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Qualitative Model of Potato seed systems: a Proposal to Converge Seed-related Biophysical and Socioeconomic factors

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Abstract

One of the most important constraints to potato production in developing countries is the lack of quality planting material to be used by farmers, either coming from the formal or from farmer-based seed systems. A number of projects have been implemented to improve farmers' access to quality planting material in different countries. However, these experiences have not been documented in a comparative or parallel way in order to understand the factors that influence success or failure and to extract lessons and guidelines that can support decision-making for future investments. This paper presents a proposal for modeling potato seed systems by identifying the key factors that influence the use of quality seed by farmers, which includes three main types of factors, namely 1) the biophysical factors related to seed degeneration and seed availability, both influenced by the presence of biotic (viruses, bacterial wilt, and other diseases, or pest such as potato tuber moth), and abiotic constraints (frosts or draughts that represent shocks that could threaten seed availability); 2) management factors, including farmers' own seed management practices and also the seed multiplication technologies used by the private or public sector in charge of seed supply, this influenced in turn by the existing regulatory frameworks; 3) demand and market related factors, which includes farmers' willingness to pay for quality seed, influenced by their perception about the added value of seed quality, the market demand for specific varieties, and the profitability of potato cultivation as a business. The proposed seed model aims at highlighting key factors that should be documented, analyzed and taken into account when planning seed potato interventions.

Key words: Seed systems, potato