Rice SCOUTER

An application for smartphones to estimate rice growth and yield

Introduction

Direct measurements of rice growth and yield in the field are important for assessing land productivity in farmers' fields since data collection through farmer interviews tend to be biased and inaccurate. However, since crop cutting is labor intensive and time consuming, available data is fragmented and limited both geographically and temporally.

Recent advances in image-processing programming allow for nondestructive and labor-saving acquisition of such data by estimating plant growth and yield from images obtained from smartphone cameras. Rice SCOUTER makes this growth and yield estimation available to everyone.

What is Rice SCOUTER?

Rice SCOUTER is provided as one of the features of a platform application 'HOJO' which is available for iOS and Android-based devices. It has the following notable features:

- It uses a deep learning model as its theoretical background to estimate growth and yield from monocular images.
- Its calculations do not require an internet connection, as they are optimized for smartphone chips.
- Data can be managed by linking with various meta-information (e.g. GPS coordinate, date and time) and can be easily exported outside the application. For example, data can be downloaded as a CSV file.
- Data can be exchanged with peers within the HOJO platform to exchange opinions on the growth status of rice plants.

Language support: English and Japanese. A French version is under development.

Piloting with partners

A beta version of the Rice SCOUTER is available for iOS and Android based devices, and is being used by a variety of users including researchers, development agencies, students, and private companies in Cambodia, Côte d'Ivoire, Japan, Liberia, Madagascar, Nigeria and Senegal. Several users have reported that the accuracy of the yield estimation is close to the actual yield level.

Furthermore, the Rice SCOUTER is being further improved based on feedback received from the users. In the future, we plan to include yield forecasting using plant growth images before flowering.

How to access Rice SCOUTER

Access to Rice SCOUTER and its instruction materials are provided on request.

Contact information

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