Growing Together Research, Inc. ("GTR") is a biotech company located in Fort Wayne, Indiana, USA. GTR is focused on the sequencing and analysis of genomes of agriculturally and commercially important crops and the use of these insights to:

1. Inform selective breeding programs
2. Create organisms with customized and optimized trait profiles based on market demand using cutting edge gene editing techniques.

Currently GTR is engaging with Italian entities in Campania to focus on problems affecting the regional Italian agricultural industry, beginning with two major crops in Campania: *C. sativa* and Olive trees. GTR has already deployed its Gene Profiling Services across multiple organisms, providing deep insights into its clients 'cultivars. GTR also offers consulting services to its clients on how they can best utilize these insights; either by selective breeding programs or by contracting our advanced trait optimization services to precisely target traits of interest to produce an enhanced organism through lab-based gene editing.

With respect to *C. sativa*, we are working to realize the needs of Italian hemp farmers with respect to the creation of new varieties which include the first-of-its-kind THC-null variety of hemp (THC gene is permanently "turned off", resulting in all plants of this variety expressing 0.0% Δ9-THC) as well as investigating mold and pest resistance, modulation of plant height, and resolving issues in photoperiod dependency for lower latitudes. The negative consequences of growing hemp at lower latitudes, where the photoperiod difference between winter and spring/summer is less pronounced, are diminished yields and less vigorous plants when compared to hemp grown at higher latitudes.

Regarding Olive trees, GTR is engaging entities to collaborate on the development of new varieties of Olive which are resistant to the agricultural pathogen *Xylella fastidiosa*. It has been demonstrated that there are individual olive trees that have varying levels of resistance to this pathogen. GTR is working with Italian stakeholders to collaborate on the identification of these individuals and subsequently analyze their genomes, identify the resistance gene, and create new varieties which have both the inclusion and heightened expression of this gene. Once this has been performed on olives this can be reproduced across any relevant organisms: grape vines, citrus, almonds, and others.

The roadmap for implementation with regard to Olive resistance to *Xylella* would be the following:

1. GTR's Italian collaborators identify individuals from the Olive tree population which exhibit resistance to *X. fastidiosa*
2. GTR and their local partner extract and sequence genomic DNA and perform deep genome analysis with GTR's proprietary bioinformatics platform (Gene Profiling Services)
3. Gene(s) for *Xylella* resistance are identified through extensive analysis of bioinformatics outputs

4. Resistance gene constructs are created and organism transformation occurs in the laboratory
5. **Result: a stable olive tree variety which is resistant to *Xylella* and ready for the European market**

The roadmap for implementation with regard to *C. sativa* would be the following:

1. GTR will interface with Italian hemp producers to source a list of desirable traits for the Italian market.
2. GTR and collaborators will extract and sequence genomic DNA and perform deep genomic analysis with its proprietary bioinformatics platform (Gene Profiling Services)
3. Gene(s) for the desired traits will be identified through extensive analysis of bioinformatics outputs
4. Gene constructs of the desired traits are developed and organism transformation occurs in the laboratory
5. **Result: new hemp varieties with desired phenotypes released to Italian hemp producers**

Already in progress: THC-null phenotype is projected to be market-ready at the end of 2021, and available for Italian cultivation in 2022.