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Impact of the Beles hydropower project on downstream rural livelihoods (northwest Ethiopia)

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Downstream impacts of large hydropower projects still very often are not properly assessed, despite public awareness of unintended impacts (in the 1980s) and well-developed international standards (in the 2000s). Impacts of (hydropower-regulated) interbasin water transfers (IBWTs) are considered self-evidently positive, although they can have far-reaching consequences for hydrogeomorphological systems and consequently river-dependent communities. In this study, the downstream direct and indirect impacts of the Ethiopian hydropower-regulated Tana-Beles IBWT (Lake Tana is operated as a reservoir) are evaluated in an interdisciplinary way. The components of the framework of rural livelihoods are considered and changing contexts, resources' availabilities and livelihood strategies are analysed. Mixed methods are applied, combining hydrogeomorphological field observations, GIS analyses, scientific literature, policy documents, and semi-structured interviews with local people and local to federal authorities. Results show that the IBWT drastically increased the Beles river's discharge (with an average release of + 92 m³ s⁻¹ at the outlet; *2 in rainy season and *12 in dry season 100 km downstream of the water release) and introduced dangerous situations for local communities (over 250 people were taken by the floods and drowned in the river). River bank erosion resulted in the uncompensated loss of farmland (163 ha) and the establishment of large-scale commercial farms increased the pressure on land and led to the impoverishment of displaced communities (4310 households). The project was implemented top-down, without any transparency, benefit sharing or compensation for external costs. This stresses the importance of downstream interdisciplinary impact assessments and highlights the need for decent in-depth ex post-analyses of hydropower projects in order to increase their sustainability and get the support from the wider public. Environmental impact assessments should be taken seriously and cannot be considered a formality (the EIA of the Beles project was not available). In Ethiopia and in many developing countries, the hydropower industry is booming. Although dams and IBWTs can be the best solution for water-related problems in specific contexts, national development goals (such as the expansion of the electricity network) should not be at the expense of rural livelihoods.