Food and Agriculture Organization of the United Nations

Upper Kafue River Watershed

Forests, freshwater, and fisheries providing food security and sustainable livelihoods

Obeservations from Riparian Communities

(Based on 171 interviews of community members in the Kafue River basin)

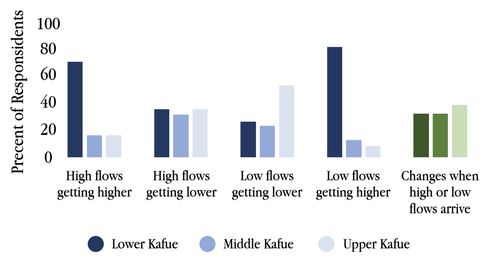
The vast majority of respondents (**71%**) understand and agree that there is a connection between forests and fish.

Changes over the past 10 years in forests, freshwater flows, and fish were described as follows:

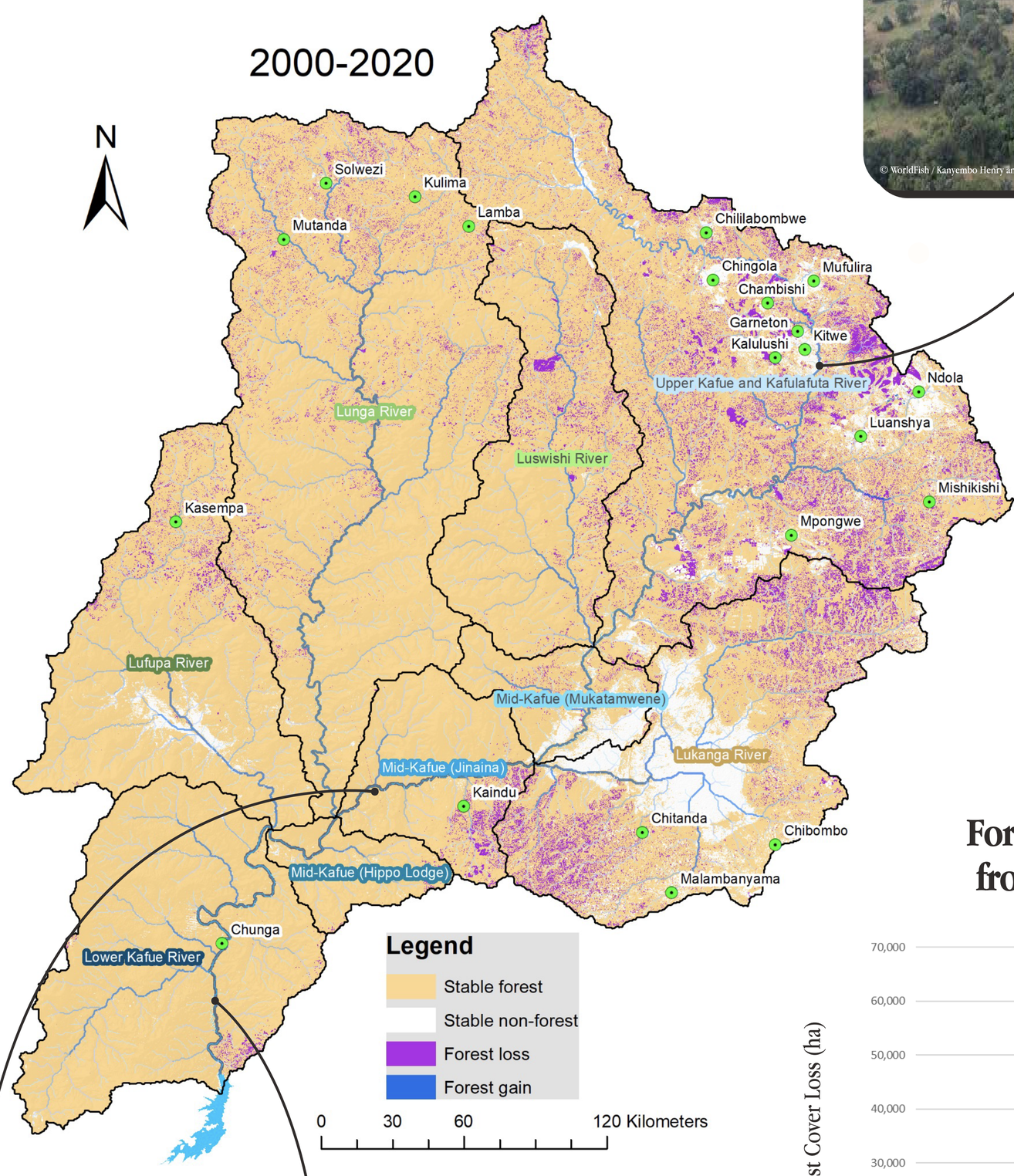
Forests: 44% of respondents reported reductions in specific tree species from local forests;

