# Manual Process of Extracting Facts and Relationships

## 1/ Sentence separation & Subject Identification:

### a/ Paper 1: Diversity of fishing gears and crafts used for harvesting the Asian seabass, Lates calcarifer along the Bay of Bengal, Bangladesh coast

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| **Sentence Separation** | **Subject Identification** |
| **S1:** These fishing boats are built traditionally by the rural carpenters with wooden planks. | These fishing boats [Sub: Boats] |
| **S2:** Till the mid ‘60s, fishing operations in the estuaries and offshore waters were carried out by traditional craft. | Fishing operations [Sub: Fishing operations] |
| **S3:** The first initiatives of motorized fishing boats started in 1966-67 with outboard engines. | Motorized fishing boats [Sub: Boats] |
| **S4:** Subsequently, these were replaced by inboard marine diesel engines. | These [Sub: Outboard engines] |
| **S5:** The marine fishing fleet consists of about 34,810 traditional boats, 32,859 motorized boats and 247 trawlers. | Marine fishing fleet [Sub: Fishing fleet] |
| **S6:** The total number of marine fishing gears were operated in Bangladesh was 1,88,707. | The number of marine fishing gears [Sub: Number of fishing gears] |
| **S7:** The number of marine fishermen was about 5,16,000 out of a total of 1.16 million fishermen in the country (DoF 2016). | The number of marine fishermen [Sub: Number of fishermen] |
| **S8:** In Bangladesh the major fishing of Asian seabass was based on mechanized crafts and gear. | Major fishing [Sub: Fishing operations] |
| **S9:** There was almost nonexistence of the primitive fishing crafts like Dug-out canoe, Bamboo raft etc. but the wooden boats used for harvesting seabass in coastal and offshore areas of Bangladesh. | There [Sub: Fishing crafts] |
| **S10:** These plank built boats are covered with wooden or bamboo frames. | These plank built boats [Sub: Artisanal boats] |
| **S11:** The smaller sized boats are used in coastal rivers, canal and estuaries. | The smaller sized boats [Sub: Artisanal boats] |
| **S12:** Kosha nauka is a low cost, most traditional country boat with flat bottom and decking half split bamboo. | Kosha nauka [Sub: Kosha nauka] |
| **S13:** Dingi nauka is a small rowing boat. | Dingi nauka [Sub: Dingi nauka] |
| **S14:** It is a shallow boat with a pointed bow and the hull is strengthened by ribs and cross beams. | It [Sub: Dingi nauka] |
| **S15:** Medium sized boats are mainly used in commercial fishing. | Medium sized boats [Sub: Motorized boats] |
| **S16:** These boats are also used for harvested fish transportation. | These boats [Sub: Motorized boats] |
| **S17:** Motorized dingi boats are of the same design and structure to non-mechanized Dingi but large in size, powered by marine engine. | Motorized dingi boats [Sub: Dingi boats] |
| **S18:** Sampan fish boats are crescent shaped boats indigenous to Cox’s Bazar and Chattagram region | Sampan fish boats [Sub: Sampan] |
| **S19:** The Koral jal which is a modified version of the large meshed gill net, the local fishers developed for harvesting seabass in Cox’s Bazar region. | Koral jal [Sub: Gill net] |
| **S20:** “J’’ shaped steel hook is mostly used for hook and line fishing. | “J” shaped steel hook [Sub: Hook] |
| **S21:** They reported that gillnets, hooks and lines, cast nets and traps were used to catch the mature seabass. | They [Sub: Researchers] |
| **S22:** The form and size of the gear depends on the use of gears and the environmental condition of the water body. | The form and size of the gear [Sub: Fishing gears] |
| **S23:** Among the documented gears and crafts, one new gear (single hook and line) and one fishing boat (Sampan) were found to be involved in Seabass harvesting at BoB coast, which earlier has not been reported from Bangladesh. | One new gear (single hook) and one fishing boat (Sampan) [Sub: Hook and Sampan] |
| **S24:** Front head of Sampan is high and curved, but backside strait. | Front head of Sampan [Sub: Front of Sampan] |
| **S25:** With the introduction of the marine engine the primary utility of the shape has forgone. | Primary utility of the shape (Front head of Sampan) |
| **S26:** The bow and stern Balam fishing boat are slightly raised. | Balam fishing boat [Sub: Balam] |
| **S27:** The sides are built by fitting planks to the dug-out portion of the hull. | Sides [Sub: Sides of Balam] |
| **S28:** The seagoing mechanized fishing vessels (trawlers) are made from the best quality planks and are covered with wooden frames having a cabin, a kitchen and latrine facilities. | Seagoing mechanized fishing vessels [Sub: Trawlers] |
| **S29:** They have insulated cold storage facilities for preserving the harvested fishes up to 15 days in the sea. | They [Sub: Trawlers] |
| **S30:** Behundi jal is a conical shaped net and has two extensions | Behundi jal [Sub: Behundi jal] |
| **S31:** Mouth of the net is spread and fixed on tide by bamboo, wood or iron. | Mouth of the net [Sub: The net’s mouth] |
| **S32:** Fish is trapped in the centre pouch of the net. | Fish [Sub: Fish] |

### b/ Paper 2: Fishing Gears and Practices in the Bukbhora Oxbow Lake: Implications for Biodiversity Conservation in South-west Bangladesh

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| **Sentence Separation** | **Subject Identification** |
| **S1:** Among 16 fishing gears 5 of these were found illegal in this study due to its mesh size and destructive behavior of fish biodiversity. | These [Sub: Fishing gears] |
| **S2:** Except some, majority fish species trapped in the recorded fishing traps were Small Indigenous Species, whereas fishing hooks and lines were used to catch carnivorous fish species mainly. | Majority fish species [Sub: Fish species trapped in fishing traps] |
