SCOPE OF WORK

ASSESSMENT OF AQUATIC RESOURCE BASED LIVELIHOODS, PRACTICES, AND ECOTOURISM DEVELOPMENT IN SELECTED WATERSHEDS ACROSS PAANI TARGET RIVER BASINS.

PROPOSED PERSONNEL:	TBD
POSITIONS:	Socio-Economist Fishery Biologist Ecotourism Expert
LEVEL OF EFFORT:	STTA (123 days)
PERIOD OF PERFORMANCE:	October 2017-March 2018
BASE OF OPERATIONS:	Kathmandu, Nepal, with field visits to relevant river basins

The USAID Paani Program, also known as the पानी परियोजना, is a 5 year, $25 million project in Nepal. Water is the single most important natural resource underpinning Nepal's economy and livelihoods. The sustainable management of water resources in Nepal depends on addressing climate change and protecting healthy, biodiverse ecosystems. Paani aims to enhance Nepal's ability to manage water resources for multiple uses and users through climate change adaptation and the conservation of freshwater biodiversity. Paani focuses at the watershed, basin, and national scales. The project has approximately $5 million in grants and activity procurements. It's goal will be reached by meeting the following objectives:

- Reduce threats to freshwater biodiversity in the Karnali, Mahakali, and Rapti river basins.
- Increase the ability of targeted human and ecological communities to adapt to the adverse impacts of climate change through improved water management.

This will be accomplished through 11 strategic approaches and supporting activities, as defined in Section C, Statement of Work (SOW) of the Paani Contract and annual work plans, which provide the framework and overall guidance for all Paani team members. The assessment results contribute to improve (a) local management of capture fisheries (b) local capacity for water management and c) characterizing habitats and their carrying capacity for capture fisheries and alternative fish farming opportunity. The assessment informs basin level planning of hydropower, gravel mining, roads and irrigation that affect natural system and mobility of aquatic biodiversity.

Although exact statistics are not available on production and market value of traditional fishing, production estimates and market values are increasingly available. Fisher folk living scattered along lakes and rivers use traditional gear mainly for subsistence fishing. It has been estimated that there are some 395,000 ha of rivers and about 5,000 ha of small and medium sized lakes in the country. Fishing also takes place in irrigated paddy fields and marginal swamp areas, together constituting some 410,000 ha (FAO, 1995/1996). As indicated in the preceding paragraph, the present study will focus mainly on natural fisheries, although it will examine aquaculture to the degree needed to provide relevant context and/or insight for the management of natural fisheries.

Commercial aquaculture has a relatively recent history in Nepal. It first started on a very small scale with imports of fish seed from India in the mid-1940s. However, further development only begun in the 1960s and progress that is more significant only after 1980s. Over years, Nepal has imported various fish species and some indigenous carps are brought under cultivation. In Nepal, fishery sector contributes some 1.5% of the Agriculture GDP. The gross values of fishery outputs estimated to be worth US$ 29.3 million (FAO, 1995/1996).

This survey will help assess capture fishery pressures on key freshwater systems to inform stakeholders help manage through informed decision process without compromising with watershed health.

It will also help assess the potential value of alternative livelihood options, e.g., eco-tourism such as rafting, home stay management, sport fishing, restaurants etc.

The results of this assignment contribute to fill the gap and explore opportunity under different strategic approaches. The result contribute to local planning and policy, training and capacity building, improved management of capture fisheries and inform basin level planning.

Purpose:

The overall purpose of this assignment is to develop a strategic approach to promoting local economies and enterprises that are "friendly" to—and help reduce threats to—aquatic biodiversity and sustainable fisheries. The assignment will conduct:

- an analysis of the current "carrying capacity" of the river system in terms of fishing
- a value chain analysis of fishing industry (in particular in the natural rivers) in the Paani watershed area
- an examination of existing & alternative livelihood options including ecotourism.

The main focus of this work will be on natural fisheries but will take the existing commercial aquaculture practices into consideration as well. The primary focus will be on the Karnali river basin (where Paani is working in 8 watersheds). The other two river basins may be included if time allows.