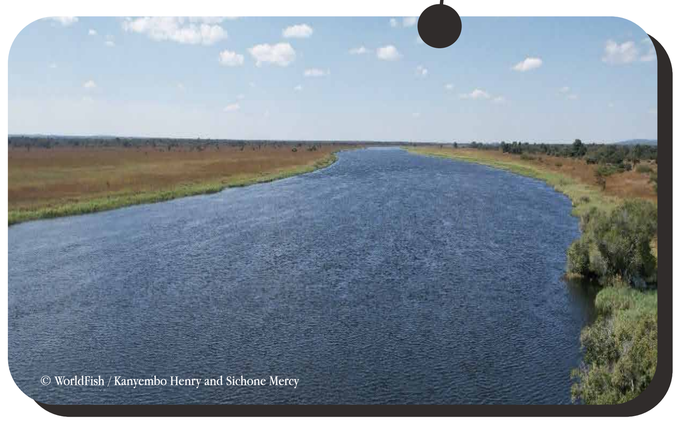
Forests: 25% of respondents travel longer distances to gather firewood;

Freshwater: Respondents observed changes in river flows;

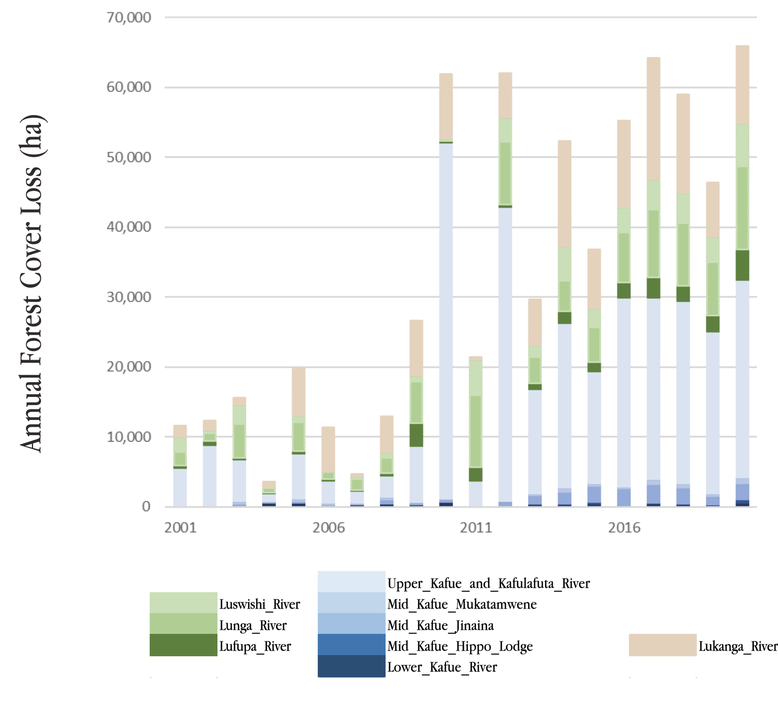


Fish: 89% of respondents described a reduction in fish consumption.