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| **S3:** Wounding fishing gears were used for wounding large size fishes during heavy flood or when water level becomes low. | Wounding fishing gears [Sub: Fishing gears that are wounding] |
| **S4:** The choice of fishing gear, method of operation, number of fishermen, fishing intensity, and level of exploitation all has a significant impact on the future of the fishing industry | Choice of fishing gear, method of operation, number of fishermen, fishing intensity, level of exploitation [Sub: Factors affecting the fishing industry] |
| **S5:** Bukbhora Baor (23.1759° N, 89.1170° E) is one of the prominent oxbow lakes located in Jashore Sadar Upazila. | Bukbhora Baor [Sub: Bukbhora Baor lake] |
| **S6:** The catch per unit effort (CPUE) of the angling gears were taken dependent on the weight of fish discovered amid an angling day (kg gear-1haul-1) for the various species consolidated and the gear efficiency (kg gear-1person-1haul-1) additionally assessed based on the weight of fish got and a number of individuals drew in with each fishing gear per hour. | The catch per unit effort of the angling gears [Sub: CPUE] |
| **S7:** A total of thirty fishermen in the chosen baor area were surveyed using a basic random sampling procedure and questionnaire interviews in order to gather data. | A total of thirty fishermen in the chosen baor area [Sub: Thirty fishermen] |
| **S8:** A measuring scale was used as a tool to measure mesh size of existing fishing gears. | A measuring scale [Sub: Scale] |
| **S9:** Direct observation was conducted to record data on fishing gear like shape and mesh size (cm) of fishing gears. | Direct observation [Sub: Observation] |
| **S10:** Information about the price of fishing gear, species catch by individual gear, catch per unit effort (CPUE)/day and operation period of individual fishing gear were collected through interviewing with fishermen” | Information about the price of fishing gear, species catch by individual gear, catch per unit effort (CPUE)/day and operation period of individual fishing gear [Sub: Information from interview] |
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| **S11:** All the data were accumulated to analyze the findings. | All the data [Sub: Collected data point from the study] |
| **S12:** Tabular technique was applied by using simple statistical tools such as percentages and averages. | Tabular technique [Sub: Tabular technique] |
| **S13:** The fishery of the ox-bow lakeis multispecies and multigear in nature. | The fishery of the ox-bow lake [Sub: Fishery of the lake ox-bow] |
| **S14:** Fishermen use numerous types of fishing gears for fishing based on seasons and water depth of the baor. | Fishermen [Sub: Fishermen] |
| **S15:** It was observed that huge number of fishes was caught by seine net (Ber jal) and the rare species were damaged through these bulk catches and it is considered as one of the most detrimental gears compared to others. | It [Sub: The event that huge number of fishes was caught by seine net and the rare species were damaged] |
| **S16:** The catch per unit effort (CPUE) is the average daily catch per gear type standardized per fishing unit. | The catch per unit effort (CPUE) [Sub: CPUE] |
| **S17:** CPUE is influenced by several factors, primarily the type of gear used and its efficiency, how many hours it is operated for in a day, weather conditions, and location of fishing. | CPUE [Sub: The catch per unit effort] |
| **S18:** This type of fishing gear was made from bamboo plate with twine. | This type of fishing gear [Sub: Fishing Traps] |
| **S19:** Fish traps are not considered as destructive gear until it creates any barrier on the migratory route of fish. | Fish Traps [Sub: Fishing Traps] |
| **S20:** Vair is a Long box like trap with a door extending from its base to its apex used in shallow portion of the baor. | Vair [Sub: Box-like Trap] |
| **S21:** Made of split bamboo sticks tied with creeper or cane. | Charo/Vair [Sub: Vair] |
| **S22:** Small opening at the apex for collecting fish. | Small opening [Sub: Small opening of Vair] |
| **S23:** In front of Vair a barrier is created with split bamboo made Bana. | A barrier [Sub: Barrier in front of Vair] |
| **S24:** The trap checked up every one or two hour interval. | The trap [Sub: Vair] |
| **S25:** Rectangular box shaped. | Rectangular Box [Sub: Ghuni/Kholsun] |
| **S26:** Made of split bamboo tied with jute rope or cane. | Ghuni/Kholsun [Sub: Ghuni/Kholsun] |
| **S27:** Kholsun consists of two doors from its apex for fish opening. | Kholsun [Sub: Ghuni/Kholsun] |
| **S28:** Small opening present at its apex for collect the fish. | Small opening present at its apex [Sub: Small opening present at the Kholsun’s apex] |
| **S29:** Usually it set in shallow part of the Baor with the help of bamboo pole or tree branches during early morning or evening. | It [Sub: Ghuni/Kholsun] |
| **S30:** Basket shaped, made of split bamboo with two or three entrances. | Basket [Sub: Bitte] |
| **S31:** There is an opening on the trap for collecting fish. | There [Sub: The opening on the trap] |
| **S32:** The trap is sunken (1 to 1.5 feet below from water surface) in shallow, where small current is present during early morning and evening. | The trap [Sub: Bitte] |
| **S33:** Checked up every one or two hour interval. | The trap [Sub: Bitte] |
| **S34:** The terms kochal (Seine net) and komor (drag net) fishing were local name in the study area, which were mostly used for fishing the carps. | The terms kochal and komor [Sub: The terms for Seine net and drag net] |
