Watershed Evaluation of Beneficial Management Practices (WEBs): On-Farm Economic Assessments

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In 2003-2004, the Canadian government initiated a $110M Greencover Program to help local farmers improve grassland management, protect water quality, reduce greenhouse gas emissions, and enhance bio-diversity and wildlife habitat. This 5-year program included a Watershed Evaluation of Beneficial Management Practices (WEBs) component. WEBs mandate is to assess effectiveness of selected farming practices in improving water quality and to evaluate the economic benefits and costs. Evaluating land use practices and their impacts at a watershed scale is extremely challenging. Economic studies have generally looked at narrowly defined aspects of land use and water quality, and few have attempted to integrate the economic factors with the agronomic, environmental and social impacts of watershed management. Data requirements are enormous, and the linkages among the multitude of variables are complex and not well understood. Effects of specific practices may take years to become manifest. Moreover, farmers need to know how the practice or technology fits into their farming operation, and potential impacts on their cash flow and net farm income. WEBs is a multi-disciplinary project involving researchers from natural as well as social sciences. Two to five practices are being assessed on each of seven watersheds scattered across Canada. Specifically, the on-farm economic analysis will determine the economic feasibility of adoption. It will determine the cost of adoption, and the impact on farm cash-flow and net farm income. It will also identify potential barriers to adoption. A SWAT modeling framework is being used to develop an Integrated Economic-Hydrologic Watershed behavioural model for two sites. Obtaining farm-level economic data is a significant challenge. The main data sources are field surveys, supplemented with consensus, GIS and published farm data**.** Findings will benefit individual farmers, policy makers and other stakeholders.

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