

ThinkHazard!

Identify natural hazards in your project area
and understand how to reduce their impact



Barima Waini

Guyana



River flood



Earthquake



Cyclone



Drought



Coastal flood



Tsunami



Volcanic ash



Landslide

About Think Hazard!

Think Hazard! is a new web-based tool enabling non-specialists to consider the impacts of disasters on new development projects. Users of *Think Hazard!* can quickly and robustly assess the level of river flood, earthquake, drought, cyclone, coastal flood, tsunami, volcanic ash, and landslide hazard within their project area to assist with project planning and design.

Think Hazard! is a simple flagging system to highlight the hazards present in a project area. As such, a user is only required to enter their project location – national, provincial or district name. The results interface shows a user whether they require high, medium or low awareness of each hazard when planning their project.

Think Hazard! also provides recommendations and guidance on how to reduce the risk from each hazard within the project area, and provides links to additional resources such as country risk assessments, best practice guidance, additional websites. *Think Hazard!* also highlights how each hazard may change in the future as a result of climate change.

Think Hazard! was developed by the Global Facility for Disaster Reduction and Recovery (GFDRR) Innovation Lab, in partnership with BRGM (French geological survey), Camptocamp and Deltares. Hazard datasets have been provided by UNISDR, Impact Forecasting, SSBN, PRACFI, The World Bank, IVM-VU and USGS.

The tool code is open source, to encourage other users to adapt the tool to their needs. The code can be found at <https://github.com/GFDRR/thinkhazard>.

Developed by



In partnership with



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There is currently no data available on *drought, coastal flood, tsunami, volcanic ash* and *landslide* hazards in Barima Waini, Guyana. Please contact us at contact@thinkhazard.org if you have any dataset on these hazards in this area that you would like to share for use in *Think Hazard!*



Barima Waini

Guyana

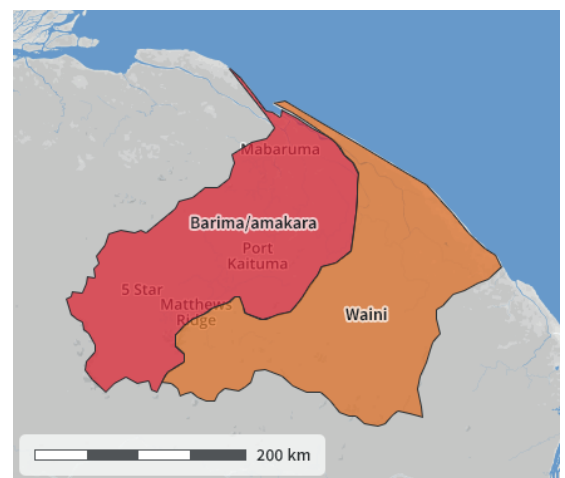
River flood

High hazard level

In the area you have selected, Barima Waini, flood hazard is classified as **high** according to the information that is currently available. This means that according to the currently available information, potentially damaging and life-threatening floods occur on average more frequently than once every 10 years. Therefore, based on this information, **the impact of floods on your project must be considered**. *Climate change impact: high confidence in more frequent and intense precipitation days in winter and an increase in the number of extreme rainfall events.*

Recommendations

- Find out if the exact project location is in a hazardous zone, e.g. by collecting local flood hazard information either from maps or by interviewing local governmental organisations.
- Review local drainage conditions and maintenance plans.
- In the case of classification of the asset as critical infrastructure, investigate the cascading effect of possible vulnerable network dependencies of the asset (e.g. power supply and computer and communication networks) that may lead to failure of the asset, even if the asset is not flooded.
- Investigate if local flood protection measures are installed. These may considerably reduce the flood hazard.
- Ensure that the project obeys to existing (if any) flood zoning regulations.
- Consider including an asset-specific flood protection, such as flood walls or well dimensioned drainage systems around the perimeter, during preparation phase. When a closed perimeter is planned, water-sealed gates should be considered as a no-regret option.
- If the project is in a hazardous zone, collect more specific flood hazard information about the exact project location. This could start by, e.g., performing a more in-depth flood hazard assessment in the area with more detailed models that include local protection levels.
- Consider resizing drainage systems to meet the demands of the asset.
- Consider another geographical planning, with other locations for infrastructure and assets, to avoid outside vulnerable locations.
- Ensure accessibility of the asset during a flood, especially if the asset is classified as critical infrastructure.



