Carbon Footprint calculator

DISPLAY: Digital **I**nformation **S**ystem for **P**roduct **L**abeling of Rice to communicate Carbon-Footprints based on **A**ctual **Y**ield Recovery

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IRRI

CLIMATE & CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

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What is a carbon footprint?

A carbon footprint is the total greenhouse gas (GHG) emissions caused directly and indirectly by an individual, organization, event or product.[1]

- Calculated by summing the emissions from every stage of a product's lifetime (production, handling, processing, manufacturing, transport…)
- All gases emitted over a product's lifecycle (CO_2, CH_4, N_2O) are converted into units of carbon dioxide equivalents (CO_2e) for easy comparison.

[1]The Carbon Trust (2012) Carbon Footprinting.

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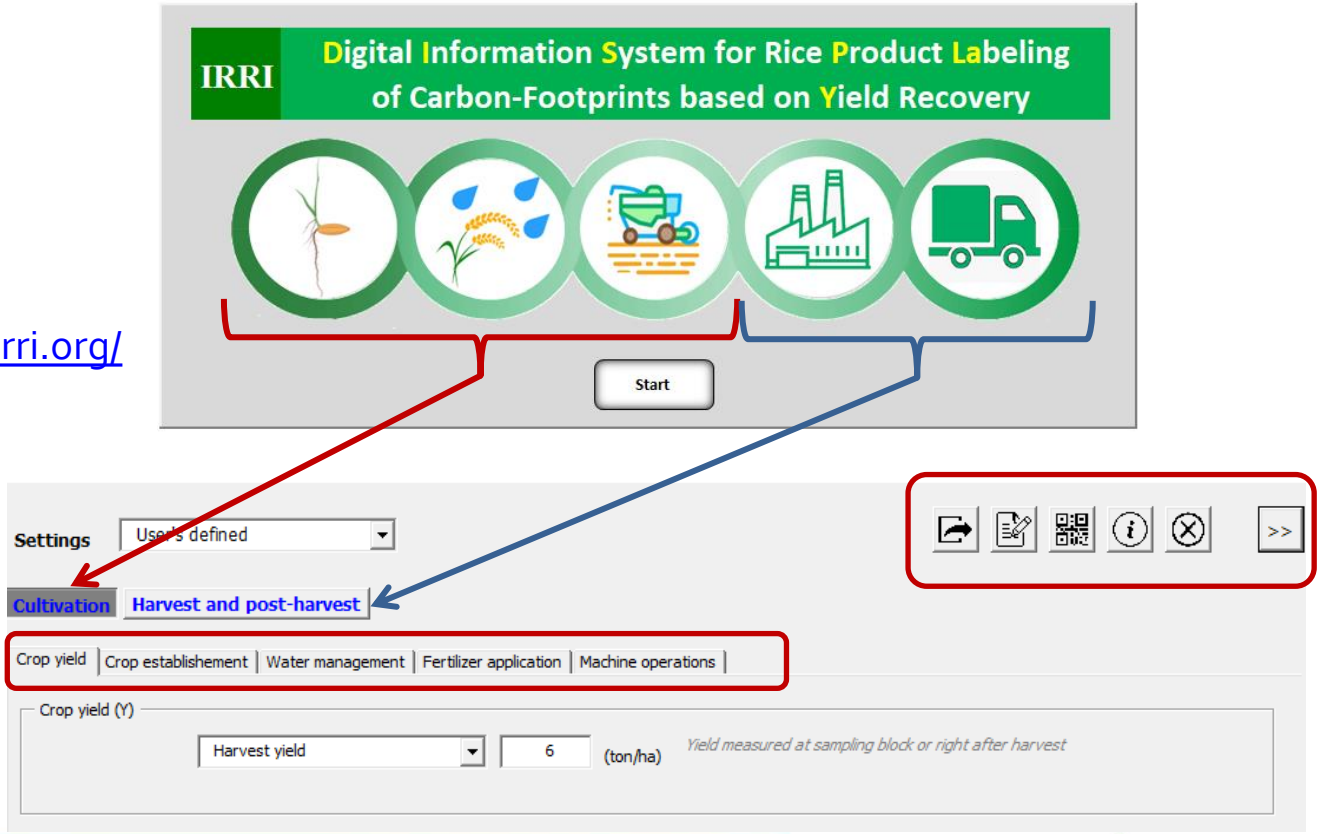
How is DISPLAY different from SECTOR?

