FONTAGROTECH

Irrigation alternatives for sustainable management in rice cultivation

COLOMBIA, CHILE, PERU, URUGUAY



Webstory

Technological solution

The practice of irrigation management, which includes alternating periods of flooding and rainfed during the phases of non-critical growth of rice AWD (Alternate Wetting and Drying), can increase the efficiency in the use of water and at the same time reduce methane emissions, allowing a good yield in rice cultivation.

Technological description

The future production requirements to satisfy the demand of the next generations implies incorporating new areas, improving productivity and lowering water consumption. Producing more rice with less water will directly affect GHG emissions.

Impacts and results

- About GHG, there are dissimilar results between countries, treatments and evaluation cycles. For Colombia, there were reductions between 68% and 100% in the accumulated net flows of CH4 and from 3% to 100% in the accumulated net flows of N2O, except in the third cycle where, due to permanent rainy conditions, there was no decrease. ; Chile presented a decrease in methane between 16% and 37% and between 8% and 26% in N2O. In the case of Peru, a reduction in methane from 37.8% to 93% and an increase in N2O emissions were obtained.
- There were differences in the reduction in water use compared to the control: in Colombia it was between 18% and 42%, in Chile between 3.5% and 28.9% and in Peru between 15% and 23%.
- Regarding yield, different results have been found in the evaluated localities, showing, in general terms, that there are no statistically significant differences between the treatments.
- 9 validation demonstration plots were established, in about 14 hectares where the AWD technology was disseminated, for farmers and other actors in the rice sector of the three countries.
- 15 events have been held with 1,579 participants.

22 %
Water consumption savings

37.5 %
Average nitrous oxide decrease

15.3 %
Average nitrous oxide decrease

50 %
Irrigation time decrease

50 %
Event participants

40 %
Irrigation cost decrease

20
Transference events

1.769
Event participants

MAIN DONORS

FONTAGRO

PARTICIPATING ORGANIZATIONS

INIA CIAT