

AGRI-ENVIRONMENTAL INDICATOR PROJECT



Agriculture and Agri-Food Canada

REPORT NO. 15

PROJECT WORK PLAN FOR 1996-1997

Environmental Indicator Working Group
of Agriculture and Agri-Food Canada

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1. Introduction.

Agriculture and Agri-Food Canada's Agri-Environmental Indicator (AEI) Project was initiated in 1993 in response to the recommendations of several groups, including the Federal-Provincial Agriculture Committee on Environmental Sustainability (1990), the Canadian Agri-Food Research Council (1992) and the Auditor General of Canada (1993). The Project is a collaboration between Research Branch, the Prairie Farm Rehabilitation Administration and Policy Branch (which acts as departmental lead).

The AEI Project is focused on six indicators and their associated components: farm resource management, risk of water contamination, agroecosystem biodiversity change, agroecosystem greenhouse gas balance, input use efficiency and soil degradation risk. Detailed descriptions of these indicators are available from Agriculture and Agri-Food Canada ¹. Information on the key activities and outputs generated through the AEI Project in 1995-96 is available from Banerjee (1996) ². The full results of the AEI Project will be documented in a comprehensive report in 1998.

This document presents the project work plan for the fiscal-year 1996-97. This work plan represents revisions to the original project work plan completed in 1995 and is based on the results of the AEI Project departmental workshop held on 18-19 June 1996 and the 20-21 June 1996 meeting of the Agri-Environmental Project Advisory Committee. The Plan covers the main areas of activity in 1996-97 but does not profile these activities in detail.

2. Project Management and Coordination Activities.

The Inter-Branch Environmental Indicator Working Group of AAFC will continue to oversee implementation of the project. The technical teams established to develop specific indicators will also continue in their work. Specific management / coordination initiatives and activities in 1996-97 are described below:

- ☞ **Advisory Committee on Agri-Environmental Indicators** - Lead: Environment Bureau (T. McRae). Hold two meetings of the Advisory Committee in 1996-97; one (held) in June 1996 and the other in the fourth quarter of the fiscal-year.
- ☞ **Departmental Workshop of Principal Investigators** - Lead: Environmental Indicator Working Group (S. Smith, T. McRae). Hold a departmental workshop of principal indicator investigators to assess progress, refine work plans and discuss shared issues (held June 1996).
- ☞ **AEI Project Communications Plan** - Lead: Environment Bureau (T. McRae). Develop a project communications plan in consultation with the Communications Branch. This will include further development of the concept and approach for the comprehensive 1998 project report.
- ☞ **Environment Canada Environmental Indicator Bulletin on Agriculture** - Lead: Environment Canada (D. O'Farrell). Continue to provide technical support to Environment Canada.
- ☞ **AEI Project Report for 1996-97** - Lead: Environmental Indicator Working Group. Initiate work

¹ Agriculture and Agri-Food Canada. "Agri-environmental indicator project: description of indicators and project activities and outputs to 1998". Environmental Indicator Working Group, October 1995.

² Banerjee, R. 1996. "Agri-Environmental Indicator Project: Summary of activities in fiscal-year 1995-1996". Environmental Indicator Working Group, Agriculture and Agri-Food Canada, April 1996.

on a summary report of project activities/accomplishments in 1996-97.

Input to OECD Joint Working Party - Lead: Environment Bureau (T. McRae). Provide input on agri-environmental indicators to the activities of the OECD JWP, and communicate results of JWP activities within AAFC.

3. Indicator Development Activities and Deliverables.

Indicator development activities and deliverables for 1996-97 are listed in Table 1 below.

