Data Article

Data set on Outcomes of Participatory Fisheries Management in Zambia's Mweru-Luapula Fishery

Ketiwe Kaluma*, Bridget Bwalya Umar¹

University of Zambia, School of Natural Sciences, Department of Geography and Environmental Studies, P. O. Box 32379, Lusaka, Zambia

ARTICLE INFO

Article history:
Received 7 February 2021
Revised 7 May 2021
Accepted 11 May 2021
Available online 21 May 2021

Keywords:
Common pool resources
Compliance
Fisheries committees
Ostrom's design principles

ABSTRACT

A survey¹ was conducted with 64 respondents to examine the outcomes of participatory fisheries management in Mweru-Luapula fishery, northern Zambia [1]. The survey was complemented by five focus group discussions (FGDs) and two key informant interviews. The study evaluated the performance of Village Fisheries Management Committees (VFMCs), analysed participation of fishers in management activities and assessed fishers' compliance to fisheries regulations. Ostrom's Eight Design Principles and White's Typology of Interests were employed in the analysis of VFMC Performance and Fishers' participation respectively [2,3]. Descriptive statistics and content analysis were employed to analyse the quantitative and qualitative data respectively. Results show inadequate funding to the Department of Fisheries; capture of benefits and VFMC positions by local elites and weak enforcement of fisheries regulations. A nominal form of participation characterizes the co-management system and resource users are not engaged in decision-making. Besides inconsistent patrols by VFMCs and Department of Fisheries, results further show low compliance to the seasonal fish ban and persistent use of illegal fishing practices within the fishery.

DOI of original article: 10.1016/j.heliyon.2021.e06083
* Corresponding author.
E-mail address: ketiwekaluma@gmail.com (K. Kaluma).
¹ The survey instrument is available as supplementary content in the research publication by Kaluma and Umar (2021) [1].

https://doi.org/10.1016/j.dib.2021.107161
2352-3409/© 2021 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/)
## Specifications Table

| Subject | Environmental Science |
|---------|-----------------------|
| Specific subject area | Fisheries governance, decentralization, local participation |
| Type of data | Tables, Image, Chart, Graph, Figure |

### How data were acquired
- **Instruments:** A questionnaire was used for the survey with 64 respondents; interview guides for the two key informant interviews; discussion guides for the five focus group discussions (FGDs).
- **Data format:** Microsoft Excel (Raw data)
- **Parameters for data collection:** Mweru- Luapula Fishery was selected as a case to study co-management in an important fishery. The rich history of collective action by local fishers on Mweru- Luapula fishery provided a basis for the study [4]. Kabuta fishing camp, situated in Nchelenge district was selected because it is one of the largest fishing camps with a large host of fishers in the fishery. Village Fisheries Management Committees and Fishing Associations provided an entry point to study local institutions crafted for fisheries co-management.
- **Description of data collection:** A total of 64 interviews were conducted through a door to door survey in the respective villages. Respondents were selected through convenient sampling. Members of the village fisheries management committee and fishing association facilitated this process. The questionnaire has been provided as a supplementary file.
- **A total of five focus group discussions (FGDs) were conducted to supplement the survey data; two with fishers, two with Fishing Association (FA) executive members and one with VFMC members.**
- **From the survey participants, ten were selected to participate in the FGDs based on their comprehensive knowledge of fishing and fisheries management.**
- **Four executive members from the VFMC and seven from the FA were purposively selected based on their positions as village leaders to participate in the FGDs.**
- **In order to enhance understanding of fisheries management from the perspective of the state and traditional authorities, two key informant interviews were conducted with a government official from the Department of Fisheries and a senior village leader.**

### Data source location
- **Institution:** The University of Zambia
- **City/Town/Region:** Lusaka
- **Country:** Zambia
- **Physical Address:** Great East Road, 32379 Great East Road Campus

### Data accessibility
- **Data are hosted in a public repository**
- **Repository name:** Mendeley
- **Data identification number:** DOI: 10.17632/cps2ws94nx.1.
- **Direct URL to data:** http://dx.doi.org/10.17632/cps2ws94nx.1.

### Related research article
- **Kaluma K. and Umar B. B., Outcomes of participatory fisheries management: An example from co- management in Zambia’s Mweru- Luapula fishery. Heliyon, 7(2021) 1–13.**

## Value of the Data

- These data provide a current overview of the performance of fisheries co-management system in Mweru- Luapula fishery as it interrogates current practices and highlights major developments within the fishery.
• These data are useful in informing policy makers, practitioners and resource communities when engaging in decision-making processes for common pool resources.
• These data provide a basis for understanding how changes for example in socio-economic factors have influenced exploitation practices within the fishery, hence have the potential to aid the design of future interventions.
• These data also build on historical discussions of fisheries management systems in Zambia and thereby aid the process of modifying current practices within fisheries.

