

Entry No. IRRC-0149

Category : International Rice Research Conference

Select Theme : Disruptive technologies and innovations

Endorsement email :

Keyword 1 : Innovation systems

Keyword 2 : Knowledge intensive agriculture

Keyword 3 : Public-private partnerships

Title of Entry : Turning Rice into Wheat: The U.S. Origins of Large-Scale, Capital-Intensive Rice Production, 1885-1915

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Select only one type of presentation

: 15 minute oral presentation

Abstract

: As rice researchers forge ahead in their efforts to develop "disruptive technologies" and innovations that will prove helpful, even indispensable for feeding the world in the next thirty years, it is useful to spend a bit of time on the past. History may not repeat itself, but, as Mark Twain wrote, "it does rhyme." With this in mind, the proposed paper will focus on a truly disruptive innovation in the history of world rice production: The creation of an entirely new system of growing rice that developed in southwestern Louisiana, southeastern Texas, east central Arkansas, and, slightly later, in the Sacramento Valley of California in the period between 1885 and 1915. During this period, "networks" of farmers, scientists, agricultural promoters, capitalists, and U.S. governmental agencies disrupted the way in which rice had been produced worldwide for thousands of years by essentially turning the cereal into wheat. That is to say, constellations comprised of these groups succeeded in adapting the capital-intensive heavy machinery and production methods employed in U.S. wheat production for use in rice production. In so doing they drastically transformed the rice production function, and, largely dispensing with labor, created the first capital-intensive rice production scheme in history. The labor/land ratio characteristic of this scheme was unlike any other in the world--by 1900 one laborer could cultivate 100 acres--and continued capital-intensive innovation has subsequently pushed that figure up to 1000-1250 acres. The success of this disruptive technological innovation was quickly noticed, and parts of the technological "package" were tried unsuccessfully in Asia (on Sumatra) as early as the 1920s. It was not until much later that the American production system was replicated elsewhere. Technology transfer/adaptation is never easy, and those interested in developing disruptive technologies in rice today would do well to spend a little time learning from the past.

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