

Session I Pitch 3

Research networks in Asia for greenhouse gas mitigation from agricultural soils

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In Japan farmers normally drain paddy water for about 1 week (so-called mid-season drainage: MD) during rice cropping period for better production. This is originally not for mitigation of CH₄, but drier soil condition leads to reduce CH₄ emission. We found that prolonged MD could reduce 30% of CH₄ without negative effect on yield. Similarly in Asian countries, a water saving technique of alternate wetting and drying (AWD) is expected to reduce CH₄. We found that AWD could reduce 30% in average of CH₄ emission from paddy fields in four Asian countries, Vietnam, Thailand, the Philippines, and Indonesia. This is one of flagship project of GRA (Global Research Alliance) on agricultural greenhouse gases. Storing carbon (C) in soils has huge potential to mitigate climate change and contribute to sustainable food production. This is the concept of 4 per 1000 initiative. Considering the importance of the long-term experiments to monitor soil C, we launched Asian long-term Experimental Network for Agriculture (ALTENA) in 2017. Based on field monitoring and modelling studies, a web-based decision support tool to visualize soil C sequestration and GHG emission was developed. I hope this kind of tool would contribute sustainable soil management to be widely spread.