Metallic trace elements in sea fish of Morondava and the sanitary risks.

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HEPMAD 18 – 10th High Energy Physics International Conference

Antananarivo, Madagascar

(6 - 11 September 2018)

PLAN

I. INTRODUCTION

II. MATERIALS AND METHODS

III. RESULTS AND DISCUSSION

IV. CONCLUSION

I. INTRODUCTION

➢ **Contamination of trace elements in food**

⟶ risk to human (and/or animal) health.

Fishing activities ⟶ threatened by the release of naturally occurring toxic chemicals such as metals (arsenic, cadmium, mercury and lead)

➢ **Study of the problem of fish contamination** ⟶ essential

➢ **Overalll objectif: to contribute to investigations on the determination of the sanitary risks of the pollutants such as trace metals .**

➢ **Specific objectives**

✓ To carry out the study on the Morondava site (the West coast of Madagascar)

✓ to determine the levels of some trace metals in fish species

✓ to evaluate the possible risks of human consumption.

II. MATERIALS AND METHODS

II.1. Sampling site

Sampling campaign carried out at Morondava, in western Madagascar

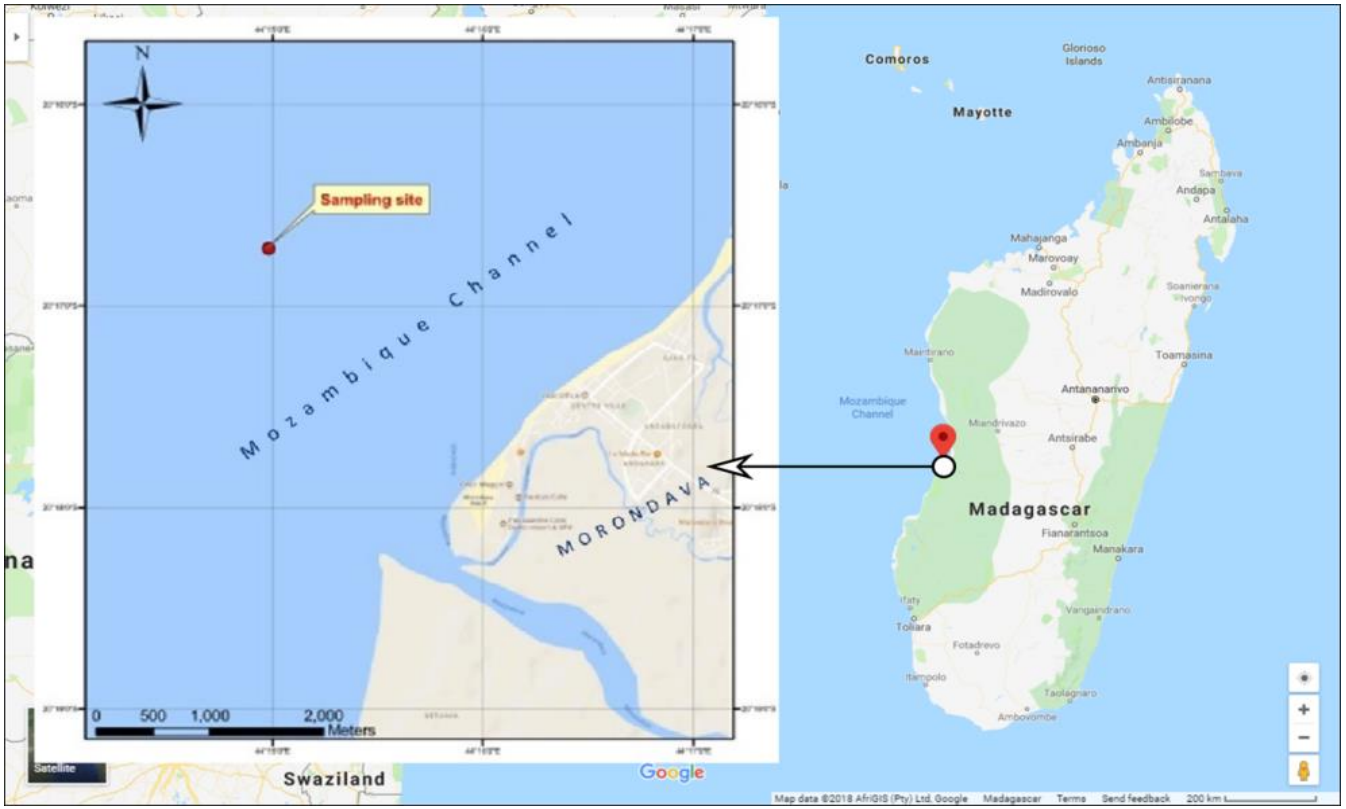


Figure 1. A map showing the sampling site at the edge of Mozambic Channel

II. MATERIALS AND METHODS (Cont.)

II.2. Sampling campaign

Figure 2. Fish sampling in the Morondava sea and Collect of fish species

II. MATERIALS AND METHODS (Cont.)

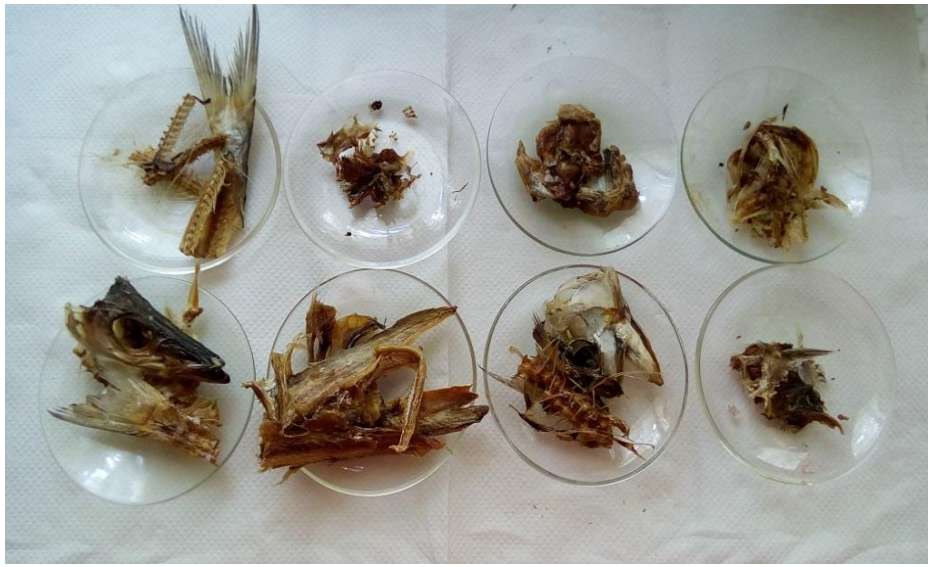
II.3. Sampling collection

Eight (08) fish species collected in November 2017.

