhouse gas emissions
- To reduce by 5M pounds the nutrients loss to the environment
- To save 1M metric tons from soil erosion

3 Fields4ever Open Call for farmers and Agronomists

Fields4ever **open call for Farmers and Agronomists** grants free of charge services from the fields4ever partners. In this specific call the beneficiaries will access to BeCrop® tests (<https://becrop.com/>), an advanced soil microbiome testing technology developed by Biome Makers. You will receive digital data coming from your soil samples including full microbial profiles (bacteria and fungal species) and functional soil data in the form of different agronomic indexes to support the assesment or implementation of soil health practices.

For the next 5 months period (04/06/2020 to 08/31/2020), fields4ever initiative will **grant up to 5,000 BeCrop® soil analysis** to private farmers and agronomists.

This global call is open to any productive companies involved in the primary sector, in any crop and any region with preference to European and African companies. We are going to pay special attention to farmers with limited resources and size located in development regions.

We are looking for experiements developed by farmers or agronomists aiming at:

- Explaining yield differences in soils under similar conditions.
- Applying bioactive products in my field: Monitoring my soil status.
- Measuring disease risks for more respectful soil management.
- My soil is unique and alive (differentiation/terroir/regionality).
- Boosting soil bioactivity (including carbon sequestration).
- Any other experiment related to Soil Health.

We want to help farmers and agronomist to assess their soil status and have open access to advance soil quality assessment tools easily.

4 Preparation, submission of the proposals

Proposals for selection are submitted in a single stage, by submitting a complete proposal application form, which is described in 'Annex I: Application Form' in this document.

Only online application is possible. To apply, submit your application form and send it through the website <http://fields4ever.biome makers.com>

The proposal must be in English to be eligible.

Farmers and agronomists can submit their applications during the open call period (from April 6th 2020 to August 31st at 17h00 Brussels time).

Biome Makers team will evaluate all the applications as they are received (no need to wait until the deadline) and will notify the result of the evaluation within 15 days after the application date.

Approved applications will have a maximum of 6 months to complete the testing after the awarding notification.

All information of whatever nature or form as is disclosed between the researcher and Biome Makers in connection with the evaluation process of the project will be consider confidential and will maganed as such.

Biome Makers will request that grantees communicate publicly the support received to the project and be highlighted as contributor in any publication or dissemination activity for the project.

Fields4ever Board reserves the right to modify the terms of this open call at any time without prior notice.

For any questions related to the open call, please contact fields4ever@biomemakers.com.

5 Proposal evaluation and selection

Biome Makers team, partner of fields4ever, will evaluate all the applications. Only the best applications will be awarded with functional soil testing in order to ensure the impact of fields4ever.

This open call is a continuous evaluation process. The evaluation process will start as soon as an application is received, and the results of the evaluation process will take a maximum of 15 days before the notification to the applicant. The notification will be by email.

The result of the evaluation process will determinate the number of samples granted to the applicant and it could be one of the following:

- Application granted with the requested number of BeCrop® tests;
- Application granted with a different number of BeCrop® tests;
- Application not granted.

The grant will exclusively include the BeCrop® analysis of soil samples exclusively.

6 Evaluation criteria

Each proposal will be evaluated according to the following evaluation criteria:

- **Applicant characteristics (20%):**
 - Target crop and extension.
 - Region.
 - Size.
- **Impact from the tests (40%):**
 - Goals pursued with the experiment.
 - Impact in soil health.
 - Farmer return.
- **fields4ever objectives match (20%)**

7 Open call awards

All eligible applicants qualified to benefit from fields4ever initiative will get a **grant in the form of advanced soil microbiome tests for agriculture**, called BeCrop® tests. These tests develop functional profiles of soil using the soil microbiome as bioindicator.

BeCrop® tests are a proprietary technology developed by Biome Makers combining Next-Generation DNA Sequencing to profile the whole expectrum of microbes and Artificial

Intelligence to process the DNA data and turn it into functional agronomic indexes of soil. This tests have been successfully commercialized in more than 20 countries, counting over 20,000 samples processed and over 300 clients in different crops, from corn to olive trees.

The grant comes in the form of free of charge soil samples sequencing and full access to the soil bioactivity and functionality through BeCrop® portal online platform and mobile app, including bioinformatic and statistical analysis.

Bioactivity analysis of the soil samples will be performed according to the standard BeCrop® protocols, comprising the analysis of both bacterial and fungal communities. Data processing includes the proprietary bioinformatic pipeline which will provide accurate taxonomic information of the species identified in the samples and complex computing algorithms to develop different agronomic indexes covering all the functional dimensions of the soil.

For each individual soil sample, Biome Makers will produce a BeCrop® report which contains results divided in three categories:

Biosustainability: Analysis of the microbial species diversity and metabolic functions present in the soil, and the vulnerability of the system based on estimation of the microbiome resistance. With this perspective, three indices will be analysed in this category:

- **Biodiversity:** Species richness and uniformity.
- **Functionality:** Capability of soil microbial communities to perform multiple functions.
- **Resistance:** Ability of the microbial communities to remain functional under disturbance.

Health: The role of microorganisms in plant health and yield defined by the balance between pathogens, biocontrol agents and other plant growth promoters. Herein, four indexes will be considered:

- **Healthiness status:** Crop health according to the detected pathogens.
- **Biocontrol:** Microbial species are grouped according to their capability of preventing pathogenic species from proliferating. Four groups are defined: fungicides, bactericides, insecticides, and nematocides.
- **Hormone production:** Microbial species are grouped according to the types of phytohormones they can produce. Three groups are defined: cytokine production, auxin production, and gibberellin production.
- **Stress adaptation:** Microbial species are grouped according to their ability to withstand stress conditions. Seven groups are defined: 1-aminocyclopropane-1-carboxylate deaminase, exopolysaccharide production, heavy metal solubilization, salt tolerance, siderophore production, salicylic acid, and abscisic acid.

Nutrition: Comprises the potential of soil microorganisms to metabolize nutrients and to increase the bioavailability of nutrients for plants. This section is divided into:

- **Major compounds:** including carbon, nitrogen (N), phosphorus (P) and potassium (K)
- **Minor compounds:** including sulfur, calcium, chlorine, magnesium, iron, manganese, zinc, and copper.



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8 Annex I: Application form

(*) **Compulsory fields**

Applicant information

Name and surname (*)

Email (*)	
Phone number (*)	(country) number

You are applying as (*): Farmer/Agronomist

Company name

Company size: -50 employees/50-100 employees/+100 employees

Address (*)

City	
Postal Code	
Country	

Experiment information

What do you want to achieve using functional soil tests? (*) (max. 50 words)

Write the questions that you'd like to answer with the experiment

Crop (*)	
Hectares/ acres (*)	
Country/region (*)	

Number of BeCrop® samples requested (*)

How this experiment is related to soil health (max. 100 words) (*)

How this experiment will impact your business? (max. 100 words) (*)

What is your dream? Not necessarily related to the application (max. 100 words) (*)

Declaration of honour (*)

- I declare that the applicant is fully eligible in accordance with the criteria set out in the open call.
- I declare that I have provided accurate, sincere and complete information within the context of this open call.
- I declare that I will carry out the work according to the provided information and help to achieve the goals and objectives of the fields4ever initiative.