

The Impact of Hurricanes on the BVI Economy

What do we mean by the economic impact of a hurricane? Well certainly we want to convey the magnitude of net losses to the economy because while hurricanes impact negatively causing losses to sectors such as infrastructure, utilities, accommodation and distribution, other sectors such as construction, government services and professional services receive a boost in the aftermath or prior to impact. Of course this boost is mainly due to reconstruction, re-establishment of services and provision of other supportive services. Economic losses are definitely related to economic and spatial vulnerability.

But, a few things are absolute clear, and they are that the impact of a hurricane on an economy depends upon a number of factors including the orientation of the economy, the structure of the economy, the sophistication of the infrastructure, the natural environmental endowment of the country, the intensity of the hurricane, the duration of the hurricane, the path of the hurricane, the mitigating measures and probably most importantly the preparedness of the people. The point here is that the economic impact of a hurricane depends upon a series of interrelated factors pertaining disaster preparedness, economic structures, economic orientation and the attitude of the people.

The structure and orientation of the economy are critical factors in the level damage and loss a country could expect. Let us look at the BVI for example. Year ago we would be seen as a service economy but today we are transforming into an information, digital and knowledge economic. The

international services in which we trade are absolutely dependent upon and have a high information and knowledge content. This information and knowledge is applied through digital plant and infrastructure. Virtually all our systems dedicated to services production are export market oriented and are locked into major world markets.

Hurricanes affected production of goods and services on both land and sea throughout the country in these small islands. Most of our tourism services are marine-based, and the land environment is also critical for this sector as well. As mentioned earlier, our infrastructure, including electricity, water, telephones, television, roads and ports are exposed to the elements of high wind, rain high seas, landslides and mud run-off. The vulnerability of our infrastructure often translates into potential losses. The higher the physical vulnerability the greater economic losses the country can expect.

Another factor, which is very significant, is the natural endowment of the country. Beaches and the coastlines are very vulnerable to hurricane damage and if the country depends heavily on tourism, the potential for losses are real and great. Again if our economy survives on connectedness with the rest of the world, financial services will be greatly impacted.

Let me illustrate the impact of a hurricane on the BVI using our estimate of the damage and losses brought on by Hurricane Lenny. The economy of the British Virgin Islands, for the purposes of this exercise, was divided into approximately 18 sectors to assist us in fine-tuning our estimates of losses. The economy was first divided between goods producing and services producing sectors, with 4 sectors in the former and 12 in the latter.

In terms of damage to assets, we relied on the assessment of the Office of Disaster Preparedness (ODP) for assessment of damage to the private sector and in the case of economic infrastructure such as roads and ports, the Public Works Department estimates of damage was used. With respect to business interruption losses, a very similar approach of pegging business sales to gross domestic product and multiplying by the fraction of the year equal to the interruption of business operation.

Based on our methodology and our assumptions, the estimate of total damage and losses to economy as a result of the passing of hurricane Lenny is \$22,053,963 or about 3.1% of gross domestic product or national income. This suggested that from an estimated gross domestic product of \$721,317,895, Hurricane Lenny cost the economy, 11.32 days of production to recover the losses, which occurred in only 8 hours.

Our estimate of losses to the economy suggests 24.4% or \$5.4m in productivity losses, 25.3% or \$5.6m in damage to and destruction of assets, 37.1% or \$8.2m in losses due to interruptions to businesses and 13.2% or \$2.9m in lost wages and salaries to workers.

According to estimates, damage to assets in the goods producing sectors amounted to 8.6% and 91.4% in the services producing sectors. In the goods producing sectors there were losses of \$485,000 in the agriculture and fishing sectors. The estimate of damage in this area was taken directly from the Assessment Reports of the Office of Disaster Preparedness.

Business interruption losses in the services sectors added up to 92.0% or \$7.29m of the \$10.86m of the total. Losses in the services producing sectors of tourism, financial and distribution amounted to \$6.05m or 80.3% of total losses due to closure of businesses.

Lost wages and salaries to employees amounted to \$2.9m or 13.2% of total losses to all institutions of the economy. As expected, we estimated lost wages and salaries to be concentrated in the tourism (39.5%) and financial services (33.9%). Lost wages in the government was rather small even though it is the second largest employer. This is so because most employees in government and elsewhere are paid during a hurricane.

In summary, depending on the economic structure, the market orientation, the natural environmental endowment, how sophisticated the infrastructure is, the intensity of the hurricane and the preparedness of the people, the economic losses from a hurricane could be substantial or minimal as was the case with Hurricane Lenny.