Figure 3. Photos of eight species of fish from the Morondava Sea

II. MATERIALS AND METHODS (Cont.)

II.4. Sample preparation for determination of trace metals



meats, bones and bronchitis separated

Figure 4. Fish preparation at INSTN-Madagascar laboratory

II. MATERIALS AND METHODS (Cont.)

II.5. Measurements and Data analysis

Figure 5. X-Ray Fluorescence analysis at INSTN-Madagascar laboratory

III. RESULTS AND DISCUSSION

III. 1. Determination of arsenic concentrations in the meats, bones and bronchitis of sea fish

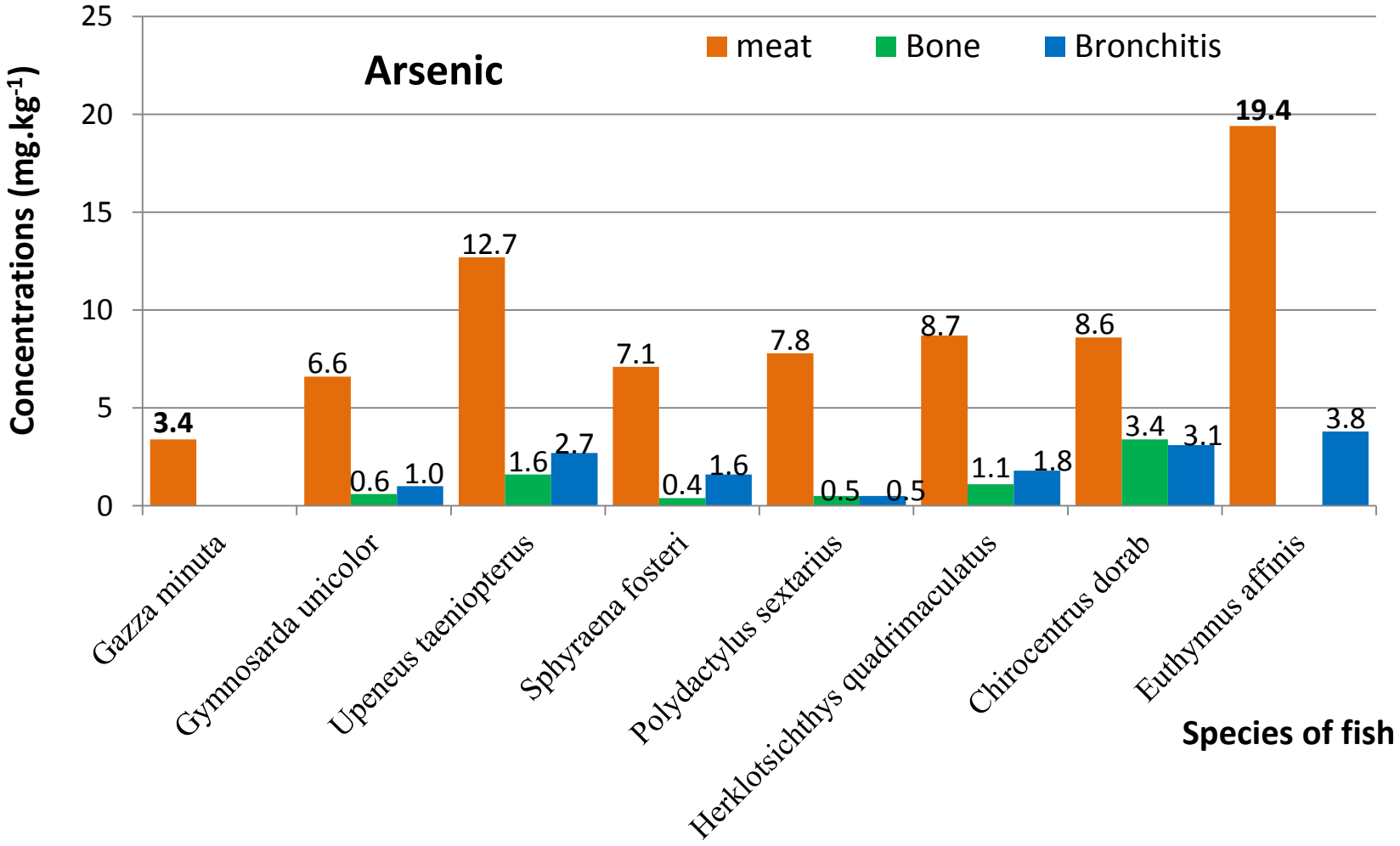


Figure 6. Arsenic concentrations in the meats, bones and bronchitis of fish species

III. RESULTS AND DISCUSSION (Cont.)

III.2. Determination of cadmium concentrations in the meats, bones and bronchitis of sea fish

