



Impact of Tropical Storm Grace Survey Analysis

September 2021

Tropical Storm Grace passed through Jamaica on August 17, 2021 impacting businesses, households, infrastructures and livelihoods. The passing of the storm came with heavy rain and wind which caused severe flooding. Flooding caused restrictions in movement and access to main thoroughfares due to road blockage, early closure of businesses, and damage to physical infrastructures such as roads and buildings. The storm also resulted in temporary interruptions in the supply of basic amenities such as electricity and water in some areas. The Jamaica Productivity Centre conducted a survey to gather perspectives on how individuals were impacted by Tropical Storm Grace. Feedback was received from 89 respondents.

The survey instrument included five (5) questions and did not ask any information regarding the individual characteristics of the respondents. The questions were:

- How many hours did you miss from work due to Tropical Storm Grace?
- After how many days were you able to access the main road closest to your house?
- How much of your income was lost due to Tropical Storm Grace? (Please report the value in Jamaican dollars)
- How much have you spent to repair damage caused by Tropical Storm Grace? (Please report value in Jamaican dollars)
- How many hours were you without electricity due to Tropical Storm Grace?

Previous studies have explored the impact that weather may have on work absence. A recent study by Spencer and Urquhart (*International Working Paper 30, 2021*) used data from the Jamaica Labour Force Study and found that excess rainfall resulted in a marginal increase in the likelihood of being absent from work. They suggest that this is due to impassable roads and/or circumstances at home that may arise from weather conditions. Findings from the JPC survey seem to support the impact the weather may have on work absence. In the survey conducted by the Jamaica Productivity Centre, 57.3% of the respondents indicated that they missed work due to Tropical Storm Grace (Figure 1). These respondents reported missing an average of 11.2 hours from work, with one respondent reporting that they missed 96 hours. Most (72.5%) of the respondents who reported missing work, reported missing less than 8 hours or less from work.

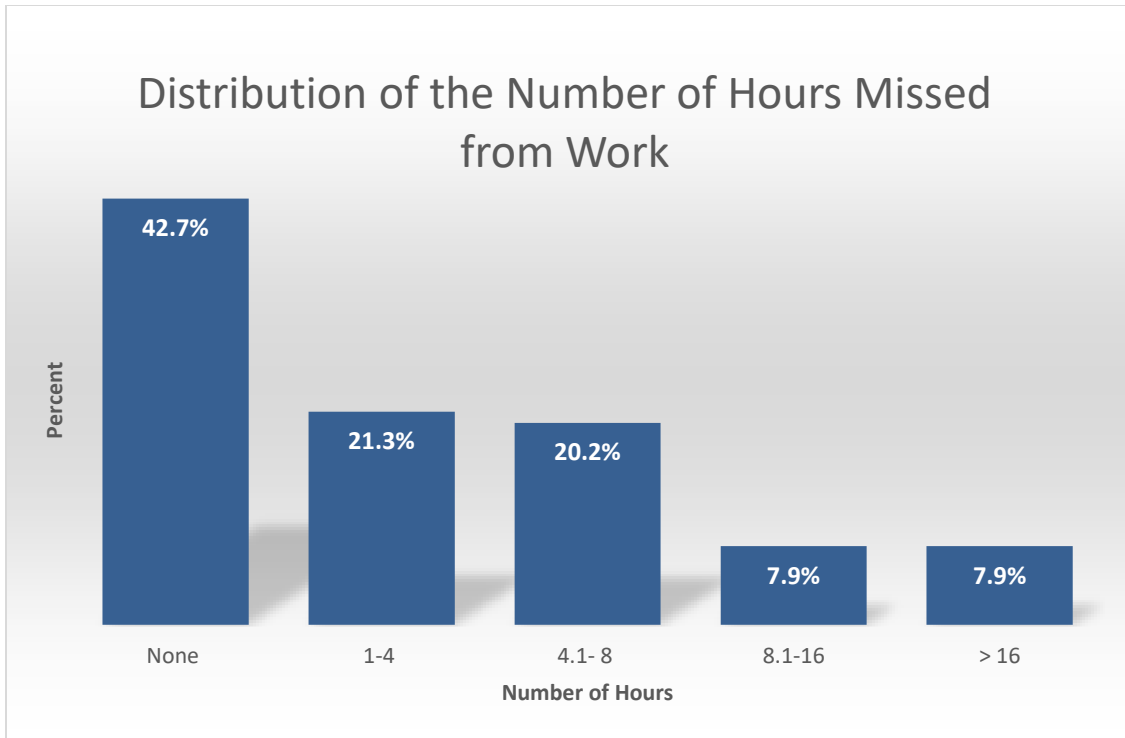


Figure 1: Distribution of the Number of Hours Reported Missed from Work

Approximately three quarters (76.4%) of the respondents reported that they experienced no hindrance to access to main roads following the storm, while 22.5% stated that main roads were accessible the next day and 1.1% were unable to access main roads for 2–3 days after Tropical Storm Grace (Figure 2).