Specific objectives include identify and analyze:

- The most important social and/or ecological assets/strengths and weaknesses related to aquatic natural resources including capture fisheries, and
- The most important aquatic biodiversity focal interests, problems/threats, and opportunities, both policy- and market-related elements
- The potential livelihood related interventions including ecotourism
- The engagement of potential "champions" individuals or groups.
- The information to develop strategic approaches, especially with regard to strengthening environmentally friendly local economies and enterprises.

Overall Tasks:

- Assess fishing carrying capacity of the major rivers for fishing
- Document local market networks and vendors engaged in fish industry and marketing
- Identify market potential areas and fish market places and restaurants
- Identify vendors, fisher folks involved in fishing and sales
- Document market scope and value for potential livelihood and alternative options, farm gate prices, principal fishery products and existing as well as potential ecotourism products and services (e.g. fly-fishing) from each of the River Basin (e.g. various ecotourism options),
- Identify and describe local fishery management practices with particular focus on their impacts in Paani's first priority watersheds,
- Identify governance issues affecting fisheries (including policies, regulations, rules-in-use, and formal and informal institutions), and any gaps in their implementation.
- Identify and describe potential champions for improving sustainable capture fisheries
- Identify the socio-economic status of fisher folks
- Identify the organization of fisher folks and their voice and concern
- Identify the women role in fishing, marketing and access over the income (money from fish selling)

Specific Tasks:

- Describe, in a general way, the market for fish, including scale, present status, trends, and key drivers of change for each of the major fishery resources, drawing on information on collection or buying points locally used by fishers and any additional information available on in Paani target river basin and watershed areas.
- Describe in a general way the relative importance (a) of commercial and subsistence fishing (e.g., related to nutrition), and (b) of capture fisheries and aquaculture.
- Identify the different products sold, e.g., by phyla or order (fish, mollusks, etc.), species (for major commercial species), by kind of product (fresh, dried, smoked, etc.), and source (e.g., capture or aquaculture)
- Identify existing and potential collection and market places and consumers for fish and related aquatic products.
- Supplement the above descriptions with quantitative information on fishery areas, fish, and fishery products, source areas and markets, including volumes and prices for different products, numbers of fishers, types of gear, etc. these data would be captured during the field study and complemented by secondary resource data although few exist.
- Gather qualitative estimates of the potential market demand for fish and fishery products captured by local community
- Describe the process through which fishers and marketers supply fish and fishery products to end markets, including the costs of such marketing process and any infrastructure or equipment.
- Describe the major policies and legal and institutional frameworks, including local structures, licensing, and rules in use, that govern local fisheries.
- Describe fisheries management system(s) and measures in place to sustain local fisheries (e.g. closed seasons or areas, gear, other restrictions) and asses their effectiveness.
- Explore and analyze current and past experience in promoting ways to operate sustainably, also considering local traditions, customs, and norms.
- Explore, and assess the practicality of, new opportunities for achieving sustainable fisheries (e.g., sport fishing, aquaculture, alternative river-based livelihoods [e.g., rafting, river-based home stays, etc.], and alternative livelihoods outside the fisheries sector to reduce fishing pressure, and others.
- Assess (a) the market dynamics of supply and demand with regard to fisheries, ecotourism, and other river-based livelihood alternatives, and (b) related issues, including bottlenecks, and irregularities, and other gaps with respect to illegal fishing practices, licensing, conflicts, production problems, and marketing constraints.
- Identify potential adverse impacts of the system on the sustainable management of aquatic ecosystem, environment, and social structure, including the vulnerability of particular species to fishing pressure, impacts on habitats, bycatch, and key ecological behaviors (e.g., feeding, spawning, etc.).
- Identify potential "champion", individuals or groups for conservation of river ecosystems and their functions/services and community resilience, including both men and women, and members of traditionally "excluded" groups.
- Assess and identify any existing or potential physical safety risks associated with livelihood and alternative potential livelihood options.

Assessment approach:

- The Consultant (s) will refer documents available through the Paani project – watershed profile, review of literatures related to aquatic biodiversity, fishery and value chain those published based on the studies carried out in Nepal and western Nepal in particular.
- Organize an inception workshop inviting multiple stakeholders for sharing the results of the review of secondary data, proposed concept and methodology and milestones and get

feedback in fine-tuning the initial concept, technical approach, identify watershed, sites and target community, local market and information networks and consumers' preferences.

