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Water storage and poverty in Burkina Faso

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In semi-arid areas, such as Burkina Faso, West Africa, surface water is not generally available throughout the year. In order to enable people to grow crops during the dry season, thousands of small reservoirs ($<$1 Mm3) have been constructed. In addition to irrigation water, these reservoirs provide water for households and cattle, fish, and building materials such as reeds and loam. It is reasonable to assume that such reservoirs improve rural livelihoods, although there may be negative effects such as waterborne diseases.

In order to quantify the overall socio-economic impact of small reservoirs on rural poverty, an in-depth statistical analysis was performed. An a priori causal network of factors linking reservoirs to poverty and livelihood was designed. The individual links were subsequently tested on significance and the strengths of significant links were quantified. The analysis showed that, in Burkina Faso, there is a strong positive correlation between population density and the occurrence of small reservoirs. Reservoirs seem to have no negative effects on health. At the same time, there are also no positive effects on food security and agricultural production. The main positive effects seem to be caused through improved income generation and improved sanitation.