| **S35:** Initially, the kochal jal (seine net) is operated for 5 to 10 days and by this time the runaway fish took shelter into bush parks (locally called komor) that set in nearby areas. | The kochal jal (seine net) [Sub: Seine net] |
| **S36:** At that stage, the fishers were stopped operating the kochal jal and started fishing in the komors by encircling those with komor jal (drag net). | The fishers [Sub: Fishermen] |
| **S37:** Maximum fishers had pieces of kochal jal and komor jal (2-5 pieces) and those were jointed together (each of 18 fishers groups separately work) during the harvesting period. | Maximum fishers [Sub: Fishermen] |
| **S38:** Komor fishing (drag netting) was principally adopted as a method to catch the remaining fishes in the baor after kochal fishing. | Komor fishing [Sub: Drag netting] |
| **S39:** Different fishing gears such as entangle net of selective mesh size, borshi, ghuni/britti etc. were used for SIS harvesting. | Different fishing gears [Sub: Fishing gears] |
| **S40:** Seine net was the most destructive gear as large amount of fishes were caught per tow by it and there is every possibilities to extinct the rare species if this gear are used in the early breeding season. | Seine net [Sub: Seine Net] |
| **S41:** The choice of fishing gears by the fishermen depends on many factors like types of fish species available and the physical condition of the baor. | The choice of fishing gears by the fishermen [Sub: Choice of fishing gears] |
| **S42:** “Different shapes of fishing gears were enlisted such as rectangular shape (ber jal, current jal), conical shape (jhaki jal), square shape (khora jal) and triangular shape (thela jal) with mesh size ranged from 0.5 to 10 cm, in the study area. | Different shapes of fishing gears [Sub: Shapes of Fishing Gears] |
| **S43:** Maximum fishing efforts per day were correlated with the highest catch composition of any fishing gear. | Maximum fishing efforts per day [Sub: Maximum efforts put in fishing per day] |
| **S44:** However, most of the fishermen caught fish species by using ber jal, komar jal, current jal, thela jal to bring their livelihood. | Most of the fishermen [Sub: Fishermen] |
| **S45:** Fishing (harvesting of carp species) started in November-December and completed on 30th June in each season. | Fishing [Sub: The Harvesting of sarp species] |
| **S46:** Fishermen caught fish throughout the year but comparative higher amount fish was caught during winter season (November to January) which was agreed with Farid et al. | Fishermen [Sub: Fishermen] |
| **S47:** Mainly the fishermen operate their trap in rainy season when the water flows of the baor are much higher. | The Fishermen [Sub: Fishermen] |
| **S48:** Different types and sizes of trap are used by the fishermen and it’s completely depending upon the target species and their sizes that they would be caught, water depth and seasonality. | Different types and sizes of trap [Sub: Types and sizes of trap] |
| **S49:** The operation method of these traps are more or less similar. | The operation method of these trap [Sub: The Traps’ operation method] |
| **S50:** Due to easy operating method and cheap rate, marginal fishermen widely used these trap for commercial and household consumption purposes. | Marginal fishermen [Sub: Fishermen] |
| **S51:** Size of the gear, mesh size, craft and fisherman required for operation vary with the fishing method and targeted fish species. | Size of the gear, mesh size, craft and fisherman required for operation [Sub: Size of the gear, mesh, craft and fisherman required] |
| **S52:** It depends on season, water level, size of fish, fishing area and availability of fisherman. | It [Sub: Size of the gear, mesh size, craft and fisherman required for operation] |

## 2/ Structuring facts & Relationship Identification and Representation:

### a/ Paper 1: Diversity of fishing gears and crafts used for harvesting the Asian seabass, Lates calcarifer along the Bay of Bengal, Bangladesh coast

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| **Fact Identification** | **Relationship Identification** | **Relationship Representation** |
| These fishing boats are built traditionally by the rural carpenters with wooden planks. | Relationship: Boats are built traditionally by rural carpenter with wooden planks | Boats (vehicle) [:are\_built\_by] rural carpenter (identity) [:with] wooden planks (objects) |
| Till the mid ‘60s, fishing operations in the estuaries and offshore waters were carried out by traditional craft. | Relationship: Until the middle of the 1960s, fishing operations in small bodies of water used traditional craft. | Fishing operations (activity) [:in] small bodies of water (location) [:used] traditional craft (objects) |
| The first initiatives of motorized fishing boats started in 1966-67 with outboard engines. | Relationship: Fishing boats that are motorized first started in 1966-67 with outboard engines | Motorized boats (vehicle) [:first\_started\_in] 1966-67 (time) [:with] outboard engines (engines) |
| Subsequently, these were replaced by inboard marine diesel engines. | Relationship: These (outboard engines) were replaced by inboard marine engines that used diesel. | Outboard engines (engines) [:were\_replaced\_by] inboard marine engines (engines) [:that\_used] diesel (fuel) |
| The marine fishing fleet consists of about 34,810 traditional boats, 32,859 motorized boats and 247 trawlers. | Relationship: The marine fishing fleet ≡ 34,810 traditional boats, 32,859 boats that are motorized and 247 trawlers. | The marine fishing fleet (identity) ≡ [:34,810] boats (vehicle), [:32,859] motorized boats (vehicle) and [:247] trawlers (vehicle). |
