Farmers' Decision Making Process for Innovations in Soil Conservation

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Résumé

Une meilleure compréhension du processus de « la prise des décisions par des fermiers concernant la conservation du sol », est essentielle pour améliorer l'efficacité des efforts dans la recherche et développement de la conservation du sol. L'objectif de cette étude est de contribuer à cette compréhension, en explorant - dans une manière holistique - des pratiques des fermiers et des raisons pour les appliquer ou pas, dans un cas spécifié.

A base des résultats empiriques et de l'étude de littérature des disciplines différentes, un cadre holistique a été conceptualisé, qui décrit le processus en 3 étapes dynamiques: (1) l'intérêt pour l'affermage, (2) l'intérêt pour aborder la dégradation de terre, et (3) l'intérêt pour appliquer une stratégie de conservation du sol. Dans chaque étape un potentiel de fermiers innovateurs « perdent le chemin » pour des raisons différentes.

1. Introduction

As Trébuil and Dufumier (1993) pointed out, if we want to understand the underlying socio-economic causes of land degradation and to indicate appropriate soil conservation strategies for different farmer groups, it is important to better understand farmers' decision making regarding the land use and soil and water management. Despite considerable effort, there is still very little known about who conserves the soil (Lockeretz, 1990). The advances made so far in soil conservation adoption research are still patchy (Erenstein, 1999) and the extreme socio-economic site-specificity both warrants and complicates this line of research (Graaff, 1996). Most adoption models have not explained farmers' behaviour well, or are not very useful (Camboni and Napier, 1994). While local technologies are now also considered, there continues to be a strong focus on technologies with insufficient attention to the role of the wider farming and livelihood systems in conserving the soil (Mazzucato and Niemeijer, 2000).

The aim of this paper is to contribute to a more holistic understanding of farmers' decision making process for innovations in soil conservation. In this study, farmers' decision making has been explored in the context of a mountainous olive growing area in northwest Syria, where evidences of land degradation are widespread.

2. Materials and Methods

Because of the holistic nature of the problem and the lack of data in the study area an explorative research approach was undertaken inspired by the principles of qualitative research, as developed by among others Glaser and Strauss (1967), Strauss (1987), Eisenhardt (1989), Miles and Huberman (1994), Yin (2003). It was aimed to identify a high diversity of case-studies and to understand for each case why farmers left the land degrading

or not. In order to enhance the accuracy of the conclusions, several findings which came out to be relevant from the discussions, have been cross-checked with other farmers and stakeholders involved in soil conservation in the area. In total 43 villages have been visited and 73 in-depth interviews have been conducted with farmers, extension-workers and other stakeholders in the study area during 3.5 months. The empirical findings of the study have been harmonized with theoretical concepts from different disciplinary backgrounds into an holistic framework.

3. Results

The results of this study are synthesized in a flowchart of farmers' decision making process for soil conservation (figure 1). In the flowchart, farmers decision making for soil conservation is described as a process in three dynamic stages in which the outcomes are determined by the driving forces at the household level, the household capital and the household environmental conditions.

