

Evaluation on the influence of size on the nutrient density of Zambian fish species

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Introduction

- Poor women and children in Zambia are often quantitatively and and/or qualitatively malnourished.
- Small dried fish are often the only animal derived food of poor women and children in Zambia (Figure 1).
- Producers and sellers often concentrate on bigger fish species, which are seen as more valuable.
- Nutrient contents of Zambian fish are not studied well enough to know which species are better to prevent nutrient deficiencies.



Figure 1: Zambian street vendor selling small dried fish at a local market in Kasama, Zambia.

Methodology

- Fish was sampled at local markets, directly from fishermen, local aquaculture and state searching sites.
- Based on interviews with vendors and fishermen samples were prepared according to local customs.
- Samples were analyzed for B-vitamins, dietary minerals and heavy metals, as well as protein, fat and fatty acid composition.

Results

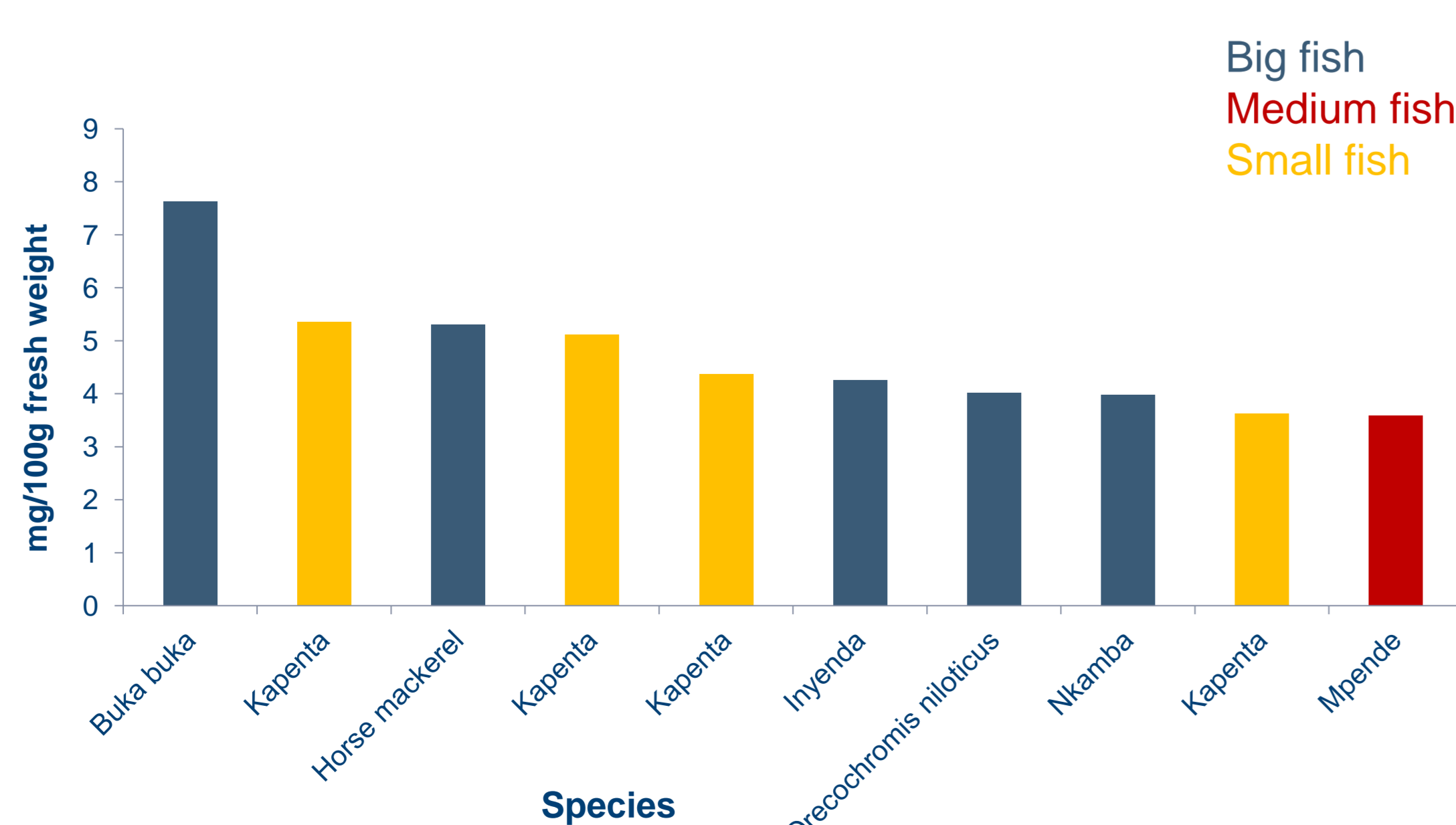


Figure 2: Samples with the highest niacin content of all analysed samples. In general contents of niacin in the analysed fish samples were close to reaching the recommendations of 16 mg niacin/day.