| The total number of marine fishing gears were operated in Bangladesh was 1,88,707. | Relationship: The number of fishing gear were operated in Bangladesh ≡ 1,88,707. | The number of fishing gear (number) [:were\_operated\_in] Bangladesh (location) ≡ 1,88,707 (number). |
| The number of marine fishermen was about 5,16,000 out of a total of 1.16 million fishermen in the country (DoF 2016). | Relationship: The number of fishermen ≡ about 5,16,000 of 1.16 million fisherment that is in the country (Bangladesh) | The number of fishermen (number) ≡ [:about] 5,16,000 (number) [:of] 1.16 million (number) [:in] Bangladesh (location) |
| In Bangladesh the major fishing of Asian seabass was based on mechanized crafts and gear. | Relationship: Major fishing of Asian seabass was based on mechanized crafts and gear. | Major fishing (activity) [:of] Asian seabass (species) [:was\_based\_on] mechanized crafts (objects) and gear (objects) |
| There was almost nonexistence of the primitive fishing crafts like Dug-out canoe, Bamboo raft etc. but the wooden boats used for harvesting seabass in coastal and offshore areas of Bangladesh. | Relationship: The fishing crafts that are primitive was almost nonexistence , but the wooden boats used for harvesting seabass in small bodies of water of Bangladesh. | Fishing crafts (objects) [:that\_are\_primitive] [:was\_almost] nonexistence (attribute) [:but] the wooden boats (vehicle) [:used\_for] harvesting seabass (activity) [:in] small bodies of water (location) [:of] Bangladesh (location) |
| These plank built boats are covered with wooden or bamboo frames. | Relationship: These boats that are built with plank are covered with wooden or bamboo frames | Boats (vehicle) [:that\_are\_built\_with] plank (objects) [are\_covered\_with] wooden or bamboo frames (objects) |
| The smaller sized boats are used in coastal rivers, canal and estuaries. | Relationship: Boats that are smaller are used in small bodies of water. | Boats (vehicle) [:that\_are] smaller (attribute) [:are\_user\_in] small bodies of water (location). |
| Kosha nauka is a low cost, most traditional country boat with flat bottom and decking half split bamboo | Relationship: Kosha nauka ≡ most traditional country boat that is low cost with flat bottom and decking half split bamboo | Kosha nauka (identity) ≡ [:most] traditional boat [:that\_is] low cost (attribute) [:with] flat bottom (attribute) and decking half split bamboo (attribute) |
| Dingi nauka is a small rowing boat. | Relationship: Dingi nauka ≡ a rowing boat that is small | Dingi nauka (identity) ≡ rowing boat (vehicle) [:that\_is] small (attribute) |
| It is a shallow boat with a pointed bow and the hull is strengthened by ribs and cross beams | Relationship: It (Dingi nauka) ≡ a shallow boat with pointed bow and hull that is strengthened by ribs and cross beams. | Dingi nauka (identity) ≡ a shallow boat (vehicle) [:with] pointed bow (attribute) and the hull (attribute) [:is\_strengthened\_by] ribs (objects) and cross beams (objects) |
| Medium sized boats are mainly used in commercial fishing. | Relationship: Boats that are medium size are mainly used in commercial fishing. | Boats (vehicle) [:that\_are] medium size (attribute) [:are\_mainly\_used\_in] commercial fishing (activity) |
| These boats are also used for harvested fish transportation. | Relationship: These boats (motorized boats) are also used for transporting harvested fish | Motorized boats (vehicle) [:are\_also\_used\_for] transporting harvested fish (activity) |
| Motorized dingi boats are of the same design and structure to non-mechanized Dingi but large in size, powered by marine engine. | Relationship: Motorized dingi boats have the same design and structure to non-mechanized Dingi but large in size and powered by marine engine. | Motorized dingi boats (vehicle) [:same\_design\_and\_structure\_to] non-mechanized Dingi (vehicle) [:but] large size (attribute) and [:powered\_by] marine engine (objects) |
| Sampan fish boats are crescent shaped boats indigenous to Cox’s Bazar and Chattagram region | Relationship: Sampan boats ≡ boats that are crescent and indigenous to Cox’s Bazar and Chattagram region. | Sampan boats (vehicle) ≡ boats [:that\_are\_crescent] and [:indigenous\_to] Cox’s Bazar (location) and Chattagram (location). |
| The Koral jal which is a modified version of the large meshed gill net, the local fishers developed for harvesting seabass in Cox’s Bazar region. | Relationship: Koral jal ≡ a modified version of the large meshed gill net, that the local fishers developed for harvesting seabass in Cox’s Bazar region. | Koral jal (identity) ≡ [:modified] gill net (objects) [:that\_is] large (attribute) and meshed (attribute) [:that] the local fishers (identity) [:developed\_for] harvesting seabass (activity) [:in] Cox’s Bazar region (location) |
| “J’’ shaped steel hook is mostly used for hook and line fishing. | Relationship: Steel hook that is “J” shaped is mostly used for hook and line fishing | Steel hook (objects) [:that\_is] “J” shaped (attribute) [:is\_mostly\_used\_for] hook (objects) and line fishing (objects) |
| They reported that gillnets, hooks and lines, cast nets and traps were used to catch the mature seabass. | Relationship: They (researchers) reported that gillnets, hooks and lines, cast nets and traps were used to catch mature seabass | Reseachers (identity) [:reported\_that] gillnets (objects), hooks (objects) and lines (objects), cast nets (objects) and traps (objects) [:were\_used\_to\_catch] mature seabass (species) |