River flood hazard level

Barima Waini

■ High ■ Medium ■ Low ■ Very low

Data source: UNISDR, Impact Forecasting, SSBN, PRACFI, The World Bank

Further resources

- ▶ The Aqueduct Global Flood Analyzer. Note that this tool only provides information about river flooding (not coastal, pluvial or flash flooding)
- ▶ The Climate app, providing information on possible risk reducing intervention measures under site specific conditions
- ▶ Publications by the Global Facility for Disaster Reduction and Recovery (GFDRR)
- ▶ RIMAROCC, providing a risk management framework for road managers and operators dealing with climate change
- ▶ FLOOD PROBE, research on technologies for the cost-effective flood protection of the built environment



Barima Waini

Guyana

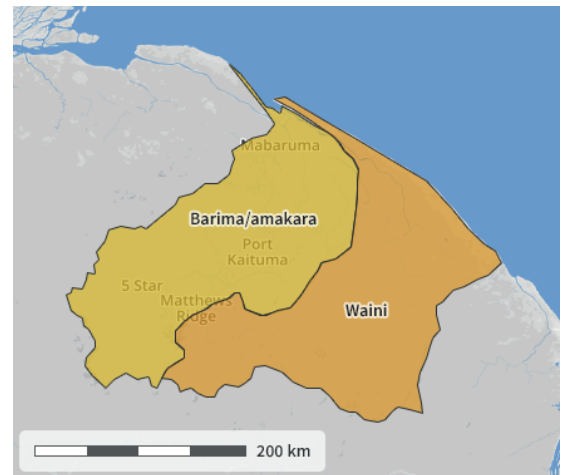
Earthquake

Low hazard level

In the area you have selected, Barima Waini, earthquake hazard is classified as **low** according to the information that is currently available. This means that there is more than a 2% chance of potentially-damaging earthquake shaking in the next 50 years. Based on this information, the impact of earthquake may be considered in different phases of the project, in particular during design and construction. **Planning decisions, project design, and construction methods should take into account the level of earthquake risk in your project.** Further detailed information should be obtained to adequately account for the level of risk.

Recommendations

- Consider the effect that the collapse or serious damage to buildings and infrastructure associated with the planned project could have on the local population and environment.
- Consider and follow the seismic regulations for the location of the project regarding planning and construction with respect to the types of construction and materials that are suitable in areas of seismic hazard and the quality of building materials and adherence to construction guidelines.



Earthquake hazard level

Barima Waini

■ High ■ Medium ■ Low ■ Very low

Data source: UNISDR, Impact Forecasting, SSBN, PRACFI, The World Bank

Further resources

- ▶ [Educational web resources on earthquakes and seismic hazard](#)
- ▶ [Publications by the Global Facility for Disaster Reduction and Recovery](#)



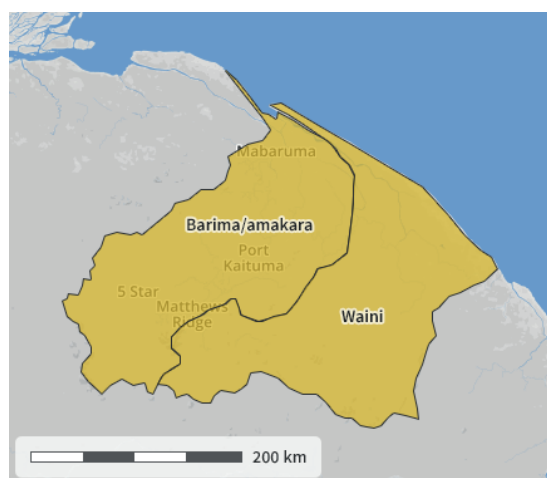
Barima Waini

Guyana

Cyclone

Very low hazard level

In the area you have selected, Barima Waini, cyclone hazard is classified as **very low** according to the information that is currently available. *Climate change impact: global average tropical cyclone wind speed and rainfall is likely to increase in the future, and the global average frequency of tropical cyclones is likely to decrease or remain unchanged. It is possible that the frequency of the most intense tropical cyclones will increase substantially in some ocean regions (IPCC, 2013).*



Cyclone hazard level

Barima Waini

High Medium Low Very low

Data source: UNISDR, Impact Forecasting, SSBN, PRACFI, The World Bank