

Riverscope Rapid Assessment

Mphanda Nkuwa dam, Mozambique: -15.779394, 33.148329

Overall risk score: 81

An overall score of 81 is very high and translates into a median expected delay of 2.4 years and a maximum delay of 13.2 years. A 2-year delay exposes the project to a Net Present Value (NPV) loss of -21%, or \$1,345 million, assuming a budget overrun of 33% (average for large hydropower). In addition, 38,677 people live within 20km from the dam and are directly exposed to economic and/or physical displacement as a result.

Environmental risk assessment				
Indicator	Score			Comment
	Dam	River	District	
Species richness	67	63	69	This relatively high score suggests that Critical, Endangered and Vulnerable species are prevalent around the dam which increases the environmental risks for the project.
Global sediment flux	85	80	71	These high scores suggest that the dam could disrupt important sediment transfers, creating problems for biodiversity and food security, both up and downstream from the dam. These impacts on access to resources create considerable risks and merit further assessment.
Upstream drainage area	58	41		This score is above average which suggests the dam is likely to create some issues for water management upstream.
Inter-annual variability	32	42		This relatively low score suggests that weather and precipitation variability is unlikely to be a major issue in the immediate area of the dam and downstream. However, Mozambique is highly exposed to climate change, which may affect this picture.
Drought severity			69	This high score suggests that drought in the region poses a high risk for project. Climate change could exacerbate this risk which will severely reduce the capacity factor of the dam.
Protected areas			74	This high score suggests that protected areas are very prevalent in the area around the dam. This creates significant environmental and reputational risks. A priority for environmental assessments.
% cropland irrigated			100	This score is counter-intuitive, where the high number represents low levels of irrigated cropland. This suggests the area may have little experience with development and is higher risk as a result.
Minimum % water scarcity over the year	3	4	4	This very low score suggests that water scarcity is not an issue for Mozambique. Anecdotal evidence suggests that this may change as climate change impacts get worse.

Social risk assessment				
Indicator	Score			Comment
	Dam	River	District	
%poor and deprived: Improved Sanitation	100	100	100	This extremely high score suggests that access to infrastructure and services is low in the area. This increases the difficulty of local engagement and the likelihood of dispute.
%poor and deprived: Schooling	92	88		This very high score suggests that it may be difficult to convey information. Informed consent could therefore be hard to attain, replenish or verify. Assessments should consider engagement capacity.
%poor and deprived: Drinking Water	97	92		This very high score suggests that access to drinking water is low in the area. This creates risks for the project, which will have significant impacts on local water resources. This can spark dispute or deepen existing grievances.
Multidimensional Poverty Index	92			This very high score suggests that people living near the dam are extremely socio-economically vulnerable. This increases risk in the absence of proper consultations and consent.
Population vulnerable to poverty	47			This average score suggests that there are still some people on the verge of severe poverty in the area. Any large project in this area threatens these groups if they are not adequately supported, increasing the risk of dispute.
Conflict (Explosions, Remote Violence)			80	This high score suggests that there have been a large number of severe conflict events that are likely political. This social instability significantly increases the risk of conflict and operational disruptions.
Conflict (Protests, Strategic Developments, Riots)			79	This score emphasizes the high score above, suggesting a high incidence of social unrest and dispute in the area. This raises the risk of project opposition in the absence of proper community engagement and a clear demonstration of project benefits.
Population density		27		These relatively low scores are counter-intuitive, suggesting that people do live in the area of the dam. More populated areas are associated with lower risk.
Night lights		33		