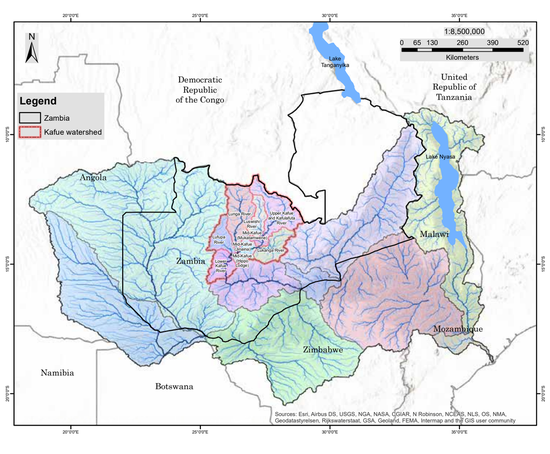


Forest cover change from 2000 to 2020



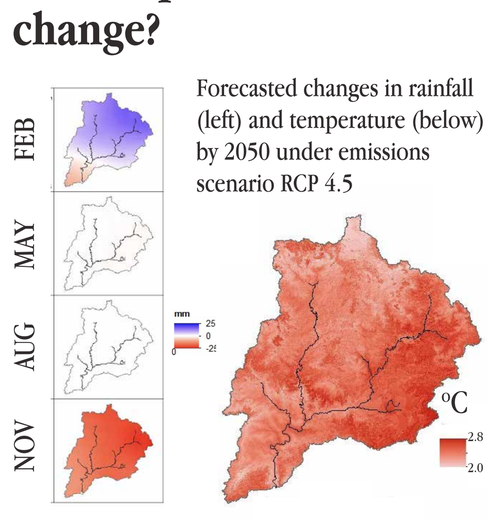
- There has been increasing forest cover loss over time.
- The most forest cover loss has occurred in the upper parts of the watershed (lightest colors) and in the sub-watershed that drains into the mainstem from south (light brown).
- There has been little forest cover loss in the Lufupa River (dark green) or in the other watersheds to the north (green).

Where is the Kafue River Watershed?



- The Kafue River is in Zambia and is part of the Zambezi River watershed.
- The area of analysis (outlined in red) is the free-flowing section above the reservoir formed by the Itezhi-Tezhi Dam.

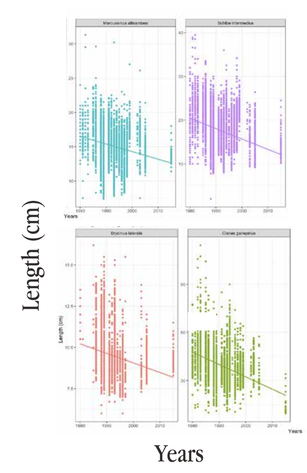
How are temperature and rainfall predicted to change?



Forecasted changes in rainfall (left) and temperature (below) by 2050 under emissions scenario RCP 4.5

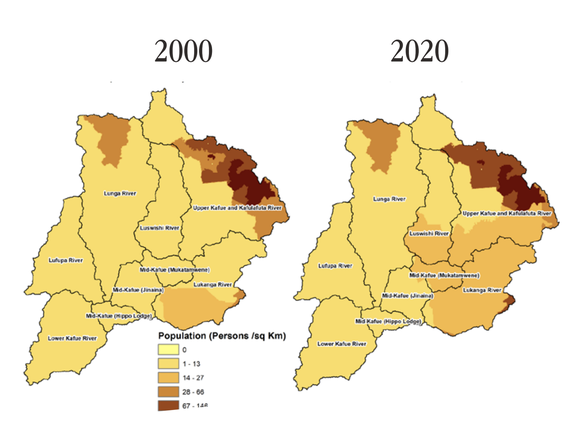
- In some times of the year, e.g. February, increases in precipitation are expected in some parts of the watershed.
- In other times of the year, e.g., November, only decreases in precipitation are expected with the largest decreases in the Upper Kafue and Kafulafuta Rivers.
- Increases in temperature are expected across the whole watershed with slight differences in particular areas of the watershed.

Have fish captures changed over time?



- Over time and for four indicator species, fewer large fish are caught.
- Data source: Department of Fisheries fish monitoring surveys on the Kafue Flats.

How has human density changed?



- The highest human population density is in the area around Kitwe, in the headwaters of the Kafue River.
- Human population has increased from 2000 to 2020 in the areas where human population was highest in 2000. Forest loss (above) is also highest in these areas.
- Human population density remained relatively unchanged downstream and in the western parts of the watershed.

Map data sources: Hansen et al. 2013/2020. Global Forest Change (GFC) https://earthenginepartners.appspot.com/science-2013-global-forest/download_v1.7.html; NASA Socioeconomic Data and Applications Center (SEDAC) https://sedac.ciesin.columbia.edu/; United Nations Geospatial. 2020. Map geodata [shapefiles]. New York, USA, United Nations https://www.un.org/geospatial/; WWF HydroSHEDS Basins https://hydrosheds.org/images/inpages/HydroBASINS_TechDoc_v1c.pdf.

CIFOR · World Agroforestry · WorldFish