Mainstreaming Freshwater Invertebrates Biodiversity Data into Government Decision-Making (BID-AF2020-169)

Kick-off meeting and Capacity Enhancement Training workshop

Technical Report

September, 2021

S1. Preamble

The project team conducted two meetings; (i) project members meeting (5th to 11th July 2021) and (ii) training on freshwater invertebrate's biodiversity data mobilization which was conducted in two phases; virtually and physically. The virtual (zoom) training involved training of six graduate volunteers for data mobilization; the training was done on the 1st and 8th September 2021 prior to physical training. This training was then followed by a physical training which was attended by both graduate volunteers, data holders and users and project team members. The training was conducted in Moshi district, Kilimanjaro region Northern-Tanzania from 12th to 18th September 2021. The two meetings laid out project's logistical plan and have generated among other data mobilization plan (**Annex 2**), project's work flow (**Annex 3**) and project's timeline (**Annex 4**). So far, logistic-wise project's achievements includes: (i) formulation of inter-basin teams of northeastern Tanzania's freshwater invertebrates data holders and users from across different institutions in Tanzania, (ii) signing of Memorandum of Understanding (MoUs) between TanBIF/COSTECH and data holders for material/ data transfer agreement, (iii) formulation of data mobilization team, (iv) Identification and mapping of potential users and providers of FIMC biodiversity data, and (v) Development of data mobilization plan and project workflow. The project had initially put data holders and users from theoretical thinking but after the discussion and learning from the ground, we ended up fine tuning this into a more realistic list of stakeholders for data sources and users as indicated in **Tables 1 and 2; Plates 1 and 2**. Stakeholders included people from different government institutions, non-government organizations (NGOs) and individual researchers.

There have not been changes in partnership but some minor changes are expected in aspects related to database development. Efforts will likely be directed towards linking existing FIMC databases from different institutions with TanBIF/GBIF databases based on the GBIF standards. Also, issues of capacity building between data holders and users will be considered more to allow for sustainability of the project and project-related milestones and outputs. For example, the team agreed to train six (6) young scientists who are willing to take lessons learnt from the project beyond project plans and activities, by using this as part of their further career development as well and act as train of trainers. The lessons and feedback from these are also expected to build and improve on the FIMC data collection protocols by different stakeholders even after this project phases out.

Table 1: Project's kick off meeting participants

S/N	Name	Affiliation	Roles
1.	Dr. Grite Nelson	Nelson Mandela African Institution of Science and Technology (NM-AIST)	Member/Chairperson
2.	Dr. Issakwisa Ngondya	Nelson Mandela African Institution of Science and Technology (NM	Member
3.	Dr. Linus Munishi	Nelson Mandela African Institution of Science and Technology (NM	Member
4.	Dr. Khamis Kalegele	The Open University of Tanzania (OUT)	Member

5.	Dr. Hulda Gideon	Commission for Science and Technology (CoSTECH)/ TaNBIF	Member
6.	Mr. Hillary Mrosso	Tanzania Fisheries Research Institute (TAFIRI)	Member
7.	Dr. Nicephor Lessio	Tanzania Wildlife Research Institute (TAWIRI)	Member
8.	Mr. Vincent Matsiko	Nugsoft Technologies (Uganda)	Member
9.	Mr. Lewis Kusolwa	Nelson Mandela African Institution of Science and Technology (NM-AIST)	Member/Secretary

Table 2: Freshwater invertebrate's biodiversity data mobilization training participants

S/N	**Name**	**Affiliation**	**Roles**	
1.	Dr. Grite Nelson	Nelson Mandela African Institution of Science and Technology (NM-AIST)	Data mobilizer/ Data provider	Member
2.	Dr. Issakwisa Ngondya	Nelson Mandela African Institution of Science and Technology (NM-AIST)	Data mobilizer	Member
3.	Dr. Linus Munishi	Nelson Mandela African Institution of Science and Technology (NM-AIST)	Data mobilizer	Member
4.	Dr. Hulda Gideon	Commission for Science and Technology (CoSTECH)/ TaNBIF	Trainer	Member
5.	Mr. Hillary Mrosso	Tanzania Fisheries Research Institute (TAFIRI)	Data provider & User	Member/ stakeholder
6.	Dr. Nicephor Lessio	Tanzania Wildlife Research Institute (TAWIRI)	Data provider & User	Member
7.	Ms. Arafa Maggidi	Pangani River Basin	Data provider & User	Member/stakeholder
8.	Mr. Vincent Matsiko	Nugsoft Technologies	Data mobilizer	Member
9.	Dr. Khamis Kalegele	Open University of Tanzania	Data mobilizer	Member
10.	Ms. Neema Kilimba	Tanzania Wildlife Research Institute (TAWIRI)	Data provider & User	Stakeholder
11.	Dr. Lulu Kaaya	University of Dar-es-salaam (UDSM)	Data provider	Stakeholder
12.	Ms. Rosemary	Lake Victoria Basin	Data provider &	Stakeholder