1. Data Description

Sixty-four responses were collected in this study through structured interviews. Respondent’s location and basic biographical data are provided.

1.1. Location and biographical data

Location includes respondent's questionnaire (serial) number and village name. Biographical data includes respondents' gender, ages, education level, marital status, income earning activities and income earned from each activity.

1.2. Performance of fisheries committees

Columns L and M show the respondents' number of years as fishers and the type of fishing engaged in respectively. This is followed by respondents’ knowledge about fishing committees and participation in committee elections in columns N-AD.

1.3. Effect of fisheries by-laws and regulations

Columns AF-BE probe respondents’ knowledge of fishery by-laws and regulations; how they are instituted, the agencies responsible for enforcement; sanctioning methods and the current effect of enforcement activities on stock of fish species.

1.4. Abbreviations

| Abbreviation | Meaning                                      |
|--------------|----------------------------------------------|
| DOI          | Digital Object Identifier                    |
| Eds.         | Editors                                      |
| FA           | Fishing Association                           |
| FAO          | Food and Agricultural Organization of the United Nations |
| FGDs         | Focus Group Discussions                      |
| No.          | Number                                       |
| ORG          | Organization                                 |
| UNDP         | United Nations Development Program           |
| VFMCs        | Village Fisheries Management Committees      |

2. Experimental Design, Materials and Methods

2.1. Methods

A concurrent triangulation mixed method design was employed for this study. This method enabled time-efficient data collection and enhanced the validity of the results [5].
2.1.1. Data collection

Structured interviews were conducted with 64 respondents using questionnaires. The sample size was based on theoretical saturation, that is, interviews were conducted until an additional interview did not result in the acquisition of any new information [6]. A total of five focus group discussions (FGDs) with a sub-set of knowledgable survey respondents, and community leaders from FA and VFMC were conducted separately. Finally, two semi-structured interviews with key interviewees from the Department of Fisheries and the traditional authority supplemented survey and FGD data by providing expert information on the current state of the fisheries institutions.

Observations were also made at various landing sites along the shoreline of Kabuta fishing camp to determine the types of fishing gear, fishing methods and the type of fishes landed and their sizes. Observations were also made of homesteads to determine fish drying techniques and the trading system.

Survey data were entered and analysed in Microsoft Excel. Digital recordings from FGDs and key informant interviews were transcribed. Notes taken during the FGDs consolidated transcriptions of the recorded discussions.

Ostrom’s Eight Design Principles were reworded and used to analyse the performance of the Village Fisheries Management Committee as an institution. White’s (1996) typology of interests was employed to evaluate fishers’ participation in fisheries management. The Fisheries Act No. 22 of 2011 and the Fisheries Regulations of 2012 provided the basis for analysing fishers’ compliance to fisheries laws and regulations [7,8].

Ethics Statement

This study was approved by the University of Zambia’s Directorate of Research and Graduate Studies Ethics Board. Informed consent was obtained from all participants before administering the data collection tools.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships which have or could be perceived to have influenced the work reported in this article.

Acknowledgments

The Authors would like to acknowledge the valuable comments rendered by the reviewers and editors in refining this work.

References

[1] K. Kaluma, B.B. Umar, Outcomes of participatory fisheries management: an example from co-management in Zambia’s Mweru-Luapula fishery, Heliyon 7 (2021) 1–13, doi:10.1016/j.heliyon.2021.e06083.
[2] E. Ostrom, Governing the commons: the Evolution of Institutions for Collective Action, Cambridge University Press, Cambridge, 1990.
[3] S. White, Depoliticizing Development: the uses and abuses of participation, Dev. Pract. 6 (1) (1996) 6–15.
[4] B.H.M. Aarnink, C.K. Kapasa, P.A.M. van Zwieten, Our children will suffer: present status and problems of Mweru-Luapula fisheries and the need for Conservation and Management Action Plan, UNDP/FAO Reg. Proj. Inland Fish. Plan. (IFIP) (1993).
[5] J.W. Creswel, V.L.P. Clark, M.L. Gutmann, W.E. Hanson, Advanced mixed methods research designs, in: A. Tashakkori, C. Teddlie (Eds.), Handbook of Mixed Methods in Social & Behavioural Research, Sage, Thousand Oaks, CA, 2003, pp. 209–240.
[6] B. Saunders, J. Sim, T. Kingstone, S. Baker, J. Waterfield, B. Bartlam, H. Burroughs, C. Jinks, Saturation in qualitative research: exploring its conceptualization and operationalization, Qual. Quant. 52 (2018) 1893–1907.
[7] Government of ZambiaFisheries Act No. 22. Government printers, Zambia, Lusaka, 2011.
[8] Government of Zambia, Statutory Instrument No. 24 of 2012 (2012). Government Printers, Zambia. Lusaka