TABLE 1. AGRI-ENVIRONMENTAL INDICATOR DEVELOPMENT ACTIVITIES AND DELIVERABLES FOR 1996-1997			
Indicator	Component	Developmental Activities	Deliverable(s) / Lead(s)
Farm Resource Management	Soil	1. Obtain and analyse data on agricultural land use and soil cover at national and provincial levels for 1981 and 1991. 2. Assemble data and calculate "bare soil days" for major crops and regions for 1981 and 1991. 3. Validate selected census of agriculture variables (summerfallow, crops, tillage) from Landsat imagery and ground-truthing of residue levels.	1. Oct. 96: Report on soil cover trends. 2. March 97: Report on methods and results of bare soil day calculations. Lead - Huffman, Research.
	Farm Inputs	1. Analyse/compile and report results of farm inputs management survey.	1. July 96: Report on Canada-level results. 2. March 97: Report on regional-level results. Lead - Culver, Policy.
Risk of Water Contamination	Nitrogen	1. Revise methodology, obtain required data and calculate nationally at the SLC or ecodistrict level for 1981 and 1991.	1. November 1996: progress report with calculations for Ontario. 2. March 1997: national-level report. Leads - Macdonald, Milburn, Simard, Bowman, Chang, Zebarth, Research.
	Phosphorus	1. Develop draft methodology, obtain required data and calculate at ecodistrict level for Quebec for 1981 and 1991.	1. March 97: Progress report on methodology and Quebec calculations. Leads - Simard, Macdonald, Milburn, Bowman, Chang, Zebarth, Research.
Agro-ecosystem Biodiversity Change	Species level	1. Develop conceptual basis and methodology for calculating the indicator component.	1. March 97: Concept and methods paper. Leads - I. Smith, Tomlin, Research.
	Habitat level	1. Assemble land use change data at SLC scale (prairie region) for 1991. 2. Further develop and refine approach, expand to 1981 baseline and national scale.	1. June 96: Draft habitat bulletin developed. 2. March 97: Expanded paper to document concepts, methods, assumptions, incorporation of other data, etc. Lead - Weins, PFRA.
Greenhouse Gas Balance	CH ₄	1. Assemble data and calculate methane emissions from Canadian agriculture (livestock and farm animal manures) for 1986 and 1991.	1. Nov 96: Report on methane emissions from Canadian agriculture. Lead - Desjardins, Research.

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AND DELIVERABLES FOR 1996-1997**

Indicator	Component	Developmental Activities	Deliverable(s) / Lead(s)
	N ₂ O	1. Assemble data and models and calculate net emissions of N ₂ O from Canadian agriculture for [specify years].	2. March 97: progress report on N ₂ O balance calculations. Lead: Desjardins, Research.
Input Use Efficiency	Fertilizers, energy, pesticides	1. Update calculations and validate economic approach with available physical input data.	1. Dec 96: Report on updating and validation results. Lead: Narayanan, Policy.
	Irrigation Application System Efficiency	1. Obtain and analyse data on system efficiencies, system distribution (area) and environmental sensitivity/risk.	1. Jan 97: Report on indicator component. Lead: O'Brien, PFRA.
Soil Degradation Risk	Erosion	1. Incorporation of tillage erosion factor into soil erosion calculations. 2. Calculation of wind and water erosion risk at SLC scale across Canada.	1. Jan 97: National report on soil erosion risk for 1981 and 1991. Lead: Wall, Research
	Salinity	1. Extension of salinity risk index to full prairie region and calculation of index for 1981 and 1991 years. Ongoing refinement of index.	1. June 96: Finalized journal article on a soil salinity risk index for the Canadian prairies. 2. Nov 96: Report on a soil salinity risk index for the Canadian prairies. Lead: Eilers, Research.
	Organic Matter	1. Pilot study on use of the Century model to calculate change to soil organic matter quantity in Ontario agricultural soils.	1. March 97: Pilot study progress report. Lead: Wall, Research.
	Soil Compaction	1. Investigate feasibility of a methodology to estimate risk of soil compaction using agricultural soils in Ontario.	1. March 97: Progress report. Lead: Wall, Research

Additional information about the Agri-Environmental Indicator Project is available from:

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