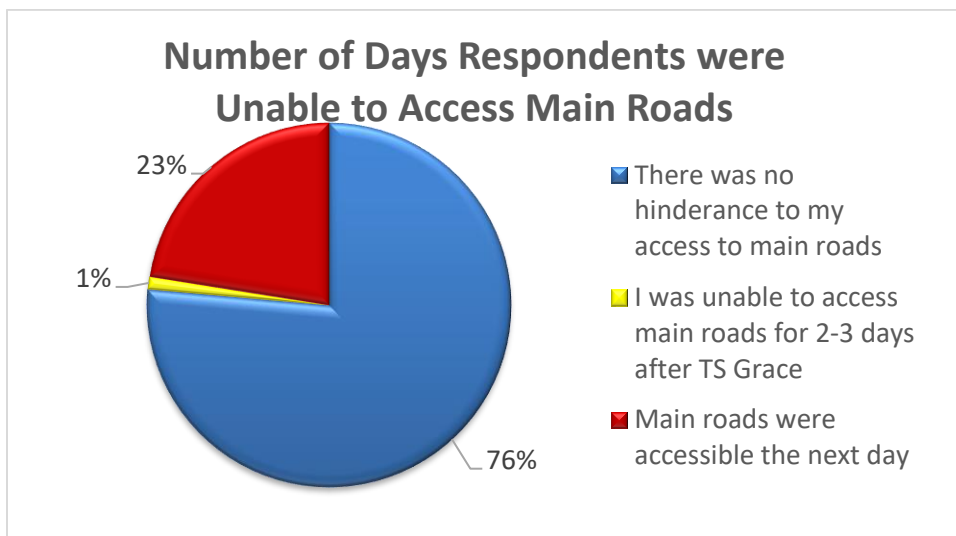


Figure 2: Percentage of the Number of Days Unable to Access Main Roads

Typical income loss due to bad weather results in the decline in output in productive sectors such as agriculture, livestock, fisheries, industry, commerce and tourism. In order to find out how much income was lost due to Tropical Storm Grace, the respondents were asked to report the value of their income losses. According to the 86 respondents who answered this question, 20.9% reported losses greater than zero. These respondents reported average income losses of \$2,602,028 due to Tropical Storm Grace, however, 72.2% of these respondents reported losses of less than \$100,000. For all respondents who reported income losses less than \$100,000, the average loss per hour was \$4,855.

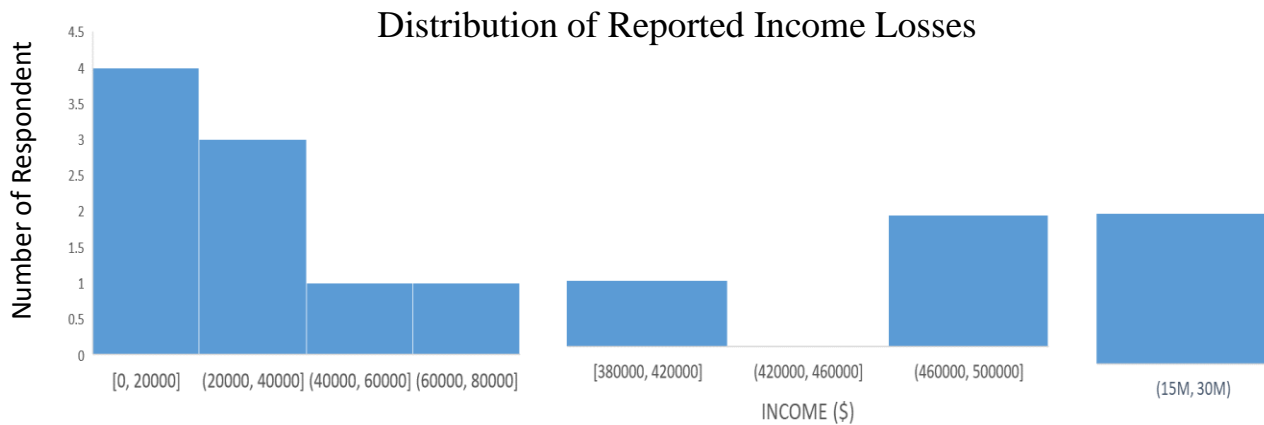


Figure 3: Distribution of Reported Income Losses

Damage can occur during the passing of tropical storms and hurricanes due to strong winds or even flooding. In Jamaica, residents in some areas where there is poor drainage as well as weak housing structures may have to do repairs after a storm. Respondents were asked to report how much they spent to repair damages due to Tropical Storm Grace. Of the 29.1% respondents who report spending on repairs, the average cost of repairs was \$124,840 with \$1,000,000 being the highest reported spending for repairs and \$2,000 being the lowest. The average spent on damage across all respondents was \$366,290.7

The final question was asked to gather feedback was how many days were persons out of electricity. Based on the responses reported, on average respondents were without electricity for 9.7 hours. There were 46% of the respondents who reported experiencing electricity outages due to the storm. The highest number of hours without electricity following the storm was reported as 168 hours.

References

Spencer, N., Urquhart, M. 2021. The impact of extreme weather on temporary work absence, ILO Working Paper 30 (Geneva, ILO).