



The rationale of the PARADeS Project

Ghana is one of the countries in West Africa that is most challenged with flood disaster on annual basis leading to devastating impacts on humans, infrastructure, and the economy. In 2017, the country's northern and southern parts experienced devastating floods, which affected over 1 million people. Besides the annual floods, Ghana has experienced several flood-related cascading disasters, which destroyed critical infrastructures such as roads, drainage systems, houses, and bridges. To build resilience to flood disaster risk, the PARADeS project aims at strengthening Ghana's flood disaster risk management (FDRM) through an inclusive participatory approach.


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Project partners

 University of Bonn,
Department of Geography (U-BN)

 University of Freiburg,
Chair of Forest and Environmental
Policy (U-FR)

 University of applied sciences in
Magdeburg, Department of Water,
Environment, Construction, and
Safety (HS-M)

 Flood Competence Center
HKC Hochwasser
Kompetenz
Centrum e.V. Flood Competence Center e.V. (HKC)

 West African Science Service Center
on Climate Change and Adapted
Land Use (WASCAL)

 Water Resources Commission (WRC)

 National Disaster Management
Organization (NADMO)

Cooperation partner

 Maria Sibylla Merian Institute for
Advanced Studies in Africa (MIASA),
University of Ghana

The Federal Office of Civil Protection and Disaster Assistance (BBK) from Germany will share their experiences on critical infrastructure protection and integrated approaches to disaster risk management.

Project coordinator

Prof. Dr. Mariele Evers
University of Bonn, Department of Geography
e-mail: mariele.evers@uni-bonn.de

Project duration

July 2020 – June 2023



For more information about the PARADeS project please visit <http://www.ewa.uni-bonn.de/parades>

PARADeS

Participatory assessment of flood-related
disaster prevention and development of
an adapted coping system in Ghana





Objectives

The overall objective of the PARADeS project is to contribute to Ghana's national flood disaster risk management (FDRM) strategy, thus increasing the country's resilience to flooding disasters. The project is composed of a combination of research, development, and institutional strengthening activities. It integrates diverse information and data sources and develops collaborative scenarios and socio-technical tools in order to support coherent decision-making processes. A key aspect will be investigating and modeling cascading risk effects regarding critical infrastructure.

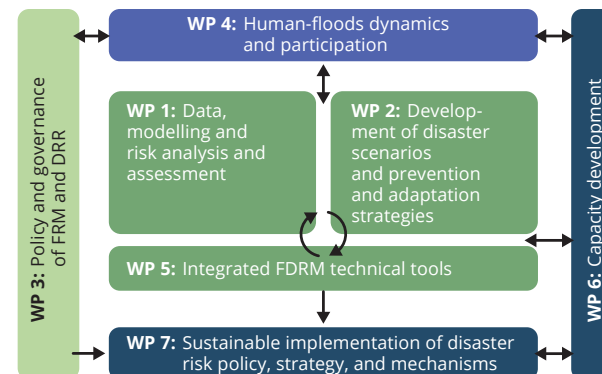
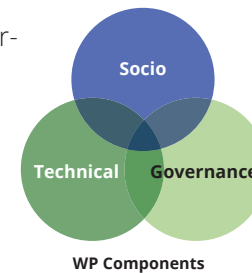
All processes and working steps are realized in a participatory way together with Ghanaian stakeholders. The end products are strengthening institutional and citizens' capacity through a series of activities on societal awareness and training of specialists, decision, and policymakers.

Technologically, PARADeS will produce a set of decision support tools to effectively disseminate vital information to citizens, researchers, and decision-makers to alleviate the impact of flooding. This will be demonstrated in three case study areas identified during the definition stage:

1. Accra – urban-runoff and coastal floods
2. Kumasi – urban-runoff and river floods
3. White Volta river basin – river floods

Work packages

Sustainable development of flood disaster risk management (FDRM) needs the understanding and integration of the social, technical, and governance perspectives. Based on intensive stakeholder participation and socio-technical tools the projects' work packages address these different perspectives and mutually exchange their findings to contribute to the development of sound FDRM measures. The work plan is composed of seven work packages (WP). All WPs are closely interlinked, with results and information passed on between them.



Key tangible outcomes

- provision of hydrologic, hydrodynamic, and agent-based models to generate new information, which will provide the basis to understand flood risk
- assessment of scenario-based flood hazard, vulnerability and risk, and flood hazards impacts on Critical Infrastructure (CI) with cascading disasters
- identification of feasible prevention and adaptation measures
- assessment of existing institutional settings and networks and policy options for participatory flood risk governance
- an integrated decision support system (DSS) tool named GaPS-fDSS for FDRM. The GaPS-fDSS consists of the Floodlabel for raising risk awareness and knowledge of prevention and ProMaIDes as a supporting tool for the FD-CRISys DSS to increase decision-makers' capacity to manage, prevent, and respond to hazards and impacts caused by floods to critical infrastructure systems
- strengthen the research and educational capacities of partner institutions, and to further develop the capacity of stakeholders, communities, specialists and practitioners
- integration of developed technologies and innovative infrastructures of PARADeS into the institutional systems
- a concept for a flood risk and disaster prevention center in Ghana