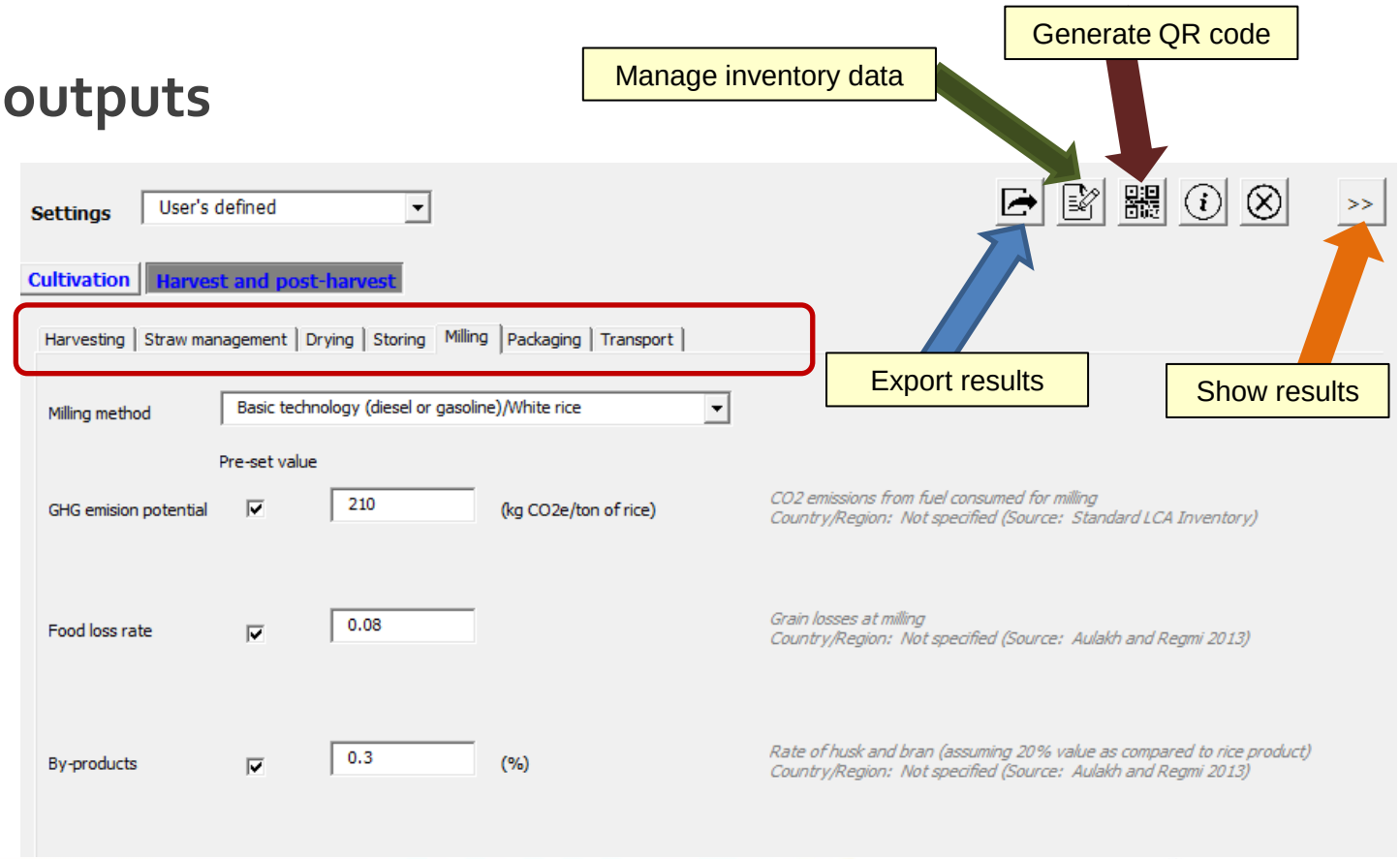
- **SECTOR** calculates the emissions from **field production only** and the output is provided in **t CO_2e/ha**
- **DISPLAY** calculates the carbon footprint across the **entire value chain (including losses)** and provides the output in **g CO_2e/kg** of packaged rice (e.g., for companies to analyze their value chain)
- **DISPLAY** allows the user to **generate a QR code** for communicating carbon footprints

