

Integration of multi-hazard risk management into Volta River Basin Management Plans

By:

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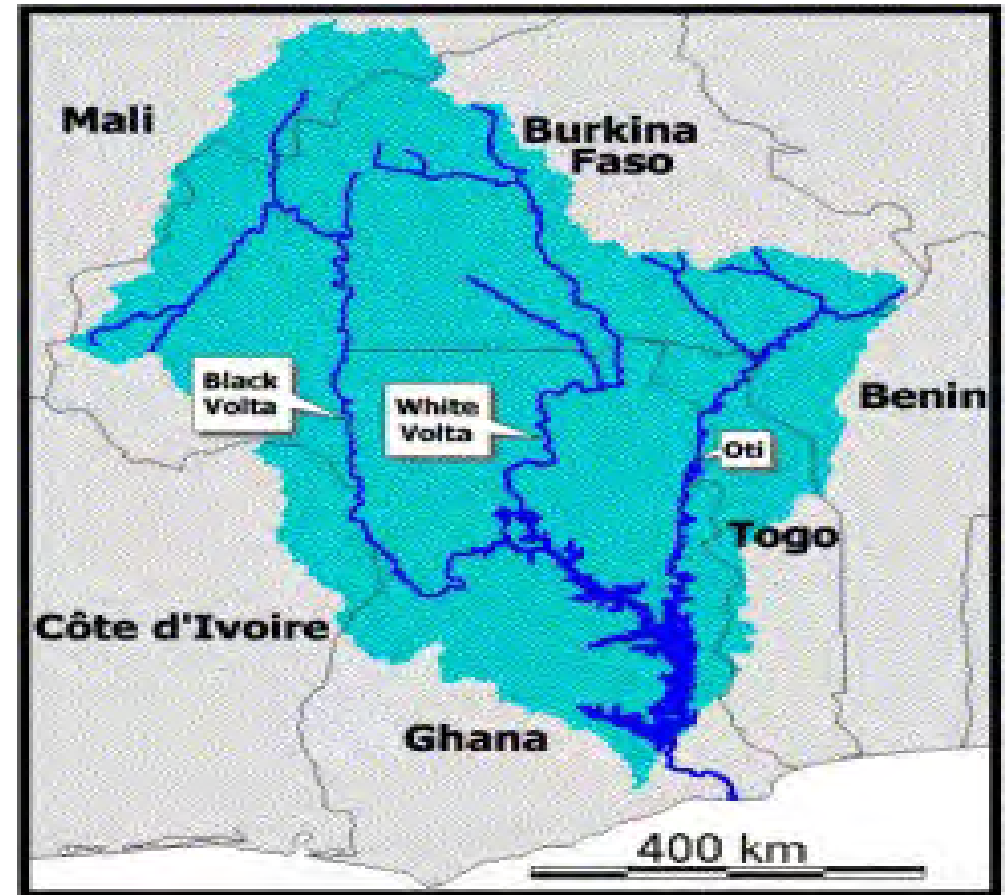
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Overview of the Volta River Basin

- Location: West Africa, covering parts of Ghana, Burkina Faso, Togo, Benin, Côte d'Ivoire, and Mali
- Characteristics: The basin is home to more than 29 million people, and it supports a range of economic activities, including agriculture, hydropower generation, and fishing



Source: Oguntunde et al. 2006

Overview of the Volta River Basin

Main Hazards:

- The basin is prone to a range of hazards, including **floods**, **droughts**, and landslides, which can have significant social, economic, and environmental impacts
- Ghana is one of the most exposed to risks from multiple disasters such as floods and droughts

Major floods in 2008 and 2010:

- The floods from late 2010 affected more than 200,000 people, mainly in the north;
- Most affected areas: White Volta, Black Volta, Oti River, settlements within the fringe of Lake Volta;



ACCRA FLOOD EARLY WARNING SYSTEM (ACCRA-FEWS)

June 3rd, 2015

- May 5th 2010
- June 22nd 2010
- February 24th 2011
- November 1st 2011
- May 31st 2013
- June 6th 2014
- July 4th 2014
- June 3rd 2015
- June 9th 2016
- October 6th 2017
- June 18th 2018



June 2015

MESTI Request to World Bank on damage assessment

Multi-Hazard Risk Management -1

Definition:

- an approach to identify, assess, and manage risks associated with multiple hazards

Importance/Benefits:

- improves preparedness and response to hazards
- reduces the potential impact of hazards on communities economies/livelihoods, and the environment
- reduces social and economic impacts, and
- enhances environmental sustainability

Multi-Hazard Risk Management -2

Components:

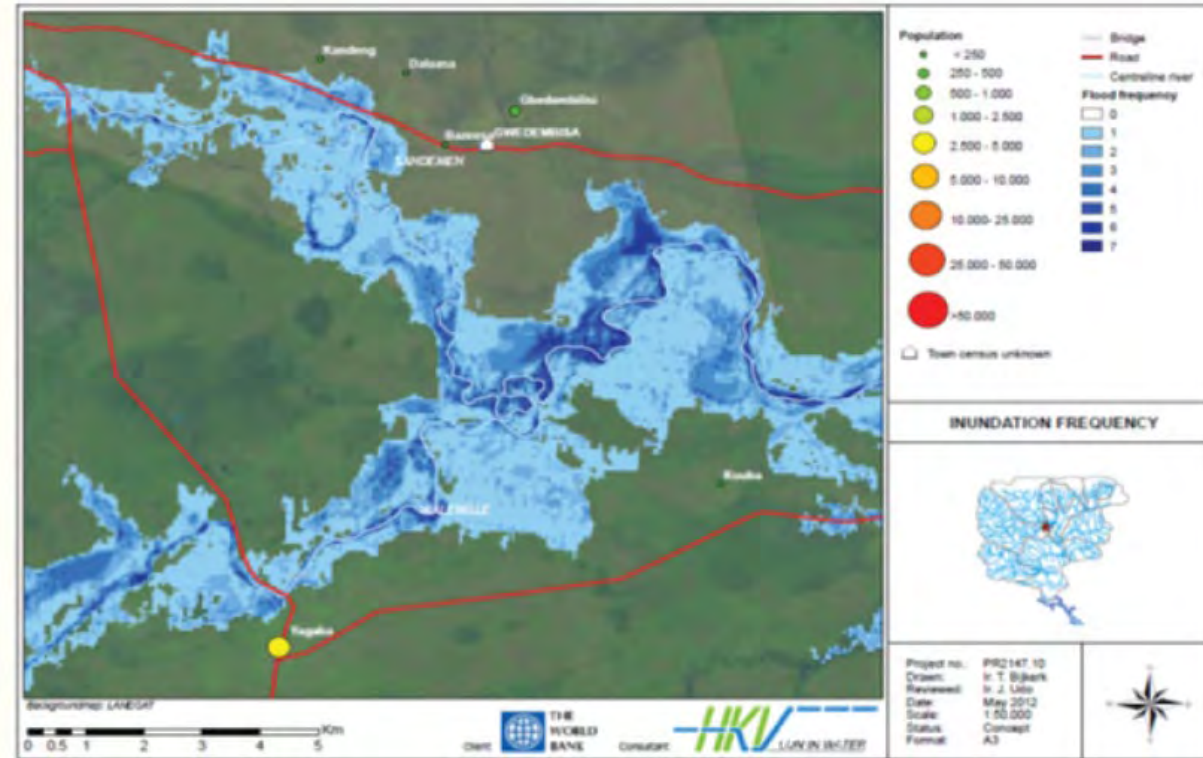
- hazard identification and assessment
- risk analysis
- risk reduction measures, and
- emergency preparedness and response.



Initiatives -1

1. Flood Early Warning System (FEWS) on the White Volta river and its tributaries in for forecasting (2012-2016):

- flood levels, inundation extent and duration maps of the 2007 – 2010 floods
- flood hazard and flood risk maps on flood extent and duration maps for floods (return periods of 2, 5, 10, 25 and 50 years)



Initiatives -2

2. Flood hazard assessment system for the Oti River in Ghana and Togo (2016 – 2019)
3. Drought Early Warning System (DEWS) in 2018
4. Integrating Flood and Drought Management and Early warning for climate change Adaptation in the Volta Basin (VFDM) in (2019 till date)



Damage assessment:

- 152 lives lost
- 53,000 directly affected
- 77,000 buildings destroyed
- USD 55 million damage
- USD 115 million cost of repairs



Some Challenges

1. Lack of multi-hazard risk management measures in existing basin plans
2. Inadequate collaboration among the six riparian countries to ensure effective management of risks
3. Inadequate funding into modern technology and early warning systems

Way Forward

- Revision of existing plans and integration of long-term and effective multi-hazard risk management measures into plans
- Increased collaboration among the six riparian countries to ensure effective management
- Increased investment in early warning systems and modern hydrological and meteorological systems and other adaptation measures to reduce the impacts of multi-hazard risks on the Volta Basin.
- Sustain capacity of national agencies for multi-hazard risk forecasting

Conclusion

Key takeaways:

- Multi-hazard risk management is essential in the context of the Volta River Basin and its basin management plans
- Its integration can bring significant benefits to the basin's communities, economies, and environment



Thank you

Reference

1. Oguntunde, Philip G., Friesen, Jan, van de Giesen, Nick, Savenije, Hubert H.G. Hydroclimatology of the Volta River Basin in West Africa: Trends and variability from 1901 to 2002, Physics and Chemistry of the Earth, Parts A/B/C, Volume 31, Issue 18, 2006, Pages 1180-1188, ISSN 1474-7065, <https://doi.org/10.1016/j.pce.2006.02.062>.