In rural farming villages in the mid-hills of Nepal, most people depend on gravity fed single-use domestic water systems (SUS). The planning and design of SUS projects seldom accommodates the irrigation needs of system users, as Domestic water projects and irrigation projects are separately planned and financed in Nepal. In 2003, iDE and Winrock began developing multiple-use water systems (MUS) in the mid-hills of Nepal. These systems were designed to meet domestic needs as well as provide water for vegetable crops.

Our paper examines how rural water systems (MUS and SUS) can serve productive uses that contribute to the livelihood, health, and wellbeing of rural farmers. An in-depth study of 5 MUS and 5 SUS in three mid-hills districts of Nepal was undertaken from October 2017 to March 2018. This study included 202 household surveys, 50 key informant interviews, and 10 focus groups.

Our research findings show that 70% of SUS users, despite their systems being designed for domestic use only, also irrigate vegetables on their Bari land. Of these farmers, 48% derive income from growing vegetables. In contrast, 89% of the MUS households irrigated their bari lands with 75% of the households earning an income from vegetable production. In addition to growing vegetables, productive uses also included horticultural crops (14%), bio-gas (15%), watering livestock (78%), dairy (56%) and making Rakshi (34%). These productive activities have become a reliable source of income for a majority of household contributing about 11% of their income, totaling $520 per year, a significant income for these rural farmers.

Productive activities are often unplanned de-facto uses of water that create inefficiencies within the water system. Interviews with key informants identified four implications of these inefficiencies: inequitable distribution of water (93%), a shortage of water for domestic use (58%), a shortage of water for intended multiple uses (88%), negative impacts on system operation (78%), and system breakdowns (53%).

MUS users typically gain more benefits and income than SUS users because of the improved control of water, efforts to link their farms with agricultural inputs and technologies, access to markets, and innovative irrigation technologies and services.