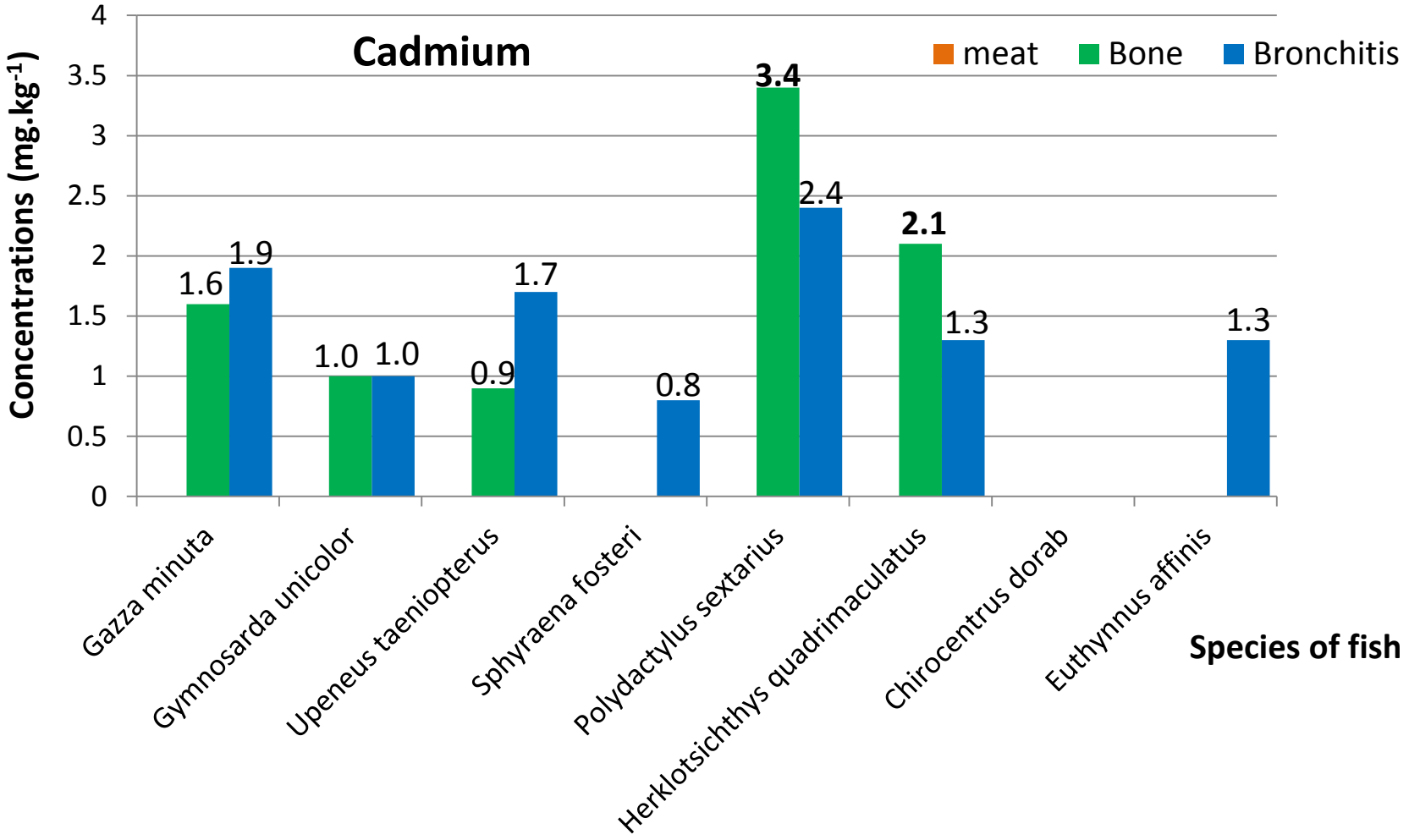


Figure 7. Cadmium concentrations in the meats, bones and bronchitis of fish species

III. RESULTS AND DISCUSSION (Cont.)

III.3. Determination of mercury contents in the meats, bones and bronchitis of sea fish

