VI. CONCLUDING COMMENTS

The objective of this study was to provide a baseline picture of a relatively peripheral area of Bangladesh, constrained by weak infrastructural links to the core regions, and where major transport infrastructure improvements have been recently made. It has been recognized, for over forty years, development involves structural changes which can be stimulated by physical infrastructure investments. The Dhaka-NW highway knits together this peripheral NW region to the economic core regions of Dhaka and Chittagong. The Jamuna Bridge, as a major physical infrastructure investment has the potential to generate over time progressive changes in the region through direct and indirect impacts.

As discussed in Section II of this report, the cost and time savings deriving from a nonmarginal infrastructure investment such as the Jamuna Bridge will course through regional labor, inputs, and product markets. The resulting market expansion and regional integration can lead, in time, to improved regional productivity, incomes and welfare in the transportation corridor. An important policy question is to ascertain the magnitude and composition of not only the direct impacts but also of indirect regional impacts of the Jamuna Bridge, in the context of potential institutional and non transportation investments in the region. First, to get a handle on such long term effects, this report has attempted a characterization of the socioeconomic attributes of the corridor districts to serve as a baseline for a time profile study. Second, this section highlights the types of analytic information that needs to be collected over future years in order to capture the full range of direct, indirect and induced effects of JB on regional economies.

A Baseline Regional Profile

This report provides a description of some salient attributes of the corridor districts from secondary data and a socio-economic profile of two towns, surveyed as part of the research project, for 2000 - a benchmark year as the JB was opened in late 1999. The relatively under developed character of the region is underscored by several indicators documented in the body of the report. Only a few arehighlighed here for illustrative purposes. For instance, the average per capita GDP in industry is less than 25% of the national average, the region has only a 5.2% share of the national large scale industries and only 7.3% of the small scale industry. Average wages

are below the national average. The regions average of GDP per capita in the Power, Water and Gas sectors, crucial for manufacturing development, is approximately 50% below the national average.

The corridor and the two urban centers exhibit many of the characteristics of the early stages of economic development. It is a primarily dependent on agriculture and non farm activities are weakly developed. The overwhelming majority of the formal sector establishments in Bogra and Tangail – regional growth centers - are still small, family owned and operated. More than 50% of the retail and 44% of all establishments had no paid employees. More than 50% of the establishments were small scale employing between 1 –9 workers. Less than 1% were large scale. Almost 75% lacked any investment in capital equipment, over 80% incurred no finance charges, 72% were located on proprietor owned premises. These patterns of economic transactions, associated with small enterprises, are primarily based on reciprocal and non-market relationships. Enterprises depend on kin or friends for labor, credit and insurance. These social and institutional characteristics are not conducive for sustainable growth and for capturing the full benefits of a major infrastructure investment.

On the other hand, four establishments were large scale employing more than 50 workers. Two establishments had invested more than TK 5 million on land and buildings and three incurred more than TK10,000 in monthly interest payments. This indicates some establishments are moving into the non traditional sector. The survey results suggest that the economic structure of the towns are in a process of transition from a state characterized by small, undercapitalized firms primarily focused on income generation for household survival and predominantly characterized by constant returns to scale to the more capitalist, growth oriented enterprises that can capture increasing returns to scale. In the light of these findings we can postulate that as the transportation corridor is in a transitional state. There is the potential for structural transformation - provided there is further development of institutional infrastructures. For instance, the heavy dependence on proprietor or kin based credit or social insurance systems might indicate a weak development of modern finance systems. Credit and technology diffusion schemes for the micro-enterprises is a rapidly increasing phenomena in Bangladesh. Parallel development of credit, technology dissemination, insurance and industrial real estate development for larger enterprises will permit industrialization to proceed at a faster clip. Manufacturing and wholesale firms can grow in size if market based institutions are fostered to

help entrepreneurial development in the medium and large scale enterprises which are currently underrepresented in the corridor. These observations corroborate the suggestions made by the NWADS reports. The households and establishments can capture the fuller range of benefits, discussed in the theoretical section of the report, but this will largely depend on parallel investments in economic and social infrastructure. The Government of Bangladesh has already invested in educational facilities in the region as noted in the report, which is also reflected in the share of household expenditures devoted to education. The region can benefit from these social infrastructure investments if employment opportunities increase in the modern, high value added sectors. Alternatively, there will be an outmigration of the skilled labor force.

Additional Information Requirement for JB Assessment

As stressed throughout the report, Jamuna Bridge is a major perturbation to the existing system, and by removing the relative isolation of the region, can be a major force for structural transformation. It will be unfortunate if the investments in the Jamuna Bridge are viewed merely as a means for reducing travel times to Dhaka and Chittagong, or as a means for increasing export of the regional products, or providing transit opportunities to the neighboring SAARC countries to the port of Chittagong. Such an approach, while increasing traffic flows and perhaps generating some employment in truck and automobile workshops, will not be able to generate the full range of benefits. As the corridor is in a transitional state the full benefits will accrue only from structural transformation. These transformations (and regional economic development) will depend on system responses in more than the road transportation sector.

Given the relative neglect in transportation and regional economic literature of induced or development effects, the task of identifying the types of information necessary to assess the scope and magnitude of regional development effects is a challenging task and requires far more resources than are available to this report. However, we make a preliminary effort to identify the following types of analysis and data to address the broader consequences of JB and (clearly these ideas need to be spelled out in detail a later time):

* Induced Traffic

The recent widespread view that the failure to consider the traffic induced by transport improvements can threaten the accuracy and robustness of measured traffic

benefits has led to a call for estimating induced traffic. (Mackie, 1996; Hills, 1996; Goodwin, 1996; Noland and Lew, 2002). The recent observation of increased traffic counts and truck traffic in JB already exceeding recent forecasts is a case in point.

*Induced New Economic Activities

As noted in the text, the time and cost savings and increased accessibility along the corridor may make it possible for cereal crop farmers to shift into higher value crops such as vegetables and flowers which can be rushed to markets. Some underutilized rural labor may take up jobs as motorized or non motorized vehicle operators in nearby towns. Data must be gathered over time on such types of shifts of activities and labor over time.

*Dynamic Rural Urban Linkages

Such a shift to higher value-added activities in the region will yield changes in the rural demand for urban services (transportation, repair and marketing etc). The latter in turn will develop more and newer activities in urban areas with implications for wholesale, transportation and financial services. An appropriate survey should gauge the scope and extent of such activities.

This analysis and data acquisition could be usefully extended beyond urban cities by considering the effects settlements on secondary and feeder roads.

*The 'Density' Effects of Regional Development

Surveys to capture information on the effect of transport investments noted in the 'New Economic Geography' literature on the role of dense activities and agglomeration effects on economic growth (Krugman, 1999; Johansson, 1998) can also be designed.

*Supportive Non-Transport Investments

Much of the benefits from the JB can fail to materialize over time if complimentary investments such as in energy and power are not made. If the production of power, water and gas is not increased in Rajshahi Division (where it is at 40% of Chittagong and Dhaka levels), the economic activities in the division may have limited

benefits from improved accessibility. So the progress of such investment need to be monitored over time.

Smilarly, the NW region (which has highest per capita mileage of roads and good links to the Indian market) may not benefit from improved access to Dhaka and Chittagog if it does not develop increased capabilities in the technical areas and institutional developments in finance, insurance, etc. These areas need to be monitored.

Finally, we can make only limited observations from the survey data on two towns. A more accurate picture can emerge with analysis of the attributes of additional rural and urban settlements located on connector roads using the rich data set available from the National Household Surveys.

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