**Participatory assessment of priority fishery profiles for an overfished urban inshore seascape in Kenya**

1Johnstone Omuhaya Omukoto\*, 2 Horace Owiti, 2 Victor A. Mwakha, 3Cosmas Nzaka Munga, 4Andrew Wekesa Wamukota

Supplementary material

1Marine and Coastal Fisheries Research Department, Kenya Marine and Fisheries Research Institute, P.O. Box 81651 Mombasa, Kenya. Email: [jomukoto@gmail.com](mailto:jomukoto@gmail.com)

2Socio-Economic Research Department, Kenya Marine and Fisheries Research Institute, P.O. Box 81651 Mombasa, Kenya. Email: [owitihorace@yahoo.com](mailto:owitihorace@yahoo.com) ; [vmwakha@gmail.com](mailto:vmwakha@gmail.com)

3Department of Environment and Health Sciences, Marine Sciences Section, Technical University of Mombasa P.O. Box 90420 – 80100, Mombasa, Kenya. Email: [cosmasnke2001@yahoo.com](mailto:cosmasnke2001@yahoo.com)

4Department of Environmental Studies (Community Development), School of Environmental and Earth sciences, Pwani University, P.O. Box 195-80108, Kilifi, Kenya. Email: [awamukota@gmail.com](mailto:awamukota@gmail.com)

\* Corresponding author email: [jomukoto@gmail.com](mailto:jomukoto@gmail.com)

Appendix 1. Modified Delphi questionnaire tool with a 5-point Likert scale

The following criterion based on a scale of **1 – 5** is proposed for selecting priority fisheries profiles for the Nyali-Mtwapa Seascape based on stakeholders’ consultation:

**Criteria 1: Community Participation [Level are lowest (1) to highest (5)]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Fishery types** | | | | |
| **No** | **Questions** |  |  |  |  |  |
|  | Are indigenous the main fishers involved in the fishery? |  |  |  |  |  |
|  | Are the fish species eaten by the indigenous communities? |  |  |  |  |  |
|  | Are women involved in the fishery? |  |  |  |  |  |
|  | Are the youth involved in the fishery? |  |  |  |  |  |

**Criteria 2: Income [Level are lowest (1) to highest (5)]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Fishery types** | | | | |
| **No** | **Questions** |  |  |  |  |  |
|  | Does the fishery provide adequate income to the fishers? |  |  |  |  |  |
|  | Does the fishery provide adequate income to fish traders? |  |  |  |  |  |
|  | Is the fish traded beyond the local area? |  |  |  |  |  |
|  | Does trading fish outside the fishing area give better income? |  |  |  |  |  |

**Criteria 3: Production and Catch [Level are lowest (1) to highest (5)]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Fishery types** | | | | |
| **No** | **Questions** |  |  |  |  |  |
|  | Do the fishers get enough catch on a daily basis? |  |  |  |  |  |
|  | Have catches declined in the past 10 years? |  |  |  |  |  |
|  | Are catches expected to be stable in the next 10 years? |  |  |  |  |  |

**Criteria 4: Co-Management [Level are lowest (1) to highest (5)]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Fishery types** | | | | |
| **No** | **Questions** |  |  |  |  |  |
|  | Is the BMU involved in managing the fishery? |  |  |  |  |  |
|  | Does the BMU provide any services at the landing site? |  |  |  |  |  |
|  | Is the BMU involved in marketing of the fish? |  |  |  |  |  |
|  | Does the BMU have infrastructure for marketing? |  |  |  |  |  |
|  | Are there any illegalities in the fishery? |  |  |  |  |  |
|  | Does the BMU participate in controlling these illegalities? |  |  |  |  |  |
|  | Is the BMU effective in implementing regulations? |  |  |  |  |  |
|  | Does the BMU collaborate with other partners? |  |  |  |  |  |
|  | Are there clear management measures for the fishery? |  |  |  |  |  |
|  | Are legislations and regulations known to the BMU Assembly? |  |  |  |  |  |