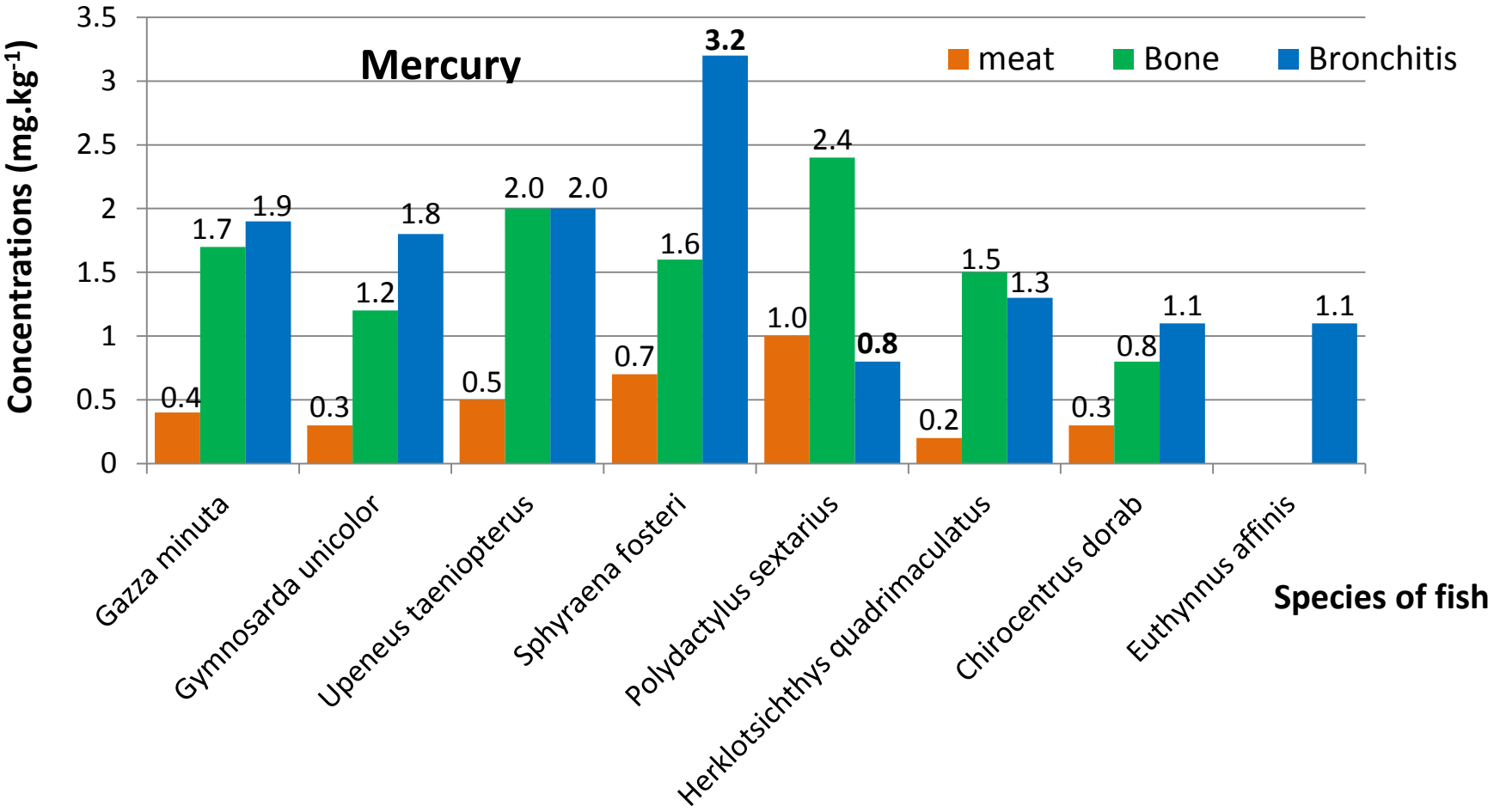


Figure 8. Mercury contents in the meats, bones and bronchitis of fish species

III. RESULTS AND DISCUSSION (Cont.)

III.4. Determination of the concentrations of lead in the meats, bones and bronchitis of sea fish.