| The form and size of the gear depends on the use of gears and the environmental condition of the water body. | Relationship: Form and size of the gear depends on the gears’ use and the condition of the environment water | Form and size (attribute) [:of] gears (objects) [:depends\_on] use [:of] gears (objects) and the condition (attribute) [:of\_the\_environment] water (identity) |
| Among the documented gears and crafts, one new gear (single hook and line) and one fishing boat (Sampan) were found to be involved in Seabass harvesting at BoB coast, which earlier has not been reported from Bangladesh. | Relationship: Single hook and line and Sampan boat were involved in Seabass harvesting at BoB coast | Single hook and line (identity) and Sampan boat (identity) [:were\_involved\_in] Seabass harvesting (activity) at BoB coast (location) |

### b/ Paper 2: Fishing Gears and Practices in the Bukbhora Oxbow Lake: Implications for Biodiversity Conservation in South-west Bangladesh

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| **Fact Identification** | **Relationship Identification** | **Relationship Representation** |
| Among 16 fishing gears, 5 were found illegal in this study due to mesh size and destructive behavior towards fish biodiversity. | Relationship: Among 16 fishing gears, 5 were found illegal in this study due to mesh size and destructive behavior towards fish biodiversity. | Illegal fishing gears (objects) [:quantity] 5 (quantity) [:among] 16 (quantity) [:found\_in] study (context) [:due\_to] mesh size (property) [:due\_to] destructive behavior (property) [:towards] fish biodiversity (impact). |
| Except some, majority fish species trapped in the recorded fishing traps were Small Indigenous Species. | Relationship: Except some, majority fish species trapped in the recorded fishing traps were Small Indigenous Species. | Fish species (objects) [:trapped\_in] fishing traps (objects) [:majority] Small Indigenous Species (category) |
| Fishing hooks and lines were used to catch carnivorous fish species mainly. | Relationship: Fishing hooks and lines were used to catch carnivorous fish species mainly. | Fishing hooks and lines (objects) [:used\_to\_catch] carnivorous fish species (category). |
| Wounding fishing gears were used for wounding large size fishes during heavy flood or when water level becomes low. | Relationship: Wounding fishing gears were used for wounding large size fishes during heavy flood or when water level becomes low. | Wounding fishing gears (objects) [:used\_for] wounding large size fishes (activity) [:during] heavy flood (condition) [:when] low water level (condition). |
| Bukbhora Baor (23.1759° N, 89.1170° E) is one of the prominent oxbow lakes located in Jashore Sadar Upazila. | Relationship: Bukbhora Baor (23.1759° N, 89.1170° E) is one of the prominent oxbow lakes located in Jashore Sadar Upazila. | Bukbhora Baor (location) [:coordinates] (23.1759° N, 89.1170° E) (coordinates) [:type] oxbow lake (type) [:located\_in] Jashore Sadar Upazila (location). |
| The catch per unit effort (CPUE) of the angling gears was taken dependent on the weight of fish discovered amid an angling day (kg gear-1haul-1) for the various species consolidated and the gear efficiency (kg gear-1person-1haul-1) additionally assessed based on the weight of fish got and a number of individuals drew in with each fishing gear per hour. | Relationship: The catch per unit effort (CPUE) of the angling gears was taken dependent on the weight of fish discovered amid an angling day (kg gear-1haul-1) for the various species consolidated and the gear efficiency (kg gear-1person-1haul-1) additionally assessed based on the weight of fish got and a number of individuals drew in with each fishing gear per hour. | CPUE (measurement) [:dependent\_on] weight of fish (measurement) [:during] angling day (time period) [:for] various species (category)  Gear efficiency (measurement) [:assessed\_based\_on] weight of fish (measurement) number of individuals (count) [:per] fishing gear (objects) [:per] hour (time period). |
| A total of thirty fishermen in the chosen baor area were surveyed using a basic random sampling procedure and questionnaire interviews in order to gather data. | Relationship: A total of thirty fishermen in the chosen baor area were surveyed using a basic random sampling procedure and questionnaire interviews in order to gather data. | Fishermen (identity) [:quantity] thirty (quantity) [:surveyed\_in] chosen baor area (location) [:using] basic random sampling procedure (method) questionnaire interviews (method) [:to] gather data (purpose) |
| A measuring scale was used as a tool to measure mesh size of existing fishing gears. | Relationship: A measuring scale was used as a tool to measure mesh size of existing fishing gears. | Measuring scale (tool) [:used\_as] tool (role) [:used\_to\_measure] mesh size (property) [:of] existing fishing gears (objects). |
| Direct observation was conducted to record data on fishing gear like shape and mesh size (cm) of fishing gears. | Relationship: Direct observation was conducted to record data on fishing gear like shape and mesh size (cm) of fishing gears. | Fishing gear (objects) [:data\_recorded] shape (property) mesh size (property) [:unit] cm (unit) |
| Information about the price of fishing gear, species catch by individual gear, catch per unit effort (CPUE)/day, and operation period of individual fishing gear were collected through interviewing with fishermen. | Relationship: Information about the price of fishing gear, species catch by individual gear, catch per unit effort (CPUE)/day, and operation period of individual fishing gear were collected through interviewing with fishermen. | Price (property), species catch (property) [:by] individual gear (objects), catch per unit effort (CPUE) [:unit] day (unit), operation period (property) [:by] individual fishing gear (objects), operation period (property) [:by] individual fishing gear (objects) [:of] fishing gear (objects) |
