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Understanding the spontaneous spreading of stone bunds in the Girar Jarso woreda, Ethiopia

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Sustainable land management technologies have been promoted in the highlands of Ethiopia through different intervention strategies (food-for-fork and mass mobilization campaign) over the las decades. However, a limited adoption by local farmers has been reported. Although, some local farmers do actually adopt and implement certain technologies, often spontaneously, on their own initiative, there is still limited understanding of which technologies spread spontaneously and how these are adapted to make them fit to the farming system. Hence, the aim of this paper is to understand the spontaneous spreading of stone bunds in the central highlands of Ethiopia. The study tests the hypothesis that spontaneously implemented stone bunds are more integrated into the farming system and lead to higher yields as compared to stone bunds implemented by the mass mobilization campaign. Data were collected through field observation and household surveys with 80 farmers: 40 farmers with spontaneously implemented stone bunds and another 40 farmers with mass mobilization campaign implemented stone bunds. Simple descriptive statistics were used to analyze and test the data. Results show that stone bunds were spontaneously implemented where they were most needed, mainly on farmlands with severe erosion (90%), poor soil fertility (40%), steep slope gradients (22%) and located nearby the homestead (13 minutes); for the mass mobilization campaign the respective figure is 67%, 10%, 15% and 32 minutes. Spontaneously implemented stone bunds were also significantly better maintained, more frequently modified to fit the farming system and better integrated with other soil fertility management practices such as compost and manure ($p<0.01$). Compared to stone bunds implemented by mass mobilization campaigns, spontaneously implemented stone bunds significantly more effectively reduced erosion and had more beneficial effects on soil moisture and soil productivity ($p<0.01$). The study suggests that the mass mobilization campaign should use a more participatory approach in which there is ample space for awareness raising and learning concerning the benefits of integrated farm management, and in which farmers themselves have a more leading role in the decision where to construct stone bunds. Such a strategy will lead to more sustainable impact on soil fertility and food security than the current top-down intervention approach.