
Discussion Paper

Economic Impact of New Hog Operations in the Rural Municipalities of Bifrost and Fisher

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Introduction

In recent years, a number of new hog operations have found their beginnings in the rural municipalities of Bifrost and Fisher. It is likely, over the next several years, that more hog operations will seek a home in the rural municipalities and that some of the existing hog operations will wish to expand.

Locally elected councillors review these proposed initiatives to assess their likely impacts. To assist these councillors with their reviews, this discussion paper presents a first look at the economic impact of hog operations initiated in the rural municipalities in recent years.

Objective

The objective is to discuss the economic impact of new hog operations in the rural municipalities of Bifrost and Fisher at the levels of farm, municipality, and rest of province.



Manitoba
Agriculture
and Food



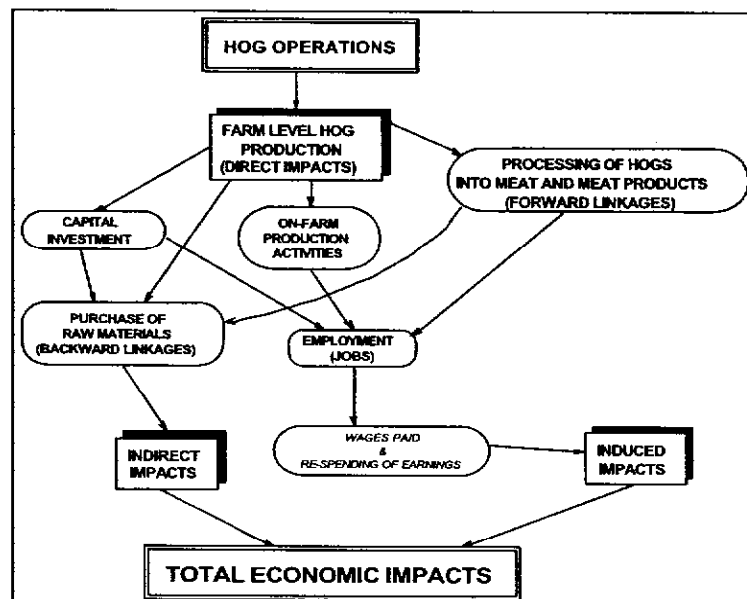
Definitions

Economic impacts from development activities and subsequent operational activities are created through circulation and re-circulation of money within an economic system. Economic impacts are typically classified under the following headings:

- Direct impacts: economic activities directly related to the project, including capital and operating expenditures, and wages;
- Indirect impacts: economic activities indirectly related to the project including warehouse and distribution networks, services, and processing;
- Induced impacts: consumer activities related to wages earned by employees of the project and the expenditure of those wages.

Indirect impacts are best understood through the following types of linkages:

- Backward linkages: formed through the purchase of inputs to the productive process;
- Forward linkages: formed through the passing of production to processors;
- Spin-off linkages: formed through the addition of new industries to service the original development.



Model

The analytical model used for the estimation of economic impacts is a combined input-output and employment model called *Manitoba Input-Output and Employment Model* (MIEM). The model was developed for an earlier study on the regional and provincial economic impacts of irrigation, and modified for use for this discussion paper.

The economic development indicators selected for this discussion are household income, gross domestic product, and employment. Their impacts are estimated at the levels of the farm, region (combined rural municipalities of Bifrost and Fisher), and province.

Economic impacts are estimated at two phases:

- Phase 1: hog operation development - barn construction, purchase and installation of equipment, purchase of breeding stock;
- Phase 2: hog operation production and further processing - operating expenditures, maintenance of barn and equipment, wages.

The model estimation involves the following tasks:

- Identification of economic activities to be included;
- Estimation of the total economic impacts of each selected activity;
- Estimation of direct, indirect, and induced impacts;
- Aggregation of the total economic impacts for activities of each phase;
- Aggregation of the economic impacts from the two phases.

Data

It is necessary to record the size of expenditures, their purposes, and their locations in order to assemble and organize data for model runs. The locations of expenditures are classified as on-farm, local (within the rural municipalities), or rest of province.

Surveys of farm owners and farm employees provide the data for analysis. All surveys were conducted in a live interview process with participant names coded

to mask any identification. The survey included 6 barns and 27 employees. The data from individuals is aggregated to give totals for the two rural municipalities.

Employee Data

	Employee Data, 2000 ¹	% Local
Wages earned \$	700,512	100
Housing \$	157,128	85
Groceries \$	137,172	84
Transportation \$	162,708	84
Clothing \$	35,136	43
Recreation \$	50,028	68
Health \$	15,828	54
Income tax and savings (est.) \$	142,512	N/A

Total expenditures of wages, within the boundaries of the two rural municipalities, for 2000, were \$443,133. Total expenditure of wages, outside the borders of the two rural municipalities, for 2000, was \$114,867 leaving \$142,512 for tax and savings.

79 percent of wage expenditures were local.

