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**MEASURES OF DEPENDENCY AND POLICY IMPACTS OF THE FOREST
INDUSTRY ON RURAL PLACES**

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William A. White, Forestry Canada**

The prairie provinces of Canada contain regional economies where forestry is the major economic activity, despite province-wide dominance by other sectors. These regions contain communities which are dependent primarily on forest resource for their economic and social well-being. Resource dependent communities have particular problems which are largely absent in more diverse economies. These potential problems include instability, risk of mass unemployment, limited job mobility and limited amenities. This study identifies forest dependent communities and investigates the welfare implications of that dependency.

This paper contains three major components. The first outlines a method for identifying forest dependent communities. The method was formulated through an intensive review of past studies identifying dependence, as well as a review of pertinent theoretical literature. The method devised is founded in economic base theory and can be implemented at reasonable cost for a large number of communities. The first step is to estimate the economic base of the community, using the location quotient technique. Next, the forest dependence index (FDI) is calculated as the ratio of forest sector employment to economic base employment. Communities can be ranked by forest sector dependence with this measure.

The second component employs the methodology in identifying forestry dependent communities in the Canadian prairie provinces of Alberta, Saskatchewan and Manitoba. Analysis shows that there are few communities in these provinces which are totally dependent on the forest industry, but there are many communities to which the forest industry is a vital component of their economic base. In 1986 those Prairie communities with very high forest dependency included Hudson Bay in Saskatchewan and Powerview in Manitoba. Other highly forest dependent communities included Hinton, Hines Creek, High Level, Wembley, Grande Cache, Mayerthorpe and Whitecourt, in Alberta, The Pas in Manitoba and Big River, Chitek Lake, Togo and Paddockwood in Saskatchewan.

The third component of the analysis uses a three-sector general equilibrium model to estimate welfare impacts on a community from exogenous shocks such as changes in world prices of forest products and changes in timber supply. The results from this model give theoretical and empirical support to the hypothesis that welfare impacts on a community from these exogenous influences are directly related to the degree of its forest dependency.

The general equilibrium model also was used in policy evaluation. Important results of evaluation are 1) that sustained yield decreases short-run income losses from output price instability 2) income transfers decrease losses from instability but unemployment insurance, the standard income transfer method, is insufficient to

- a) Such policies would have an adverse effect on many local communities' abilities to diversify their economies.
- b) Community targeting policies would create double standards for different rural communities as opposed to access to equal opportunities.
- c) General policies should be maintained but must be flexible enough to allow local communities to identify their requirements and guide them to implement their programs.

3. "Where might we recommend government to go from here?"

The following, were proposed as recommendations to the government:

- a) Government should encourage involvement of local communities in planning development projects that may affect them.
- b) Government should make data (both qualitative and quantitative) accessible to local communities that can assist their understanding of current status, nature of dependency and projected future for planning purposes.
- c) Government should provide direction and coordination of development initiatives in ways which enable rural communities to participate.

The presentations by participants in the discussion groups reflect the priority concerns of local communities to participate actively in the planning of government projects that will have an impact on them. Even more, resource dependent communities require access to expertise and data that is related to areas of local development. This information may provide assistance in the development of local initiatives.

Biography - William E. Phillips

William Phillips is Professor and Chairman of Rural Economy at the University of Alberta. He received a B.Sc. (Agr.) at McGill University in 1961 in Agricultural Economics (general), a M.Sc. at the University of Connecticut in 1964 in Agricultural Economics (production) and a Ph.D. at the University of California, Berkeley, in 1967 in Agricultural Economics (natural resources). He specializes in the areas of Natural Resource Economics, Land and Water Conservation, Forest Economics, Recreation and Wildlife Economics and Agricultural Production Economics. He was co-editor of the Canadian Journal of Agricultural Economics from 1972-1976, on the Editorial Council for the Western Journal of Agricultural Economics from 1979-1982 and has been Advisor and Consultant to various Federal and Provincial Government agencies. He has published over 100 publications, papers and reports.

Biography - William A. White

Bill White heads up the economics research project at the Northern Forestry Centre of Forestry Canada in Edmonton and is an adjunct professor at the University of Alberta's Department of Rural Economy. His research work has included studies of forest dependent communities in B.C. and on the prairies. Bill received his B.S. from Brigham Young University, an M.A. from the University of Regina and a Ph.D. in economics from Simon Fraser University.

compensate for losses, and 3) capital subsidization decreases income losses from instability but the short-run effect is much less than if the dollars were spent on direct income transfers.

Questions for Discussion:

1. How important is it to know the degree of community resource dependency?
2. Should general government policies be replaced by policies that target communities in the basis of resource dependency?
3. Where might we recommend government to go from here?

Summary of the Round Table Discussions, Dawn Chimbe, Rapporteur

The presentation by William E. Philips of University of Alberta and William A. White of Forestry Canada outlined the importance of forestry as a major economic activity in the regional economies of the Prairie provinces of Canada. It identified forest dependent communities and looked at the effect of forest dependency on the welfare of communities. Like other resource dependent communities, there are potential problems which affect the communities such as economic instability, fluctuating unemployment, limited job mobility and poorly developed infrastructure.

The presentation had three main parts. First, they presented a methodology for identifying forest dependent communities by reviewing theoretical literature. Second, they applied the method to identify forest dependent communities in the Prairie provinces of Alberta, Saskatchewan and Manitoba. Third, they looked at a three sector general equilibrium model to measure welfare impacts on the community from the external changes in the world prices for forest products.

Group Discussions

Three questions were raised at the end of the presentation as a basis for discussion in the groups.

1. "How important is it to know the degree of community resource dependency?"

The discussion groups shared the view that resource dependent communities should know their degree of dependency on resources as a planning tool to assist development planners:

- a) To develop plans that can forecast future economic growth.
 - b) To look for alternatives for diversifying the economic base of the community, thus preparing it to adapt to future transition from one type of economy to another.
2. "Should general government policies be replaced by policies that target communities?"

Generally, group members did not support policies that would specifically target communities for the following reasons:

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