**Brief note on preliminary studies and S&I works for establishing feasibility from techno-economic evaluation**

**Introduction:**

Basin:

The Rushikulya basin originates at an elevation of about 1000 metres near Matabarhi village

from Daringbadi hills in Kandhamal district of Odisha. The place from where the river

originates, Daringbadi is called the ' Kashmir of Odisha '. The river flows in southeast direction

through Ganjam district before finally draining into Bay of Bengal through Chhatrapur block. The total catchment area is 7700 km2

There are eight tributaries of river Rushikulya namely Baghua, Dhanei, Badanadi, Padma, Joro Nadi, Boringa, Kharakhari and Ghodahada. It has no delta as such at its mouth.

Kharakhari River- It originates at an altitude of 400 m. and flows through Khalikote and Chhtrapur

Tehsil. It joins Rushikulya River at Patapur of Purusottampur Block. The drainage area of the river is 387 sq.km and its length from origin to confluence is about 50 km.

Survey& Investigation works:

Minor irrigation project: The area proposed under irrigation for these schemes is below 2000Ha and the source of water is either ground water or from wells or tube wells or surface water lifted by pumps or by gravity flow from head workss. It could also be irrigated from through water from tanks.

The following activities/works are undertaken under survey and investigation and preparation of DPR work:

1.Desktop studies, reconnaissance survey and selection of site.

2.Topographical survey of river including L-section and X-section of river and grid survey of Head works ex: Dam-axis/Barrage axis etc;

3.Command Area Survey, Canal Alignment Survey & Head works survey.

4.Studies of historical Hydrological & meteorological data and Hydrological and Meteorological o Reclamation of Waterlogged Areas

5.Water logging & reclamation measures

a) The problem of waterlogging in the Commands of irrigation projects has affected the

health of soil and reduced the agricultural productivity considerably.

The items of work under this scheme are:

a. Assessment of problem areas in the commands of irrigation projects.

b. Planning and designing for preventive and reclamation measures.

c. Taking up the preventive and remedial activities like land management,

drainage (surface, sub-surface, vertical etc.).

6.Geological and geo-technical investigation including diamond core drilling for construction and foundation investigation.

7.Geo-mapping and logging of bore holes/core by Geological Survey of India (GSI).

8.Construction material investigation and laboratory testing.

9.Property survey of submergence area to calculate the acquisition of land and rehabilitation and resettlement, compensation etc.

10. Irrigation Planning

11.EIA &EMP studies

11. In order to examine the economic viability of the scheme the benefit cost ratio

have to be worked out based on the guidelines given in the Working Group

Report ‘Guidelines for preparation of detailed project reports of irrigation and

multi-purpose projects prepared by Govt. of India, Ministry of Irrigation.

12. preparation of Prefeasibility/ Feasibility Report of Water resources schemes, Design & drawings and preparation of Detailed Project Report.