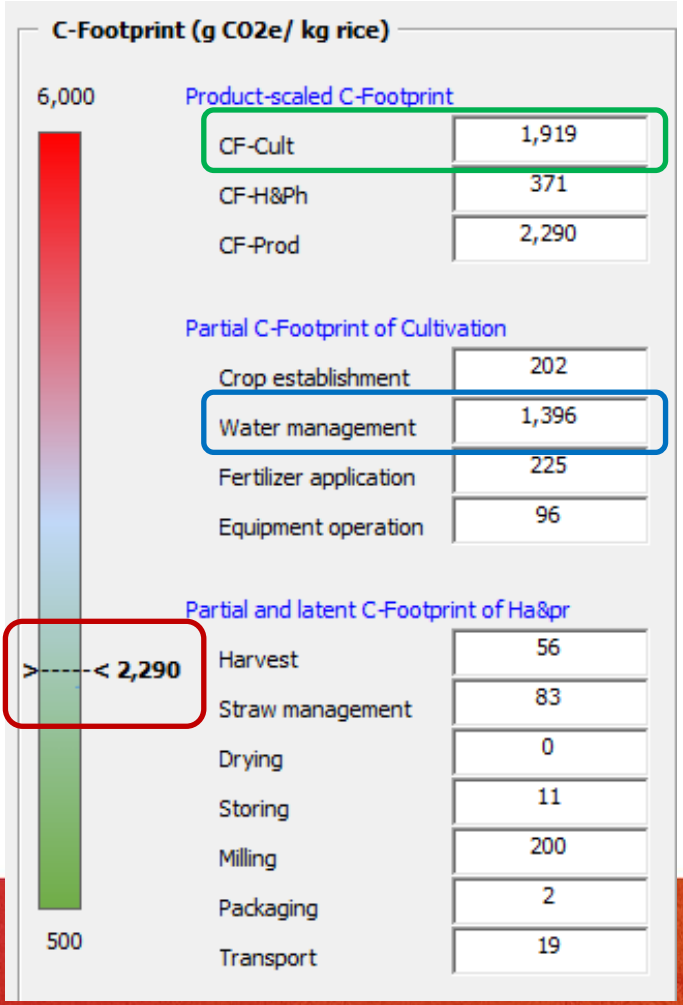
DISPLAY – Beta version

[Available soon at: https://ghgmitigation.irri.org/](https://ghgmitigation.irri.org/)



Inputs and outputs





Carbon footprint output

- Product-scaled carbon footprint of 2,290g CO_2e per kg of rice
- Majority comes from cultivation
- During cultivation, majority comes from water management