| All the data were accumulated to analyze the findings. | Relationship: All the data were accumulated to analyze the findings. | Data (objects) [:accumulated] analyze findings (purpose) |
| Tabular technique was applied by using simple statistical tools such as percentages and averages. | Relationship: Tabular technique was applied by using simple statistical tools such as percentages and averages. | Data (objects) [:analyzed\_using] tabular technique (method) [:applied\_using] percentages (tool) averages (tool). |
| The fishery of the ox-bow lake is multispecies and multigear in nature. | Relationship: The fishery of the ox-bow lake ≡ multispecies and multigear in nature. | Fishery (activity) ≡ multispecies (property) multigear (property). |
| Fishermen use numerous types of fishing gears for fishing based on seasons and water depth of the baor. | Relationship: Fishermen use numerous types of fishing gears for fishing based on seasons and water depth of the baor. | Fishermen (identity) [:use] fishing gears (objects) [:for] fishing (activity) [:based\_on] seasons (time period), water depth (property) [:of] baor (location). |
| It was observed that a huge number of fishes was caught by seine net (Ber jal) and the rare species were damaged through these bulk catches and it is considered as one of the most detrimental gears compared to others. | Relationship: It was observed that a huge number of fishes was caught by seine net (Ber jal) and the rare species were damaged through these bulk catches and it is considered as one of the most detrimental gears compared to others. | Seine net (Ber jal) (objects) [:caught] huge number of fishes (quantity).  Rare species (category) [:damaged\_by] bulk catches (activity)  Seine net (Ber jal) (objects) [:considered\_as] most detrimental gears (property) [:compared\_to] other gears (objects). |
| The catch per unit effort (CPUE) is the average daily catch per gear type standardized per fishing unit. | Relationship: The catch per unit effort (CPUE) is the average daily catch per gear type standardized per fishing unit. | CPUE (measurement) [:is] average daily catch (measurement) [:per] gear type (category) [:standardized\_per] fishing unit (unit). |
| CPUE is influenced by several factors, primarily the type of gear used and its efficiency, how many hours it is operated for in a day, weather conditions, and location of fishing. | Relationship: CPUE is influenced by several factors, primarily the type of gear used and its efficiency, how many hours it is operated for in a day, weather conditions, and location of fishing. | CPUE (measurement) [:influenced\_by] gear type (property), gear efficiency (property), operation hours (property) [:per] day (unit), weather conditions (property), fishing location (location). |
| This type of fishing gear was made from bamboo plate with twine. | Relationship: This type of fishing gear was made from bamboo plate with twine. | Fishing gear (objects) [:made\_from] bamboo plate (material), [:with] twine (material). |
| Fish traps are not considered as destructive gear unless they create any barrier on the migratory route of fish. | Relationship: Fish traps are not considered as destructive gear unless they create any barrier on the migratory route of fish. | Fish traps (objects) [:not\_considered\_as] destructive gear (property) [:unless] creates barrier (activity) [:on] migratory route (property) [:of] fish (objects). |
| Vair is a long box-like trap with a door extending from its base to its apex used in shallow portions of the baor. | Relationship: Vair is a long box-like trap with a door extending from its base to its apex used in shallow portions of the baor. | Vair (objects) [:type] long box-like trap (property) [:has] door (property) [:extending\_from] base (property) [:to] apex (property) [:used\_in] shallow portion (location) [:of] baor (location). |
| The fishing gear is made of split bamboo sticks tied with creeper or cane. | Relationship: The fishing gear is made of split bamboo sticks tied with creeper or cane. | Fishing gear (objects) [:made\_of] split bamboo sticks (material) [:tied\_with] creeper (material), cane (material). |
| There is a small opening at the apex for collecting fish. | Relationship: There is a small opening at the apex for collecting fish. | Fishing gear (objects) [:has] small opening (property) [:at] apex (location) [:for] collecting fish (purpose). |
| In front of Vair, a barrier is created with split bamboo made Bana. | Relationship: In front of Vair, a barrier is created with split bamboo made Bana. | Vair (objects) [:has] barrier (objects) [:in\_front] [:made\_with] split bamboo (material) [:type] Bana (type). |
| The trap is checked every one or two hours. | Relationship: The trap is checked every one or two hours. | Trap (objects) [:checked\_every] one hour (time interval) two hours (time interval). |
| The fishing gear is rectangular box-shaped. | Relationship: The fishing gear is rectangular box-shaped. | Fishing gear (objects) [:shape] rectangular box (shape). |
| The fishing gear is made of split bamboo tied with jute rope or cane. | Relationship: The fishing gear is made of split bamboo tied with jute rope or cane. | Fishing gear (objects) [:made\_of] split bamboo (material), [:tied\_with] jute rope (material), cane (material). |
