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TERMS OF REFERENCE

Consultant to conduct study on the impact of Pangasius aquaculture on the wetlands of the Mekong Delta

Project code: VN097601 – VZ6109

1. Background of project

The project: “**Establishing a Sustainable Pangasius Supply Chain in Vietnam - SUPA**” runs from April 2013 to March 2017. The SUPA Project has been designed with the objectives:

Overall Objective:

- By 2020 the Pangasius producing, processing and exporting sector in Vietnam is environmentally, economically and socially sustainable.

Specific objectives:

- By end of the action at least 70% of the targeted middle to large Pangasius producing and processing SMEs, 30% of the feed producers and small independent production SMEs are actively engaged in Resources Efficiency and Cleaner Production (RE-CP);
- At least 50% of targeted processing SMEs are providing sustainable products compliant with the ASC standard to EU and other markets.

Aquaculture plays an important role of Vietnamese economy with the fact that Vietnam’s seafood exports have expanded sharply in recent years, reaching approximately US\$ 8 billion in value, and 6.8 million tonnes by weight in 2014. It has now become one of the world’s top five global seafood producers and exporters. Around a million metric tonnes (MT) of Pangasius is harvested in some 5,500 hectares. In 2014, Pangasius exports reached US\$ 1.7 billion, up 0.4% on the previous year, and accounting for more than a quarter of all seafood exports. Since its expansion in Vietnam, major environmental impacts of aquaculture have been associated mainly with high-input high-output intensive systems, the effects of which included discharge of suspended solids, and nutrient and organic enrichment of recipient waters resulting in build-up of anoxic sediments, changes in benthic communities and the eutrophication of river catchments. One of its significant impact is that aquaculture has resulted in physical degradation of habitats, biodiversity as well as water quality through conversion of mangrove forests and destruction of wetlands. As a result, WWF conducts a study about the major impacts of Pangasius aquaculture on the wetlands in Mekong Delta. This research will provide an overall analysis and understanding of Pangasius aquaculture to wetland and its contribution will be the baseline knowledge for decision-maker by considering possible adverse environmental impacts are identified and avoided while planning for aquaculture areas.

2. Objective of the consultancy

- A consultant (or consultants) is required to identify the significant impacts of Pangasius aquaculture to the wetlands.

- This term of reference addresses the roles and responsibilities of the consultant(s) who are required to carry out the above-mentioned task.

3. Scope of work/ Major responsibility

- Define typical study sites in which Pangasius aquaculture is practiced nearby or surrounded by wetlands.
- Review current Pangasius aquaculture practices in the selected sites to identify short term and long term impacts of aquaculture on wetlands following the parameters: water quality and biodiversity and physical degradation of wetland.
- Desk-study and collect secondary data form DARD and Natural Resources and Environment Department or other previous researches on water quality,
- Field study for sampling the water quality at study sites combine with data collected from DARD and Natural Resources and Environment Department for further assessment and prediction.
- Field study on biodiversity, especially focus on the appearance of some the species listed in IUCN red list according to ASC standards before and after aquaculture practices is conducted on site.
- Desk study and field study of how other physical degradation and habitat disturbance of wetland are impacted since the conversion of wetland to aquaculture.
- Draft and final report of the research.

4. Outputs/ deliverable of performance and time schedule

No	Activity	Expected outputs
1	Meeting with WWF staff	Familiarization with the project and methodology finalization; discussing about work-plan including selecting appropriate survey/sampling sites
2	Collect secondary data and desk study about the sites.	Submit the desk study for WWF staffs to feedback and discuss for field visit.
3	Field trips	-Water quality sampling and analysis + report -Meeting with relevant stakeholders, organizations, ... to get data on pollution load from Pangasius aquaculture - interview to get information on endangered species follow IUCN and Vietnam red list
4	Data analysis	Analyzed data
5	Modeling	Build up and simulate the scenarios for the impacts of Pangasius aquaculture on wetland ecosystem (including impacts from upstream development and climate change).
6	Draft report	Draft reports send to WWF Vietnam and relevant stakeholders in Vietnamese
7	Final report	Final report submits to WWF Vietnam and relevant stakeholders in English and Vietnamese

5. Required profile

Knowledge/Expertise:

- Consultant team should have related background both in environment and society, biology, aquaculture or relevant subjects. At least Master Degree for team leader.
- Consultant team should have strong skills on environmental study and hydrology
- Expert in wetland ecosystem and wetland conservation.
- Background in water quality analysis is a must.
- Expert in modeling.
- Knowledge about ASC standards
- Minimum 5 years' experience in relevant subjects.

Experiences: Strong experience in water resources management, Biology – Environment impact assessment (B-EIA), water quality analysis, wetland expert and aquaculture especially Pangasius aquaculture areas such as Dong Thap, Can Tho, An Giang.

Skills and Abilities: *Skills and Abilities:* Good at English writing report and communication, understand Mekong Delta context.

6. Budget for the service

- All the cost, including consultant fees, travel of consultants, hotel & per-diem are based on EU cost norm version 2013;
- Travel cost for field trip and logistics will be conducted by WWF.

7. Proposal required

- (1) Profile of service provider must be provided (include Operating license if Company/Center/Institute...); some contracts to proven experience in the field of research
- (2) Proposed methodology, work-plan, activities, timeframe and budget included following the template:

No.	Description	Unit (optional)	Quant. (optional)	Rate (optional)	Total	Remarks
1	Consultant fee					
2	Per-diem					
3	Accommodation					
4	Water quality analyzing					
5	Other expenses					
	Sub-TOTAL					
	VAT/PIT (if any)					
	TOTAL					

- (3) CVs of team leader and members;
- (4) Proposal package in English should be sent to:

Aquaculture Programme, WWF Vietnam-Cantho office, 3rd Floor, Center for Services and Technology Transfer, Can Tho University, Campus II, Xuan Khanh Ward, Ninh Kieu Dist., Cantho City or via email: dien.lenguyenxuan@wwf.panda.org not later than 29 February, 2016.