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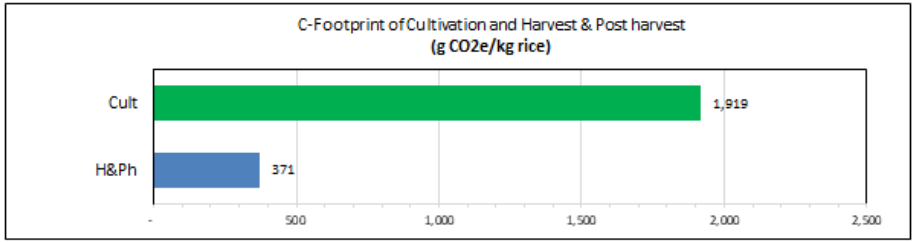
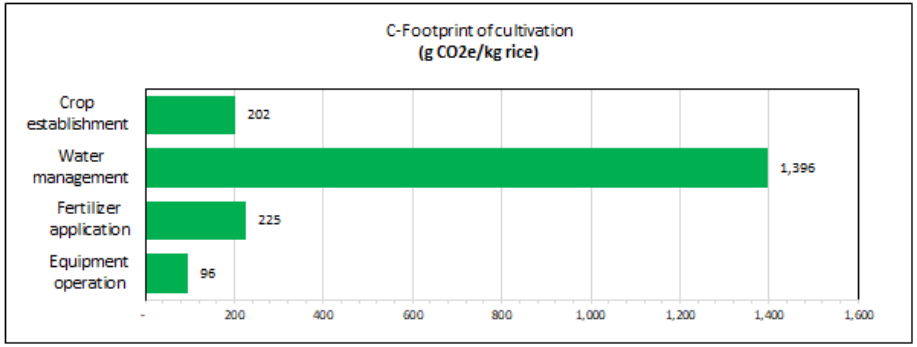
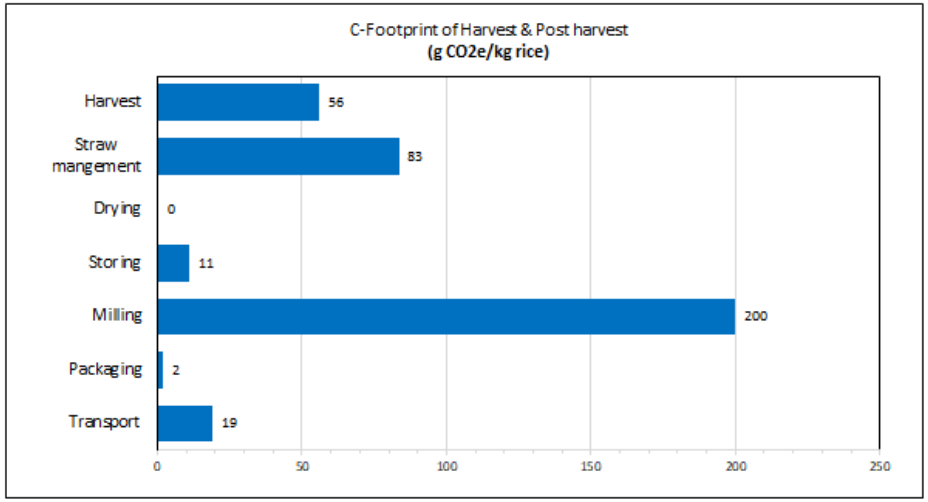
Carbon footprint output







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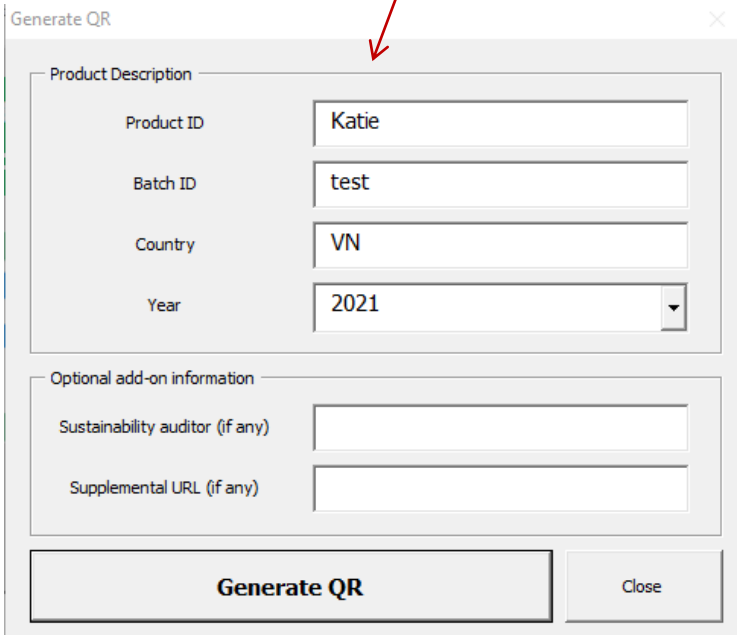
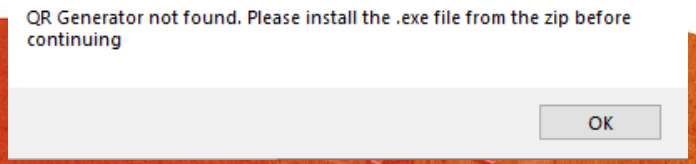
Carbon footprint output