	Masikini		User	
13.	Mr. Gordian Mataba	Nelson Mandela African Institution of Science and Technology (NM-AIST)	Data provider	Stakeholder
14.	Prof. Didas Kimaro	Mwenge Catholic University	Trainer	Stakeholder
15.	Prof. Alain Pauly	Royal Belgian Institute of Natural Sciences	Data provider	Stakeholder
16.	Mr. Stephen Maro	African College of Wildlife Management	Data mobilizer	Volunteer
17.	Ms. Salome Milola	Sokoine University of Agriculture (SUA)	Data mobilizer	Volunteer
18.	Mr. Ally M. Ally	University of Dar-es-salaam (UDSM)	Data mobilizer	Volunteer
19.	Ms. Clean Chrisant	University of Dar-es-salaam (UDSM)	Data mobilizer	Volunteer
20.	Mr. Arnold Shoko	University of Dar-es-salaam (UDSM)	Data mobilizer	Volunteer
21.	Ms. Scholastica Mbinile	Nelson Mandela African Institution of Science and Technology (NM-AIST)	Data mobilizer	Volunteer

S2. Project's kick off meeting objectives:

1. Team member familiarization
2. Defining FIMC data user needs
3. Identify FIMC data gaps
4. Identification of data holders/ providers and users
5. Develop a FIMC data mobilization plan
6. Develop project's work flow
7. Refine project's timeline


Plate 1: Project members (left), project's kick off meeting in session (right) in Moshi-Kilimanjaro

S3. Project's kick off meeting outcomes:

The meeting outcomes were as detailed in **Table 3.**

Table 3: Project's kick off meeting outcomes

S/N	Objective	Outcomes
1.	Team member familiarization	• All team members familiarized one-another • Awareness on FIMC species raised among team members • A network and collaborations among team members strengthened
2.	Define FIMC data user needs	• User needs were defined whereby FIMC species of conservation potential, indicators of habitat and ecosystem quality, human- health concern, food and farming potential were needed to be mobilized
3.	Identify FIMC data gaps	Data gap were identified whereby: • only 2 species shrimps were in GBIF database without GPS coordinates • only 1 species of crab was found in GBIF database with GPS coordinates • only 18 taxa of insects were found to have records in GBIF database • only nine (9) genus of mollusks were in GBIF records but without coordinates It was agreed that: • All freshwater crustaceans and crabs needs to be mobilized • Over 23 family of insects needs to be mobilized • Nine (9) genus of mollusks data needs to be mobilized
4.	Identification of data holders/ providers	Four government institutions: (i) Pangani water Basin Authority (ii) Lake Victoria Water Basin Authority (iii)Tanzania Fisheries Research Institute (iv) Tanzania Wildlife Research Institute and three researchers: (i) Dr. Grite Nelson (NM-AIST (ii) Dr. Lulu Kaaya (University of Dar-es-salaam) and (iii) Mr. Gordian Mataba (NM-AIST) data holders/ providers were identified
5.	Develop a FIMC data mobilization plan	A FIMC data mobilization plan was developed as detailed in the mobilization plan document (**Annex 2**)

6.	Develop project's work flow	A project's workflow was developed as detailed in the project's workflow (**Annex 3**)
7.	Refine project's timeline	A project's timeline was refined as detailed in the project's timeline (**Annex 4**)

S4. Conclusion and the way forward

The team affirmed commitment to collaboratively make sure that this project becomes a great success and a role model in terms of developing data access and format that is easy to adopt and use by decision-making board. To be able to attain this, some milestones were set by the team that included a follow up meeting to train project data mobilization team and data users as well as develop data mobilization plan

S5. Freshwater invertebrate's biodiversity data mobilization training objectives:

The training aimed at training data holders/ providers and mobilizers on the following subjects:

1. Introduction to biodiversity data mobilization
2. Biodiversity data standards
3. Biodiversity data transformation
4. Data Validation
5. Biodiversity data mapping
6. Metadata
7. Integrated Publishing Toolkit (IPT)

Plate 2: Training participants (left), freshwater invertebrate's biodiversity data mobilization training in progress (right) in Moshi-Kilimanjaro

S6. Freshwater invertebrate's biodiversity data mobilization training outcomes:

Training outcomes were as detailed in **Table 4.**

Table 4: Data holders/ providers and mobilizers training outcomes

S/N	Objective	Outcomes
1.	Introduction to biodiversity data mobilization	• Both data holders and mobilizers (including graduate volunteers)

		awareness on biodiversity (FIMC species) data mobilization raised
2.	Biodiversity data standards	• Both data holders and mobilizers (including graduate volunteers) trained and equipped on biodiversity data standards mainly: ▪ GBIF data standards (Darwin Core Data Standard(DwC)) ▪ GBIF dataset classes (checklist, occurrence data, sampling event data and resources metadata)
3.	Biodiversity data transformation, validation, mapping	• Both data holders and mobilizers trained and equipped on: ▪ The meaning of data transformation ▪ Practiced to transform various datasets (checklists and occurrence datasets) ▪ The purpose of data transformation ▪ Steps for data transformation (selection of class of data, data discovery, data mapping, data uploading, review and validating, describing DwC data elements, and creating DwC-A files)
4.	Metadata	• Both data holders and mobilizers trained and equipped on: ▪ The meaning of metadata ▪ How to prepare metadata ▪ Components of a good metadata
5.	Integrated Publishing Toolkit (IPT)	• Both data holders and mobilizers trained and equipped on how to use IPT to: ▪ upload datasets to TanBIF/ GBIF ▪ publish and register datasets through TanBIF/GBIF

S7. The way forward

Both data holders and mobilizers agreed that there should be regular virtual (zoom) meetings as follow-ups to further practice on what have been so far learnt before embarking into phase two of the project (mobilization phase). Therefore zoom meetings have been scheduled on 4th October 2021 and 11th October 2021.