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ESIA for an infrastructure project in Belize

Belize Climate Resilient Infrastructure Project

Type of impact assessment	Environmental Impact Assessment
Type of project/plan	Belize Climate Resilient Infrastructure Project: Component 1: Climate Resilient Infrastructure
Climate change related issues	Frequent heat waves, droughts, high intensity rainfalls, rising sea levels
Influence of the ESIA	Mitigation measures for adverse environmental effects

The government of Belize has developed a project to make the country's main roads resilient to climate change impacts. An ESIA assessed the impacts of the project on the environment. For important impacts, such as noise, wildlife disturbance and pollution, mitigation measures were developed.

Climate change in Belize

Belize is a small, middle income country endowed with the largest

barrier reef in the Americas and pristine tropical forests. Since its discovery of oil in 2005 and the

emergence of tourism, the economy has undergone a significant transformation. Belize is highly vulnerable to natural disasters, increased by the effects of climate change. The UNFCCC has identified it as one of the most vulnerable countries to the adverse impacts of climate change. More than 50% of the population and business centres are on or near the long, low lying coastline, mostly at sea level. Frequent heat waves, droughts, high intensity rainfalls, and rising sea levels are just some of the effects that make Belize sensitive to climate change.

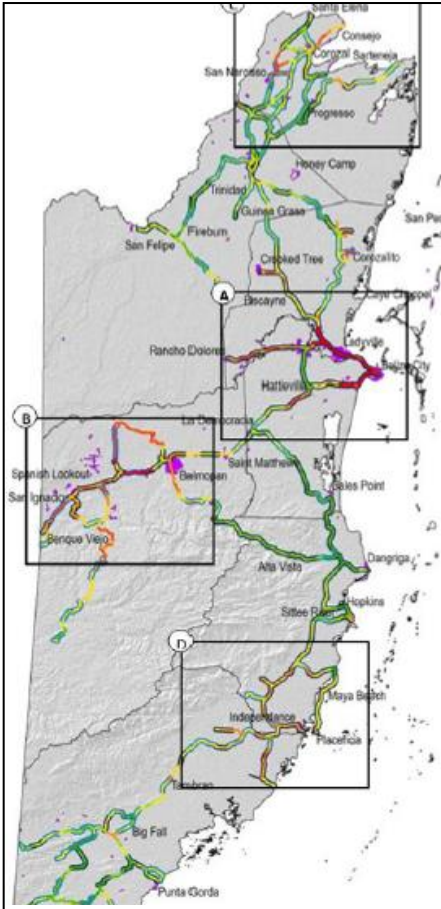
Assessing climate change risks for road infrastructure

The government of Belize developed a National Climate Resilient Investment Plan (NCRIP) to address the impacts of climate change on social and economic development. It seeks to fully integrate climate change adaptation, climate variability, and comprehensive disaster management into national development planning processes and actions. Under the NCRIP it has financed the Belize Climate Resilient Infrastructure Project (BCRIP). Critical roads will be made more resilient against flood risk and climate change im-

pacts, and the country's capacity to respond to crises and emergencies will be improved. Specific measures are the (re)-construction of critical road segments, drainage systems, and stream crossings that are susceptible to natural hazards such as flooding, and other climate impacts. The road networks prioritized under this initiative were selected due to economic importance, access of relief services to communities in the event of natural disaster events, and the benefits to poor populations and communities. They are situated in four geographical areas: A) The Greater Belize City area, B) West of Belmopan, C) Northern Area around Corozal, and D) Southern Area around Independence (see map).

Climate smart adaptation measures in the ESIA

The Environmental Management Framework (EMF) was prepared to meet World Bank safeguard policies. It provides a framework for development of ESIA's and Environmental Management Plans (EMPs). It includes a screening process for sub-projects and a delineation of the ESIA's and EMP's appropriate to the types and scales of the impacts. The screening mechanism ensures that



The four project areas

no significant degradation or conversion of natural habitat will occur.

Only existing primary and secondary roadways are used in this project. Activities under the project include hydrological improvements such as small-scale creek alignment,

straightening ox-bows, cut-and-fill, retaining walls along embankments, sizing of culverts for better water management along road networks, some replacement of culverts with small bridges; as well as road rehabilitation, road widening and shoulder improvement.

The ESIA for the project takes into consideration the mitigation measures for various construction impacts for the road rehabilitation activities. Some impacts such as noise, disturbance to wildlife, and pollution, have been accounted for and have appropriate mitigation measures. Overall, the outcome of the project will result in opportunities for environmental enhancement, improvements such as bridges, observation stations at bird congregation areas, reduction of wildlife mortality caused by vehicles, and speed bumps at wildlife crossing points.

Conclusion: Climate resilient infrastructure

The Belize Climate Resilience Infrastructure Project was approved in August 2014 with a closing date in 2019. The ESIA was conducted under the Environmental Management Framework for the four major roads

in Belize. At the conclusion of this project, more than 170,000 Belizeans will benefit from the improved climate resilient roads and capacity to manage climate risks and impacts as a result of the World Bank's US\$30 million approval. The project will provide the following benefits:

- Rehabilitate 30 km of roads and train 100 people on maintenance;
- Improve 12 bridges and culverts;
- Operationalise National Land Use Policy & develop 26 hazard maps;
- Train government staff in new flood tracking methods.

References

World Bank. 2014. Belize – Climate Resilient Infrastructure Project: environmental management framework. Belize; s.n.. <http://documents.worldbank.org/curated/en/2014/03/19517207/belize-climate-resilient-infrastructure-project-environmental-management-framework>.

World Bank. 2014. Belize – Climate Resilient Infrastructure Project. Washington DC: WB Group. <http://documents.worldbank.org/curated/en/2014/07/19914285/belize-climate-resilient-infrastructure-project>.

Characteristics of climate smart(er) project:

- Three-step approach applied ✓
- Climate smart(er) project design ✓
- ESIA increased commitment for project ✓

Climate smart(er) because:

- Better road systems will minimize impacts of climate change and natural hazards.
- Climate resilience is incorporated in national strategies for infrastructure.