Need to install a separate plugin from DISPLAY zip file for generating QR code



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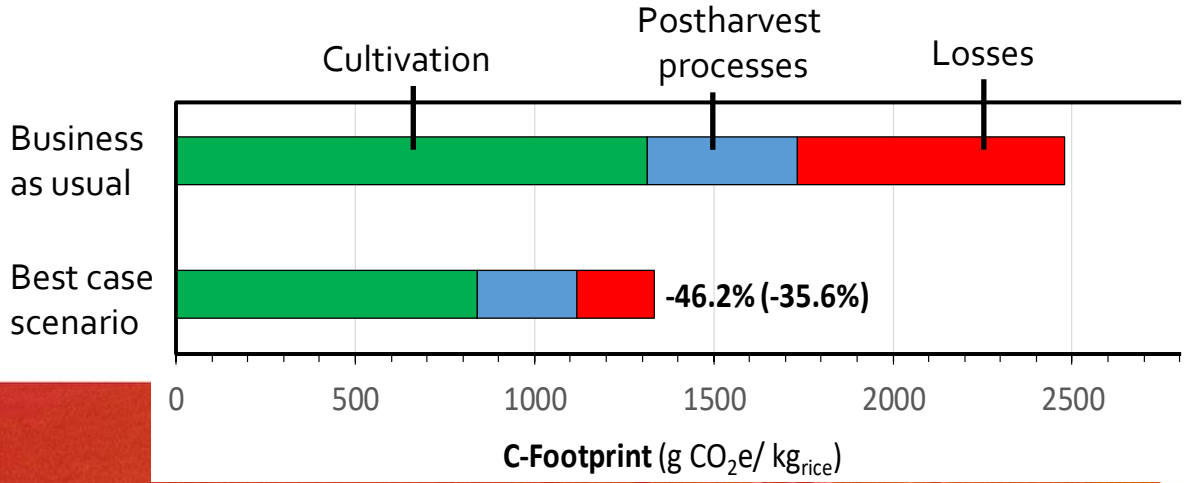
What makes the tool novel?

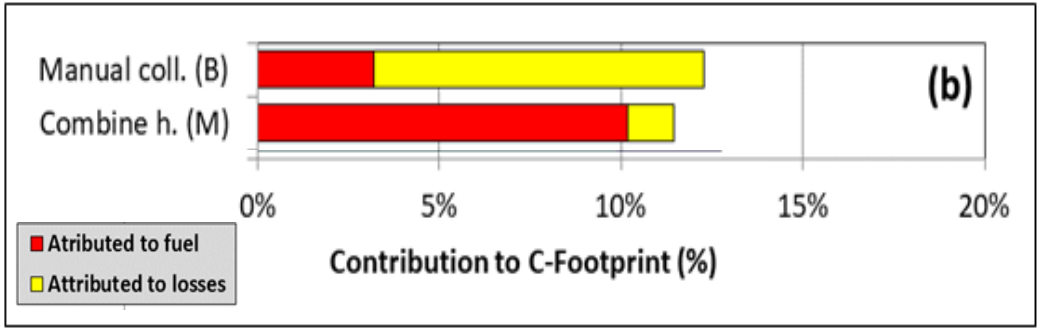
- First carbon footprint tool tailored to rice that allows variation across all activities during cultivation, processing, & handling (rather than default values) - *Shows hotspots across value chain for improvement opportunities to aid decision-making and change*

- The tool considers losses along the value chain and the inherent emissions of wasted product

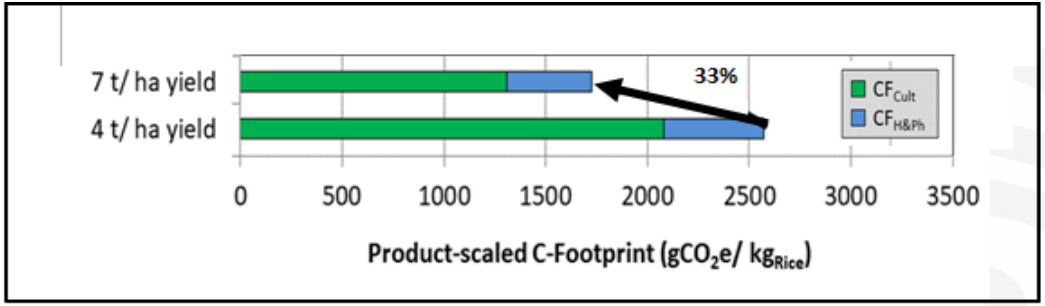


What makes the tool novel?

- Allows for comparison across technology scenarios showing the resulting carbon footprints



- Proves and quantifies that increasing efficiency reduces carbon footprint (e.g. high yielding & climate-adapted varieties are low-emission technologies)



https://ghgmitigation.irri.org/knowledge-products/mrv-toolbox/

Thank you for your attention!

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