Livelihood activities based on seasonal river flow regime

Pwalugu communities rely heavily on the seasonal flooding regime of the White Volta River. Flooding peaks in August/early September during the wet season. Production and retrieval of any benefits is not simultaneous. This calendar of livelihood activities mapped to river flow shows the way in which the Pwalugu area benefits from natural infrastructure (seasonal flooding and fertile floodplains) as well as built infrastructure benefits from the upstream Bagré dam (in Burkina Faso), which regulates flow to reduce extreme flooding and provide baseflow during the dry season.

**LIVESTOCK WATERING AND GRASSING**
In the dry season livestock grazes near houses and water is collected from the ponds.

**FLOOD RECESSION AGRICULTURE**
Farmers depend on the residual soil moisture from the floodwater that deposits fertile sediments, to farm crops on the floodplain.

**RIVER FISHING**
Some fish migrate upstream to breed and spawn. Year round constant flow in the river allows the households who own a canoe to fish on the river.

**POND FISHING**
Fishing is dependent on the filling of the ponds through annual flooding. Local by-laws ban fishing between September and March. This helps to sustain the fish population.

**LOCAL-MANAGED IRRIGATION**
During the dry season, the farmers who can rent a pump and buy diesel practice informal irrigation, this activity is highly dependent on dry season flows (provided for by Bagré Dam).

**DRINKING AND DOMESTIC USE WATER**
During the wet season boreholes are the main source of water for drinking and domestic purposes. In the dry season water is collected directly from the White Volta River.

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**CURRENT FLOW REGIME**
(after the Bagré dam)

The operation of the Bagré dam provides additional dry season flows supporting year-round river fishing and drinking water supply as well as water for small scale informal irrigation. Current operation of the Bagré dam still enables the livelihood activities derived from natural infrastructure. Cumulatively over a year Pwalugu communities earn up to 1.37 million USD.

**POSSIBLE FUTURE flow regime after the Pwalugu dam**
Maximising energy production and large scale irrigated farming will reduce seasonal flooding and in turn the income generated from flood-associated livelihood activities. Cumulatively over a year this scenario would reduce Pwalugu communities income by 286,000 USD.

**1.087,300 USD**
the contribution per year to the Pwalugu communities

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**POSSIBLE FUTURE**

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**1.087,300 USD**
the contribution per year to the Pwalugu communities

Valuing the average annual benefits derived from river flow *

* Values in 2015 USD per year

**1.48 million USD**
the contribution per year to the Pwalugu communities

**2015 USD**

**Values in 2015 USD per year**

**CURRENT FLOW REGIME**

**1.373,600 USD**
the contribution per year to the Pwalugu communities

**POSSIBLE FUTURE**
flow regime after the Pwalugu dam

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