Results

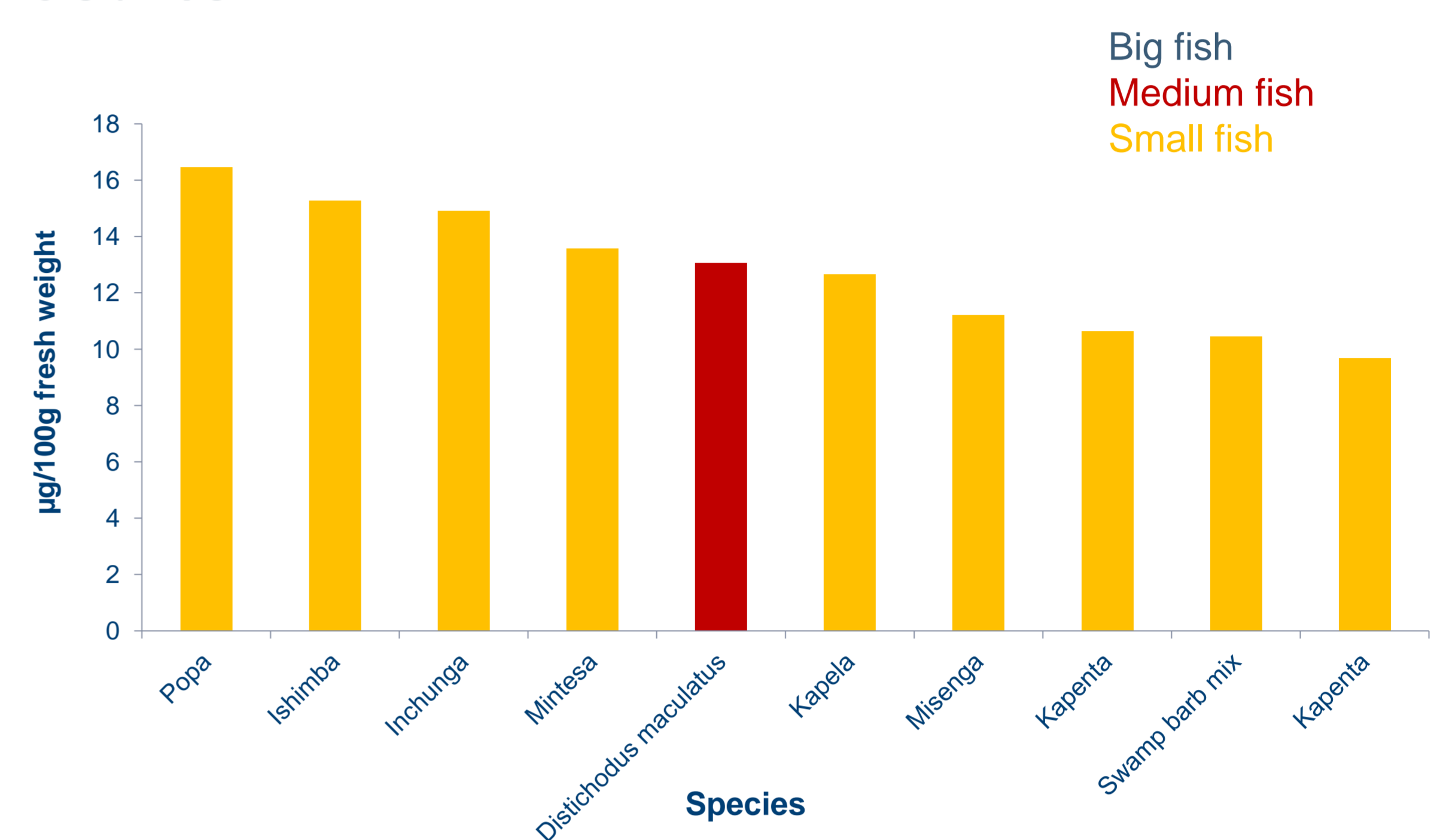


Figure 3: Samples with the highest content of vitamin B12 of all analysed samples. Although all fish samples were close to reaching or exceeding the recommendations of 2.4 µg vitamin B12/day, small fish had the highest mean content of vitamin B12.

