Session I (Groundwater Irrigation)

Presentation by Koichi Fujita

<u>Presentation title:</u>

"Groundwater Irrigation and Agrarian Change in the Lower Gangetic Plains: Explaining Different Development Trajectories between Bihar, West Bengal and Bangladesh"

<u>Abstract:</u>

Groundwater has been a vital input for agricultural development in South Asia. The lower Gangetic plain was not the exception. The rice Green Revolutions started since the 1980s in West Bengal and Bangladesh, where in *rabi* season HYV *boro* rice expanded rapidly with the diffusion of tubewells—especially private shallow tubewells—and also in *kharif* season HYVs started to diffuse in *aus* and *aman* rice, often accompanied by supplementary tubewell irrigation. In Bihar, tubewells started to disseminate much earlier since the mid-1960s, but they have been used only for wheat in *rabi*, not for rice in *kharif*. This is the main reason why HYVs have not been accepted in rice cultivation in Bihar, causing its extremely low yields. On the other hand, it has been widely believed that backward agriculture in East India including Bangladesh is mainly attributed to its agrarian structure (or the "semi-feudal mode of production relations in agriculture"), and the radical land reforms implemented by the Left Front Government in West Bengal since 1977 contributed largely to the rapid agricultural growth after the 1980s.

This paper re-examines the issue of agricultural growth and stagnation in the lower Gangetic plain, by considering the complex interrelations between ecological conditions, tubewell technologies adopted, government policies (including R&D in agriculture, rural electrification, input subsidy, etc.), and agrarian structure (taking into account of land tenure policy), and tries to show quite a different view with regard to the different development trajectories in agriculture and rural society in Bihar, West Bengal and Bangladesh. The key factor to be emphasized is the mode of diffusion of tubewells in the different ecological settings in each region.