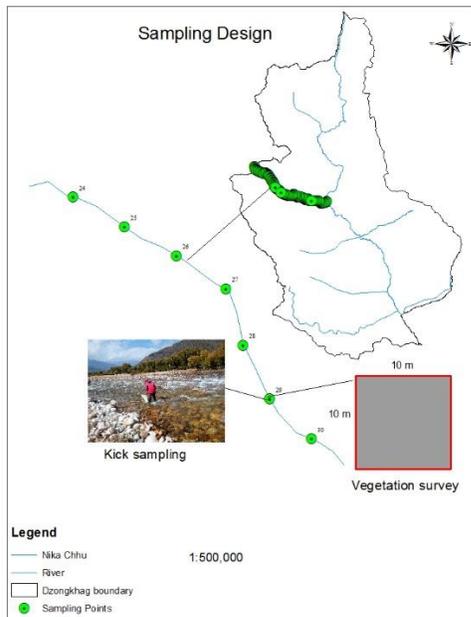**Progress report of field survey works along Nika Chhu under Trongsa District**

Objective 1. Asses the baseline status of fish diversity and its distribution along Nika Chhu.

Nika Chhu is divided into three Zones, Mangde Chhu confluence to Tsheringma Drupchu confluence (Zone I), Drangla to Chendipjee chorten (Zone II), and Chendipjee village till Busa village (Zone III). Within the zones, the river is divided into subplots at 200 meters distance (Map 1). To assess the diversity of fishes, cast net, river diversions, electric shocking, and stone flipping techniques were used.

Map 1. Sampling design

a. Cast net method

Using the local fishermen, cast net is used for catching the fishes along Nika Chhu basin. In every plot, cast nets are thrown for five times and the fish caught per throw are recorded for examining their population dynamics and the fishes are released back after taking photograph and necessary recordings.

Photo 1. Fisherman casting net

b. River diversion method

Wherever possible, river diversion and flipping of stone are carried to get new species in Nika Chhu and its tributaries.

c. Electric shocking

Electric shocking is done in cascade habitat of river to get more diversity of fishes, particularly catfish.

Photo 2. Electric shocking

d. Specimen preservation

Unidentified specimens of fishes and macro-invertebrates were preserved in formalin and alcohol spirit with proper labeling. The specimens are further transported to College of Natural Resources laboratory for identification and longer preservation.

Objective 2. Identify different riverine habitats of fishes along Nika Chhu.

Riverine habitats of Nika Chhu River was assessed based on water quality (temperature, P^H, macro-invertebrates) and vegetation along river sides.

a. Water Quality assessment

In every sampling plot, the temperature and P^H of the river was measured using thermometer and P^H measurement kids. Along with the physical parameters, biological organisms like macro-invertebrates are used for judging the water quality. The macro-invertebrate sampling is done using kick & flipping stone techniques.

Photo 3. Riverine habitat

b. Vegetation Survey

Within 10X10 meter plot of river side, all trees, shrubs, saplings are recorded to know the vegetation dominance, crown density, and relation of fish population with vegetation type.

Observations

Two species of fish, seven orders and 17 families of macro-invertebrates were found in Nika Chhu till date. Brown trout dominates Zone II and III, whereas, Snow Trout in zone I.

Photo 4. Brown Trout (Salmo trutra ferio)

Photo 5. Snow trout (Schizothorax spp)

Family listing of Macro-invertebrates in Nika Chhu River Basin

Sl.no	Orders	Family	Remarks
1	Trichoptera	Rhyacophilidae	Hydropsychidae, Scirtidae, Planariidae dominates the Nika Chhu River followed by Perlidae, Perlinae, Periodidae, Ephemerellidae, and Heptaginadae.

Where, Epiophlebiidae and Gomphidae are found in upper region of the River. |
		Psychomyiidae	
		Hydropsychidae	
2	Plecoptera	Perlidae	
		Perlinae	
		Periodidae	
3	Diptera	Tipulinae	
		Psychodidae	
		Limniidae	
		Ceratopogonidae	
4	Ephemeroptera	Ephemerellidae	
		Heptageniidae	
5	Odonata	Epiophlebiidae	
		Gomphidae	
6	Coleoptera	Scirtidae	
7	Planarian	Planariidae	