**Criteria 5: Ecosystem Impacts [Level are lowest (1) to highest (5)]**

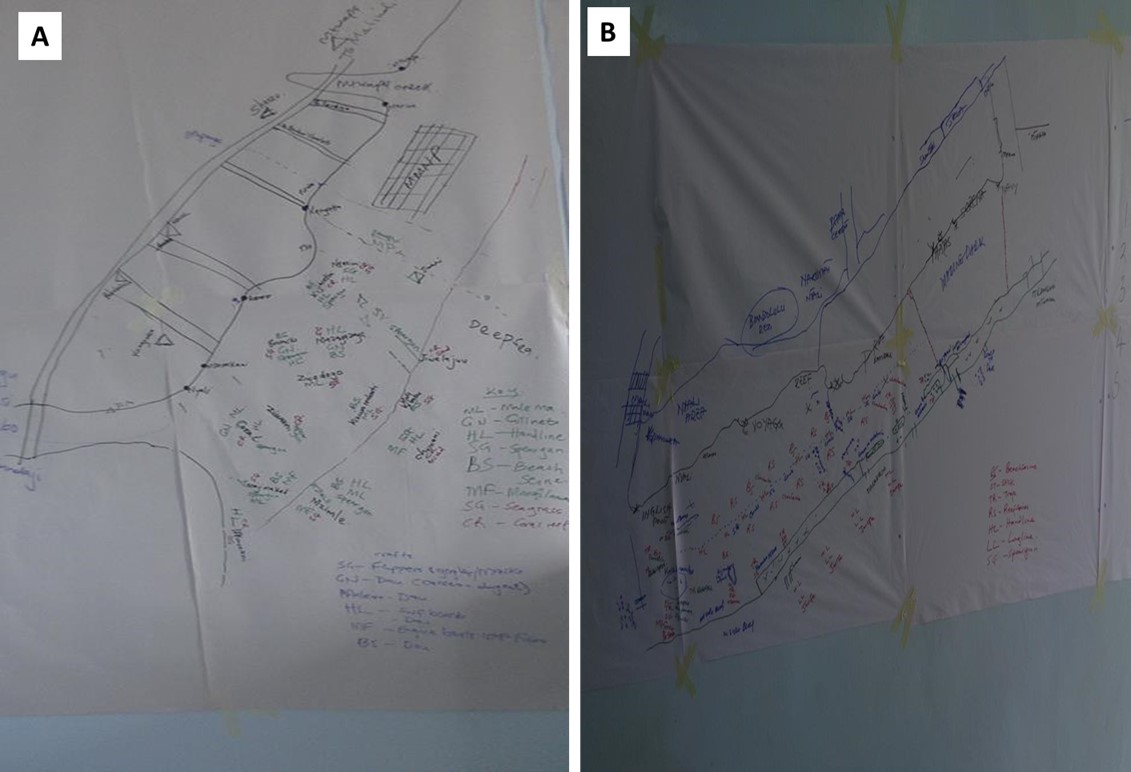
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Fishery types** | | | | |
| **No** | **Questions** |  |  |  |  |  |
|  | What is the intensity of fishing in the coral reefs? |  |  |  |  |  |
|  | Does the fishing interfere with the corals? |  |  |  |  |  |
|  | What is the intensity of fishing in the sea grass beds? |  |  |  |  |  |
|  | Does the fishing interfere with the sea grasses? |  |  |  |  |  |
|  | Does fishing take place in the estuaries? |  |  |  |  |  |
|  | Does the fishing interfere with the estuarine ecosystem? |  |  |  |  |  |
|  | Does the fishery catch any juveniles of the targeted species? |  |  |  |  |  |
|  | Does the fishery catch juveniles of non-targeted species? |  |  |  |  |  |
|  | Does the fishery catch sea turtles? |  |  |  |  |  |
|  | Does the fishery catch dolphins and dugongs? |  |  |  |  |  |
|  | Does the fishery catch sharks? |  |  |  |  |  |
|  | Does the fishery catch rays and skates? |  |  |  |  |  |

**Criteria 6: Types of Gears Used [Level are lowest (1) to highest (5)]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Fishery types** | | | | |
| **No** | **Questions** |  |  |  |  |  |
|  | Are the gears used in the fishery available locally? |  |  |  |  |  |
|  | Are the gears used in the fishery affordable? (probe for prices) |  |  |  |  |  |
|  | Are the gears used in the fishery legally acceptable? |  |  |  |  |  |
|  | Are the gears used in the fishery left in the sea or carried back to the shore after fishing? |  |  |  |  |  |
|  | Are the gears easy to repair? |  |  |  |  |  |
|  | Do the gears last for a long time? (Durability) |  |  |  |  |  |
|  | Are the gears frequently lost at sea? |  |  |  |  |  |

**Criteria 7: Fishing Crafts Used [Level are lowest (1) to highest (5)]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Fishery types** | | | | |
| **No** | **Questions** |  |  |  |  |  |
|  | Are the fishing crafts used in the fishery constructed locally? |  |  |  |  |  |
|  | Are the fishing crafts used in the fishery affordable? (Probe cost) |  |  |  |  |  |
|  | Are the fishing crafts used in the fishery considered seaworthy? |  |  |  |  |  |
|  | Are the fishing crafts used in the fishery easy to maintain/repair? |  |  |  |  |  |
|  | Are the fishing crafts used in the fishery made of timber? |  |  |  |  |  |
|  | Are the fishing crafts used in the fishery made of fibreglass? |  |  |  |  |  |
|  | Are the fishing crafts used in the fishery made of metal? |  |  |  |  |  |
|  | Are the fishing crafts propelled by paddles? |  |  |  |  |  |
|  | Are the fishing crafts propelled by sail? |  |  |  |  |  |
|  | Are the fishing crafts propelled by outboard engines? |  |  |  |  |  |
|  | Are the fishing crafts propelled by inboard engines? |  |  |  |  |  |

Appendix 2. Community priority fisheries resource maps for A – Nyali and B – Reef landing sites along coastal Kenya

Appendix 3. Community priority fisheries resource maps for C – Bamburi and D – Marina/Mtwapa landing sites along coastal Kenya

