Realization of a low carbon society through game changing technologies

Biomass production with low fertilizer input through enhancement of nitrogen fixation by iron-reducing bacteria

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Summary :

Modern crop production is supported by fertilizers; however, excessive use of fertilizers has caused environmental and energy problems including global warming, nitrate pollution in groundwater, and water eutrophication.

In this project, we will develop novel agricultural technology to ensure rice yields with reduced nitrogen fertilizer input, based on our recent finding, “nitrogen fixation by iron-reducing bacteria”. Scientific base of the technology to enhance nitrogen fixation by iron-reducing bacteria in paddy soil will be established and its validity will be confirmed in the field study.

This technology will reduce the amount of nitrogen fertilizer use, mitigate greenhouse gas emission from agricultural fields and contribute to realize a low carbon society.