¹ Employees reported 39 children in their families

Owner Data

	Owner Data, 2000	% Local
Sales \$	14,069,000	8
Feed \$	4,183,475	67
Wages Paid \$	702,529	100
Vet \$	297,573	33
Breeding \$	3,199,899	20
Manure \$	281,900	100
Repairs	169,155	60
Insurance \$	68,771	8
Marketing \$	455,246	49
Op interest \$	236,146	58
Utilities \$	242,695	0
Property tax	68,104	100
Buildings \$ ²	1,169,500	48
Equipment \$ ³	555,062	28
Stock \$	2,268,772	17
Mortgage interest \$	594,840	83

Total hog expenditure, within the boundaries of the two rural municipalities, for 2000, was \$6,656,856. Total hog expenditure, outside the borders of the two rural municipalities, for 2000, was 7,836,811.

44 percent of hog operating expenditures were local.

² Total building investment divided by 10 years (11,695,00/10)

³ Total machinery investment divided by 10 years (5,550,620/10)

 Net Income

Net Income from Hog Operations, 2000	
Sales	14,069,000
Feed	4,183,475
Wages	702,529
Vet	297,573
Breeding	3,199,899
Manure	281,900
Repairs	169,155
Insurance	68,771
Marketing	455,246
Op Interest	236,146
Utilities	242,695
Property tax	68,104
Stock	2,268,772
Mortgage interest	594,840
Depreciation ⁴	862,281
Income tax (est.)	86,036
Net Income	351,578
Total Invested ⁵	5,348,820
Net Income / Total Invested	0.07

Total sales from new hog operations in the rural municipalities of Bifrost and Fisher in 2000 were \$14,069,000. Net income was \$351,578 on a current book value investment of \$5,348,820, resulting in a 7 percent return on investment.

⁴ Total investment in buildings and equipment x 5% (17,245,620 x .05)

⁵ Total investment in buildings and equipment less financed portion (17,245,620 - 11,869,800)

Impact of Hog Production on the Manitoba Economy

Actions taken by local producers affect other industries located either locally or in other parts of Manitoba through purchase of farm inputs and also through spending of the newly earned income on consumer goods. Both of these types of economic impacts were estimated using the Manitoba Input-Output and Employment model. Results are shown in the table below.

Economic Impacts of Hogs, 2000		
Economic Impacts of Construction, 2000		
Particulars	Local Region	Province of Manitoba
Gross Domestic Product (Thousand \$)	\$493.2	\$1,302.6
Household Income (Thousand \$)	\$316.8	\$813.8
Employment (FTE Jobs)	10	26
Economic Impacts from Production Activities		
Gross Domestic Product (Thousand. \$)	\$6,006.9	\$11,359.9
Household Income (Thousand \$)	\$3,348.7	\$5,954.6
Employment (FTE Jobs)	125	236

Economic impacts are generated under two separate phases. Phase one is the investment phase, where the purchase of machinery and equipment as well as construction of the building are the major activities. Phase two is the production phase, where the ongoing economic activities of the operation make up the major activities.

Phase one activities generate gross domestic product (GDP) in Manitoba of \$1.3 million, 40% of which is in the two local municipalities. At the local level, the impacts include an additional \$316 thousand generated as income through the creation of 10 full-time equivalent (FTE) jobs. It appears that hog production investment impacts are shared 40:60 between the local region and the province. This is because these activities require inputs that are not locally produced and thus, have to be imported from other parts of the province, as well as from other parts of Canada and the world.

Phase two activities generate an annual GDP in the province of almost \$11.3 million, 57% of which is in the two municipalities. Assuming that 46 FTE jobs are directly associated with the production process, this leads to creation of 125 jobs in the local region, and another 111 jobs in other parts of the province, for a total of 236 jobs. Through these jobs, \$3.3 million are added annually to the income of people in the local area, and another \$2.6 million in other parts of the province, for a total of \$6 million for the province of Manitoba as a whole.

Note that the above impacts do not include those from processing of hogs and those from further processing of meat and meat products. If these economic impacts were to be added, the resulting provincial impacts on the Manitoba economy would far exceed those shown here. Also not included are non-economic community benefits to local schools, recreational programs and service groups participated in by the barn owners, 27 employees and their 39 children.

Economic Impact of Hog OperationsFarm Employee Survey Form

Farm ID Code			
Employee Code			
Farm Type	Swine		
Wages Earned			
Housing \$		Housing % Local	
Groceries \$		Groceries % Local	
Transportation \$		Transportation % Local	
Clothing \$		Clothing % Local	
Recreation \$		Recreation % Local	
Health \$		Health % Local	
Number Children			

Economic Impact of Hog Operations

Farm Owner Survey Form

Farm ID Code			
Owner ID Code			
Farm Type	Swine		
Sales \$		Sales % Local	
Feed Purch \$		Feed % Local	
Wages Paid \$		Wages % Local	
Vet Med \$		Vet Med % Local	
Breeding \$		Breeding % Local	
Manure \$		Manure % Local	
Repairs \$		Repairs % Local	
Insurance \$		Insurance % Local	
Marketing \$		Marketing % Local	
Op Interest \$		Op Interest % Local	
Utilities \$			
Property Tax \$			
Buildings \$		Buildings % Local	
Equipment \$		Equipment % Local	
Breeding Stock \$		Breeding Stock % Local	
Mortgage Int \$		Mortgage Int % Local	
Housing \$		Housing % Local	
Groceries \$		Groceries % Local	
Transportation \$		Transportation % Local	
Clothing \$		Clothing % Local	
Recreation \$		Recreation % Local	
Health \$		Health % Local	
Number Children			