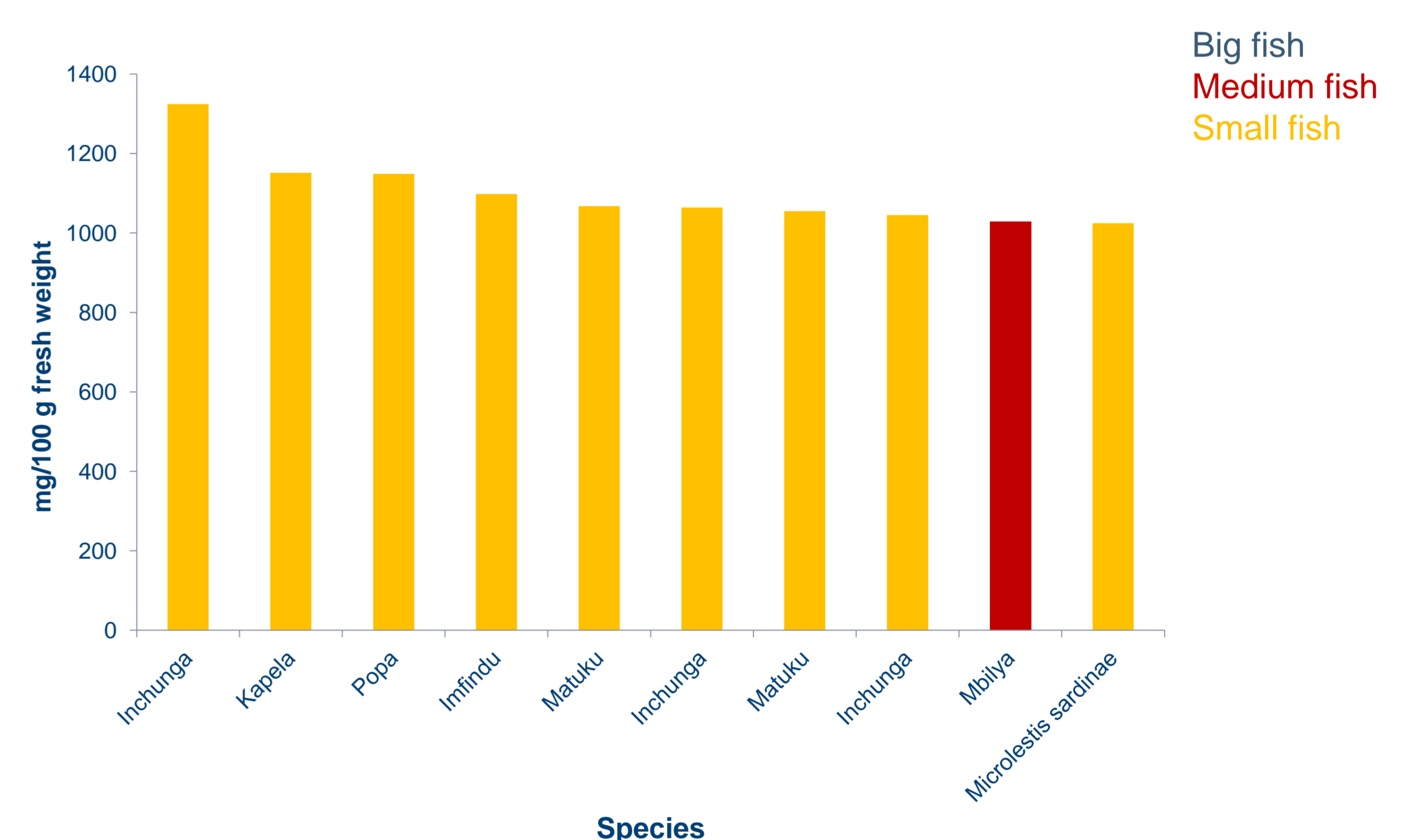


Figure 4: Samples with the highest calcium content of all analysed samples. In general calcium content found in small fish was about 16 times higher than in big fish and about 3 times higher than in medium fish. RDA of calcium: 1300 mg.

Conclusion

- Small fish species can play an important role in fighting Hidden Hunger with respect to Vitamin B12, Niacin and Calcium.
- Big fish species are mainly interesting as a protein source.
- Overall samples are safe for human consumption.
- Influence of sample site/processing on nutrient content need further evaluation.

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