| Kholsun consists of two doors from its apex for fish opening. | Relationship: Kholsun consists of two doors from its apex for fish opening. | Kholsun (objects) [:consists\_of] two doors (property) [:from] apex (location) [:for] fish opening (purpose). |
| There is a small opening at its apex for collecting fish. | Relationship: There is a small opening at its apex for collecting fish. | Fishing gear (objects) [:has] small opening (property) [:at] apex (location) [:for] collecting fish (purpose). |
| It is usually set in the shallow part of the Baor with the help of bamboo pole or tree branches during early morning or evening. | Relationship: It is usually set in the shallow part of the Baor with the help of bamboo pole or tree branches during early morning or evening. | Fishing gear (objects) [:set\_in] shallow part (location) [:of] Baor (location), [:set\_with] bamboo pole (tool), tree branches (tool) [:set\_during] early morning (time period), evening (time period). |
| The fishing gear is basket-shaped, made of split bamboo with two or three entrances. | Relationship: The fishing gear is basket-shaped, made of split bamboo with two or three entrances. | Fishing gear (objects) [:shape] basket (shape) [:made\_of] split bamboo (material) [:has] two entrances (property), three entrances (property). |
| There is an opening on the trap for collecting fish. | Relationship: There is an opening on the trap for collecting fish. | Trap (objects) [:has] opening (property) [:for] collecting fish (purpose). |
| The trap is sunken 1 to 1.5 feet below the water surface in shallow areas with small currents during early morning and evening. | Relationship: The trap is sunken 1 to 1.5 feet below the water surface in shallow areas with small currents during early morning and evening. | Trap (objects) [:sunken] 1 foot (depth) [:below] water surface (location), 1.5 feet (depth) [:below] water surface (location) [:set\_in] shallow areas (location) [:has] small current (property) [:set\_during] early morning (time period), evening (time period). |
| The trap is checked every one or two hours. | Relationship: The trap is checked every one or two hours. | Trap (objects) [:checked\_every] one hour (time interval), two hours (time interval). |
| The terms kochal (Seine net) and komor (drag net) fishing were local names in the study area, mostly used for fishing carps. | Relationship: The terms kochal (Seine net) and komor (drag net) fishing were local names in the study area, mostly used for fishing carps. | Kochal (objects) [:local\_name\_for] seine net (objects), komor (objects) [:local\_name\_for] drag net (objects), [:used\_for] fishing carps (purpose), fishing carps (purpose). |
| Initially, the kochal jal (seine net) is operated for 5 to 10 days, and runaway fish take shelter in bush parks (locally called komor) in nearby areas. | Relationship: Initially, the kochal jal (seine net) is operated for 5 to 10 days, and runaway fish take shelter in bush parks (locally called komor) in nearby areas. | Kochal jal (objects) [:operated\_for] 5 days (duration), 10 days (duration).  Runaway fish (objects) [:take\_shelter\_in] bush parks (location) [:locally\_called] komor (local name). |
| At that stage, fishers stop operating the kochal jal and start fishing in the komors by encircling them with komor jal (drag net). | Relationship: At that stage, fishers stop operating the kochal jal and start fishing in the komors by encircling them with komor jal (drag net). | Fishers (identity) [:stop\_operating] kochal jal (objects) [:start\_fishing\_in] komors (location) [:encircled\_with] komor jal (objects). |
| Maximum fishers had pieces of kochal jal and komor jal (2-5 pieces) and those were jointed together (each of 18 fishers groups separately work) during the harvesting period. | Relationship: Maximum fishers had pieces of kochal jal and komor jal (2-5 pieces) and those were jointed together (each of 18 fishers groups separately work) during the harvesting period. | Fishers (identity) [:had] kochal jal pieces (objects), komor jal pieces (objects) [:quantity] 2-5 pieces (quantity) [:jointed\_together]  Fishers groups (identity) [:quantity] 18 (quantity) [:work\_separately] |
| Komor fishing (drag netting) was principally adopted as a method to catch the remaining fishes in the baor after kochal fishing. | Relationship: Komor fishing (drag netting) was principally adopted as a method to catch the remaining fishes in the baor after kochal fishing. | Komor fishing (activity) [:adopted\_as] method (purpose) [:to\_catch] remaining fishes (objects) [:after] kochal fishing (activity). |
| Different fishing gears such as entangle net of selective mesh size, borshi, ghuni/britti, etc. were used for SIS harvesting. | Relationship: Different fishing gears such as entangle net of selective mesh size, borshi, ghuni/britti, etc. were used for SIS harvesting. | Fishing gears (objects) [:used\_for] SIS harvesting (purpose) [:includes] entangle net (objects), borshi (objects), ghuni (objects), britti (objects), [:has] selective mesh size (property). |
| Seine net was the most destructive gear as large amounts of fish were caught per tow by it, and there is a possibility of extinguishing rare species if used in the early breeding season. | Relationship: Seine net was the most destructive gear as large amounts of fish were caught per tow by it, and there is a possibility of extinguishing rare species if used in the early breeding season. | Seine net (objects) [:considered\_as] most destructive gear (property)  Seine net (objects) [:catches] large amount of fishes (quantity) [:per] tow (unit)  Seine net (objects) [:has\_possibility] extinct rare species (impact) [:if\_used\_in] early breeding season (time period). |