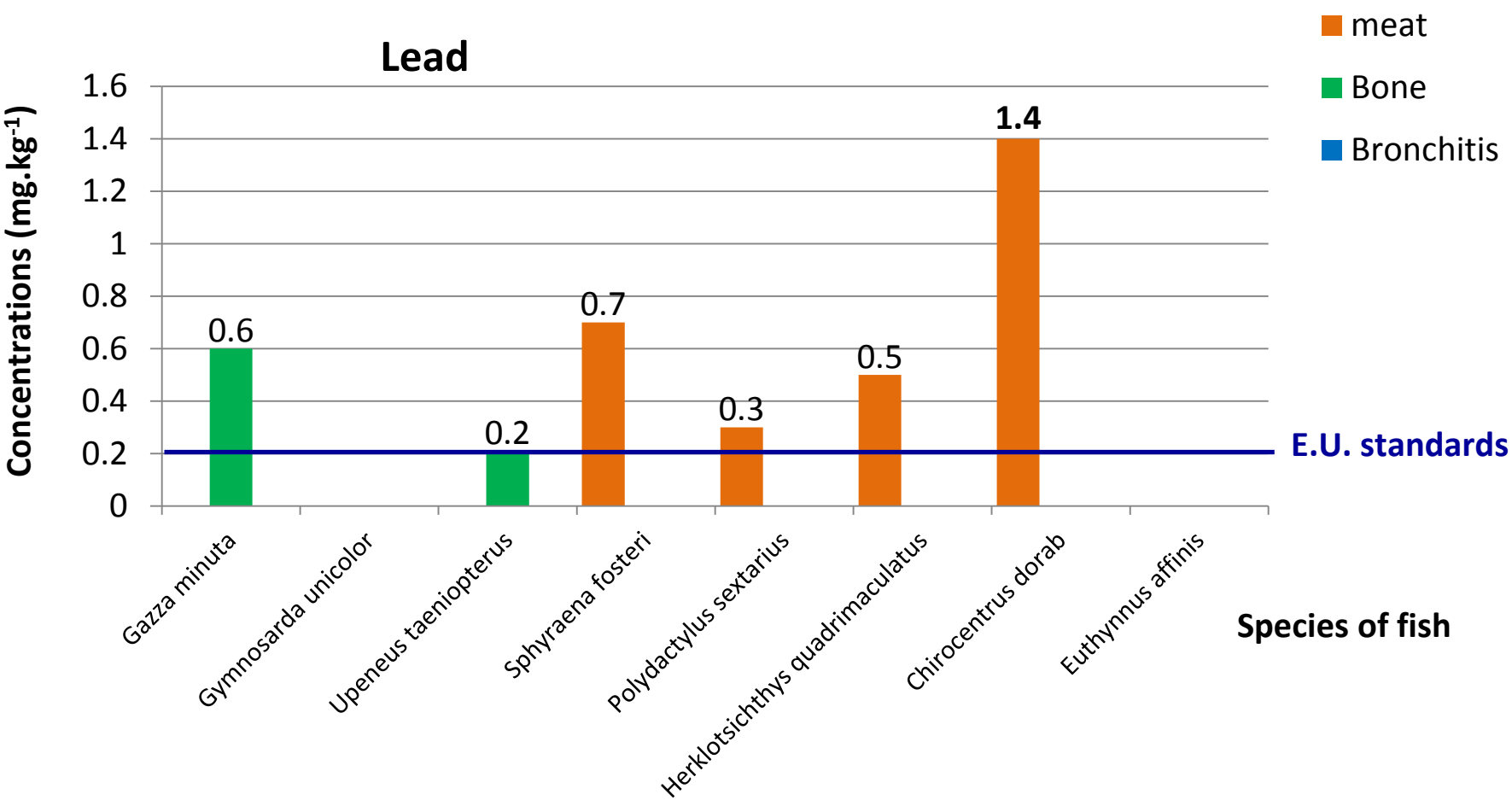


Figure 9. Concentrations of lead in the meats, bones and bronchitis of fish species

IV. CONCLUSION

In the trace metal analysis, arsenic, cadmium, mercury and lead

⟶ studied

- **Lead** ⟶ * contents compared to European Union (EU) standards

  * **origin of "lead poisoning": intoxication due to its accumulation in organs**

- **High concentration of arsenic** ⟶ **Inactivate of human body**

RECOMMENDATIONS

- **Control the spill of products that may pose a risk to the environment and/or for health**

- **Manage the risks posed by trace metals by using a series of regulatory and voluntary control measures that target certain sources of emissions.**

- **In case of spills of toxic pollutants ⟶ Notify the competent authorities**

Future investigations ⟶ A study of the other possible pollutants.

ACKNOWLEDGEMENTS

- Organizers of HEPMAD 18 - 10th High Energy Physics Intenational Conference, Antananarivo, Madagascar.
- International Atomic Energy Agency (IAEA)
- University of Antananarivo and Faculty of Sciences
- Co-authors of this work
- All INSTN-Madagascar Staff

THANK FOR YOUR ATTENTION