- Develop research methodology, identify watershed and research sites to carry out the study across river basins
- Draft community survey formats incorporating forms and logistics, work force, equipment needs and estimate cost involvement; the format will be used for key informant interviews and the like
- Devise tools to document local uses and users, champions and local institutions, local market networks and areas with market values.
- Carry out rapid assessment of potential areas with reported capture fishery practices which could potentially be linked with eco-tourism and livelihoods of the fishers' community
- Design topical checklists for a quantifiable assessment of the existing capture fishery, local uses and connection with ecotourism
- Mapping of the existing and potential capture fishery sites, collection points and market places in the Paani target river basin, watershed areas.

Working and reporting relationships:

The Consultant team will work under the overall guidance of the Paani Chief of Party or his designee and the supervision of (and in close collaboration with) the Freshwater Fisheries Specialist. They will collaborate with other team members and partners as required.

The consultants are expected to work independently under the guidance of the consultant Team Lead and report from time to time on progress to the Paani Chief of Party. Nonetheless, since this assignment requires background information from Paani and consulting teams undertaking different assignments, it is highly recommended that the consultants work closely together to ensure each one's work complements and avoid overlaps.

Research team:

Socio-economist	(Team Lead)	60 days
Ecotourism Expert		39 days
Fisheries Biologist		24 days

Qualifications:

- The Team Lead should have a minimum of Masters' Degree specialized in Socio-economics or relevant discipline with a minimum of 12 years work experience on value chain assessment. The Fisheries Biologist should have at least a MSc in Fishery Biology or relevant discipline with a minimum of 10 years work experience on fishery research and development; The Ecotourism Expert will have Masters' Degree in a relevant discipline and considerable experience on the designing and promotion of ecotourism
- Experts with International experience are preferred.
- Team members having experience working with multi-stakeholders, communities and private sectors preferred;
- Team members must have demonstrated exploration and analytical skills;
- Team members should be in good physical condition, able and willing to walk if necessary for field confirmation of indications or understandings gathered from background documentation and discussions; able to cope agreeably with field conditions that may include limited amenities and logistic support;
- Excellent spoken and written English.

If an international TL is recruited, the project will make available an interpreter for the field work.

Deliverables:

1. **Develop and share the inception report that broadly includes:**

- Proposed conceptual framework for the value chain assessment
- Global, national and local experience of value chain analysis relating to the freshwater biodiversity inclusive of local origins
- Assessment methodology, process and required supports from the PANI Project
- Policy provision and analytical approach to analysis of gaps between national policies and local practices
- Analysis of findings relevant to ecotourism development, with preliminary conclusions and recommendations on the potential for ecotourism development. This will include an analytic view and approach and a draft scope of work (terms of reference) to assess potential for ecotourism development linking with freshwater biodiversity and natural water resource management for the future
- Table of content of the main document
- Clearly outlined deliverable and milestones with time frame

2. **Draft assessment report**

- ✓ The context, rational and objective
- ✓ Assessment approach and methodology
- ✓ Main findings

    - ❖ Fishing practices, market value of native fish products
    - ❖ Local fish production and types of fishery products developed for market sale
    - ❖ Fishery and market champions, value chain actor analysis
    - ❖ Local norms, standards and values and institutions
    - ❖ Impacts of policy provisions, market and non-market factors in production, livelihoods and incomes and benefit sharing
    - ❖ Market networks and mapping of actors involved in marketing
    - ❖ Provisional recommendation – market networks, outlets, scope for market promotion and
    - ❖ Barrier analysis on the production, transportation and marketing of fish and fishery products that demotivate fishing communities and thereby threat to conservation

3. **Sharing and dissemination of final report**

    - ❖ Local practices
    - ❖ Value chains, champions and value chain actors
    - ❖ Local norms, values and standard and formal policy
    - ❖ Barrier analysis and mitigation measures
    - ❖ Recommendation of priority action for the short, medium and longer terms