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Water accounting and productivity at different spatial scales in a rice irrigation system: a remote sensing approach

As agricultural water resources in Asia are becoming increasingly scarce, irrigation efficiency must be improved. This study quantified water use efficiency and productivity at 10 different spatial scales, in District 1 of UPRIS, Central Luzon, Philippines. The results show that water re-use at the largest scale is equal to 30% used by the rice crop which implies that the farmers in downstream areas rely on re-used water captured by check dams or from shallow wells. Of the gross inflow, 74% flows out of the system, which indicates a wide scope to increase water productivity. The study is unique in that it for the first time quantified how water productivity increases with larger scales due to more water re-use opportunities.