# DEVELOPING A UAS DATA HUB FOR THE WHEAT-COORDINATED AGRICULTURAL PROJECT

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## INTRODUCTION

According to the Food and Agriculture Organization (FAO), the United States is ranked among the top 5 largest wheat-producing countries in the world. In order to maintain its competitiveness in the global market, the USDA saw the need to increase the productivity of US wheat crop varieties. To do this, there is a need for various kinds of data, including the plant's physical characteristics, location-based datasets, plant genetics, etc. These data would help farmers and scientists make decisions on the variety of wheat that performs best in a specific location and under specific conditions. Growing this variety of wheat would therefore lead to better crop productivity.

## RESEARCH SIGNIFICANCE

This research would help to ensure increased production of wheat crop, highly improved traits of the grains by creating more varieties, and so on.

## STUDY AREA

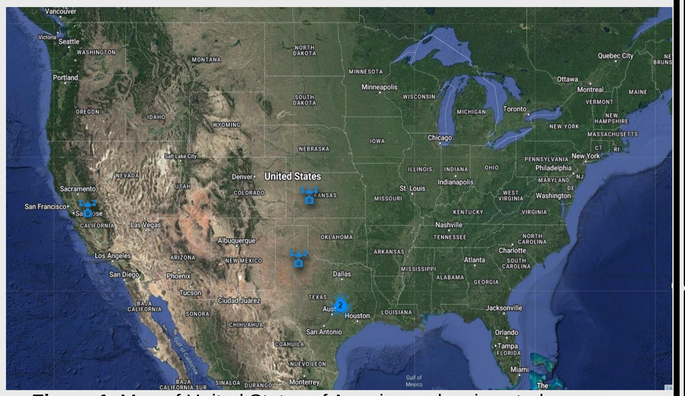

**Figure 1.** Map of United States of America - showing study areas

**Figure 2.** Data Acquisition with UAS

## METHODS AND MATERIALS

- Public wheat data repository – T3 Breedbase (https://wheat.triticeaetoolbox.org/ )
- Phenomics data – growth, performance, composition, etcetera
- Genomic data – traits, genes, genes variation, etcetera
- Unmanned Aerial System data collected by the participating Universities. The UAS carries various kinds of sensors such as Multispectral, RGB, Lidar, etcetera

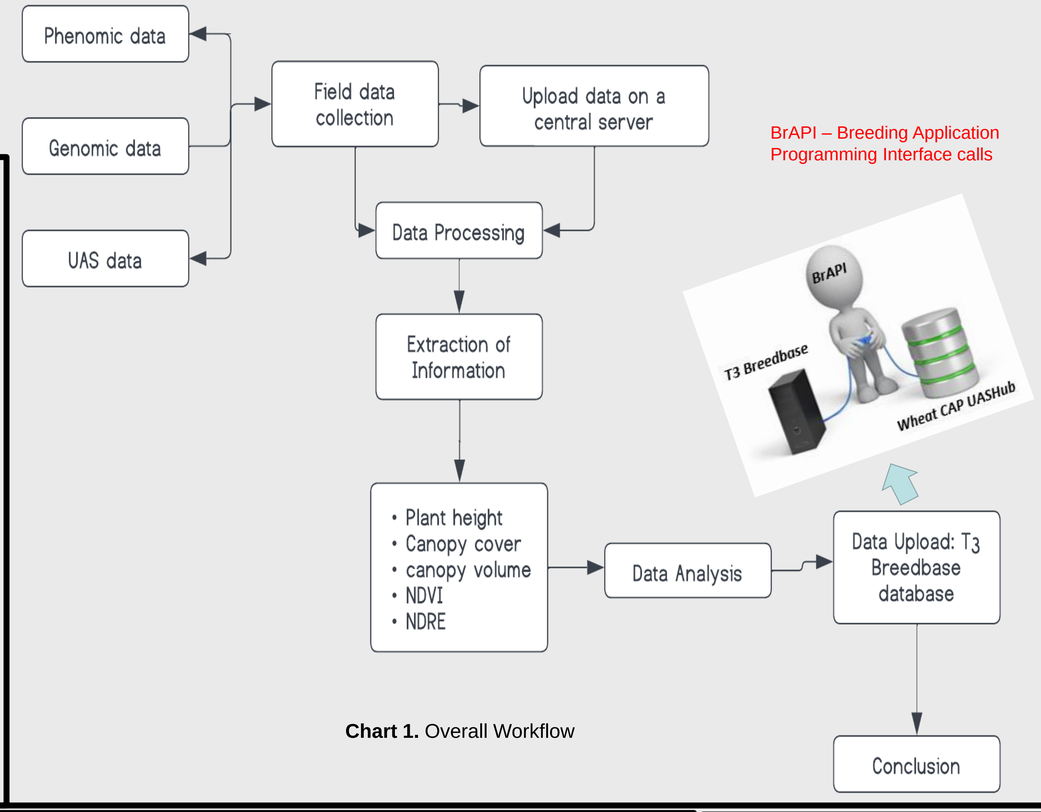


**Chart 1.** Overall Workflow

## RESULTS

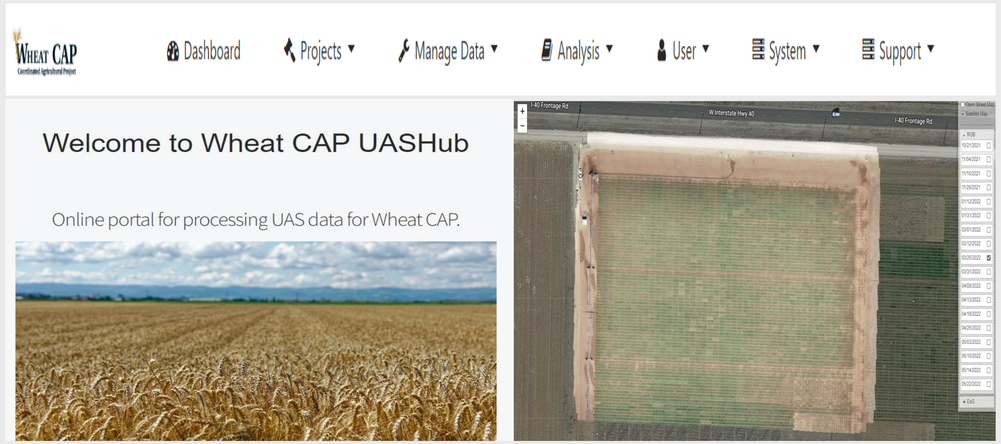


**Figure 3.** L: UAS Data Hub developed - https://wheatcap.uashubs.com/ R: Amarillo Wheat Irrigation Land

## IMPACTS

- ❑Improved yield
- ❑Easy data access
- ❑Zero Hunger
- ❑Better crops

## CONCLUSION

Data access → Better research → More yield → More Food

## CONTACT

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