| The choice of fishing gears by the fishermen depends on the types of fish species available and the physical condition of the baor. | Relationship: The choice of fishing gears by the fishermen depends on the types of fish species available and the physical condition of the baor. | Fishing gears (objects) [:choice\_depends\_on] fish species (objects), physical condition (property) [:of] baor (location). |
| Different shapes of fishing gears were listed: rectangular shape (ber jal, current jal), conical shape (jhaki jal), square shape (khora jal), and triangular shape (thela jal) with mesh sizes ranging from 0.5 to 10 cm. | Relationship: Different shapes of fishing gears were listed: rectangular shape (ber jal, current jal), conical shape (jhaki jal), square shape (khora jal), and triangular shape (thela jal) with mesh sizes ranging from 0.5 to 10 cm. | Fishing gears (objects) [:shape] rectangular (shape) [:examples] ber jal (objects), current jal (objects)  Fishing gears (objects) [:shape] conical (shape) [:examples] jhaki jal (objects)  Fishing gears (objects) [:shape] square (shape) [:examples] khora jal (objects)  Fishing gears (objects) [:shape] triangular (shape) [:examples] thela jal (objects)  fishing gears (objects) [:mesh\_size\_range] 0.5 cm (minimum) to 10 cm (maximum). |
| Maximum fishing efforts per day were correlated with the highest catch composition of any fishing gear. | Relationship: Maximum fishing efforts per day were correlated with the highest catch composition of any fishing gear. | Fishing efforts (activity) [:correlated\_with] catch composition (property) [:of] fishing gear (objects). |
| Most fishermen use ber jal, komar jal, current jal, and thela jal to catch fish for their livelihood. | Relationship: Most fishermen use ber jal, komar jal, current jal, and thela jal to catch fish for their livelihood. | Fishermen (identity) [:use] ber jal (objects), komar jal (objects), current jal (objects), thela jal (objects) [:for] livelihood (purpose). |
| Fishing (harvesting of carp species) starts in November-December and is completed by 30th June in each season. | Relationship: Fishing (harvesting of carp species) starts in November-December and is completed by 30th June in each season. | Fishing (activity) [:starts\_in] November (time period), December (time period) [:completed\_by] 30th June (date). |
| Fishermen caught fish throughout the year, but a comparatively higher amount of fish was caught during the winter season (November to January), which aligns with findings by Farid et al. | Relationship: Fishermen caught fish throughout the year, but a comparatively higher amount of fish was caught during the winter season (November to January), which aligns with findings by Farid et al. | Fishermen (identity) [:caught\_fish] throughout the year (time period).  Higher fish catch (quantity) [:during] winter season (time period) [:from] November (month) [:to] January (month) |
| Fishermen mainly operate their traps in the rainy season when the water flows in the baor are much higher. | Relationship: Fishermen mainly operate their traps in the rainy season when the water flows in the baor are much higher. | Fishermen (identity) [:operate\_traps] in rainy season (time period)  Baor (location) [:has] higher water flows (property) [:during] rainy season (time period). |
| Different types and sizes of traps are used by the fishermen, depending on the target species and their sizes, water depth, and seasonality. | Relationship: Different types and sizes of traps are used by the fishermen, depending on the target species and their sizes, water depth, and seasonality. | Traps (objects) [:types\_and\_sizes\_depend\_on] target species (objects), species sizes (property), water depth (property), seasonality (time period). |
| The operation method of these traps is more or less similar. | Relationship: The operation method of these traps is more or less similar. | Traps (objects) [:operation\_method] similar (property). |
| Due to easy operating methods and cheap rates, marginal fishermen widely use these traps for commercial and household consumption purposes. | Relationship: Due to easy operating methods and cheap rates, marginal fishermen widely use these traps for commercial and household consumption purposes. | Traps (objects) [:used\_by] marginal fishermen (identity) [:due\_to] easy operating method (property), marginal fishermen (identity) [:due\_to] cheap rate (property), commercial purposes (purpose), household consumption (purpose). |
| The size of the gear, mesh size, craft, and fishermen required for operation vary with the fishing method and targeted fish species. | Relationship: The size of the gear, mesh size, craft, and fishermen required for operation vary with the fishing method and targeted fish species. | Gear size (property) [:varies\_with] fishing method (activity), targeted fish species (objects)  Mesh size (property) [:varies\_with] fishing method (activity), targeted fish species (objects)  Craft (objects) [:varies\_with] fishing method (activity), targeted fish species (objects)  Fishermen (identity) [:required\_varies\_with] fishing method (activity), targeted fish species (objects). |
| It depends on the season, water level, size of fish, fishing area, and availability of fishermen. | Relationship: It depends on the season, water level, size of fish, fishing area, and availability of fishermen. | Fishing method (activity) [:depends\_on] season (time period), water level (property), fish size (property), fishing area (location), availability of fishermen (identity). |
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