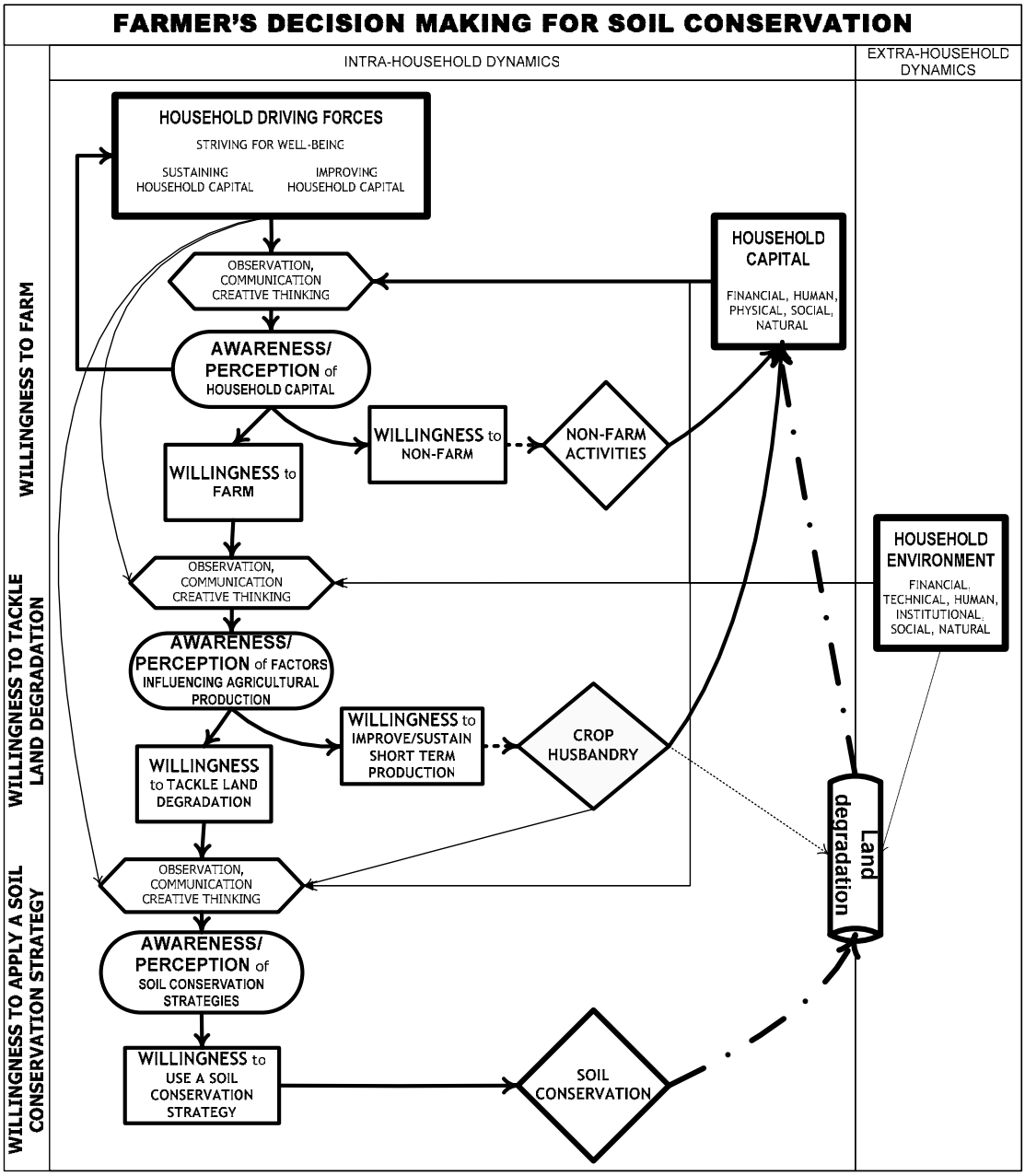

Figure 1. Farmers' decision making process for soil conservation

The process is driven by farmer's striving for well-being, compounded in a progressive aim of improving household capital (financial, human, physical, social, natural) and a conservative aim of sustaining household capital (i.e. a fear of resource degradation). On one hand, farmers strive for higher income, self-actualization (exploiting personal skills), physical comfort, social status, fertile land,… On the other hand, they fear financial risks, drudgery, social rejection and land degradation. Some farmers however are more (or less) risk-averse than others concerning to specific household resources. Young farmers and new farmers for example often show to be less risk-averse concerning to social pressures (as they still have to build up social capital) compared to farmers living permanently in the village (with a higher social status).

When a land-owner faces a decline in household resources (triggered by land degradation), he can adopt three basic strategies in order to sustain/improve his household capital: (1) non-farm activities (long term/short term), (2) improved crop husbandry (short term) and/or (3) soil conservation (long term). Whether he adopts one or several strategies, depends on his perception/awareness about the necessity, possibility and effect of these strategies on his household capital. It is important to note that specific actions often imply a synergy or trade-off effects on the household resource base. For example, in the study area it was noted that many farmers applied extensive tillage frequencies in their hilly olive orchards, thereby triggering land degradation. When asked about the reason of this practice, farmers answered: "to clean the fields of weeds". When confidence was gained, some farmers eventually admitted, that less ploughing would be better on the short term as well as the long term (improved/stabilized financial, natural, physical and human capital), "but weeds must be removed, otherwise I am a bad farmer" (reduced social capital).

According to these three basic strategies, the decision making process is described in three dynamic stages: (1) willingness to farm, (2) willingness to tackle land degradation and (3) willingness to apply a soil conservation strategy. In our study we observed that –ceteribus paribus- the higher the willingness to farm, the higher the willingness to tackle land degradation, the higher the willingness to apply a soil conservation strategy and the more likely farmers will apply soil conservation. Indeed land-owners having a higher willingness to farm do communicate, observe and reflect more on the factors influencing agricultural production and as a result are more aware of land degradation. Farmers with a higher willingness to tackle land degradation, observe, communicate and reflect more on soil conservation strategies and are therefore more likely to experiment with soil conservation innovations.

4. Discussion and conclusion

Farmers' decision making process for soil conservation is not a simple "to-do or not-to-do dilemma", but a process of multiple stages. In every stage, a number of farmers go "missing". In this way soil conservation application can be seen as a funnel, where a lot of farmers get "lost" on the way for various reasons. On one hand, it explains why single-focussed approaches for adoption (such as cost/benefit analysis) do not give a satisfying answer. On the other hand it highlights the need to focus soil conservation efforts on the appropriate level in the decision making process, where most farmers are disengaged from soil conservation.

5. Literature cited

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