Terms of Reference
for
Detailed Feasibility Study and Report Preparation of Irrigation Projects

1. Background

Nepal is an agriculture based country, and most of people are involved in the agriculture based profession. The farmers of Nepal have been practicing irrigation to accelerate agricultural production for long time. More than half of the irrigated area in Nepal are built and still managed by the farmers with little or no assistance from the government agency. These projects have been contributing considerably in the national economy and have become the livelihood for the farmers of Nepal. In our country Agriculture sectors contributes 38% of the total GDP employing about 80% of the labor forces.

Irrigation has been the subject of priority throughout the history of periodical planning in Nepal in view of the dominant size of the population depending on agriculture and the tremendous potential of the water resources of the country. Irrigation is one of the major contributors of the agriculture productivity. The Provincial Government of Nepal has been allocating substantial amount of annual budget for the development of Irrigation infrastructure through Department of Water Resources and Irrigation Development. Provincial Government, Gandaki Pradesh has been emphasizing irrigation development in each of its plan and programs. According to 1st five-year plan (2076-2081) of Provincial Policy and Planning Commission, Gandaki Province, it has highly prioritized the role irrigation for elimination of poverty within the province. The agricultural production can be increased using effective irrigation system. According to Agriculture Division, the farmers are getting very low profit per hectare production. To gain much profit, the proper irrigation system is very important. There are lots of challenges and problems in irrigation system like, geography, topography, socio-economy, system and other factors.

Water Resources and Irrigation Development Division, Tanahun (WRIDDOT) is a government organization established under Ministry of Energy Water Resources and Watersupply (MOEWRWS), Gandaki Pradesh, Nepal with a mandate to plan, develop, maintain, operate, manage and monitor different modes of environmentally sustainable and socially acceptable irrigation and drainage systems - from small to larger scale surface systems and from individual to community schemes in Tanahun district. Its ultimate aim is to provide year-round irrigation facilities and increase the irrigable area of the country to higher limits. This giving a primary input in increasing the productivity of the land and providing a major input to the Gross Domestic Product (GDP) and eventually improve the standard of living of the beneficiary farmers. Apart from this the WRIDDOT also has to carry out river training activities to protect the physical infrastructures, settlements, and agricultural lands in the form of river bank protection such that the loss of properties caused by flooding is reduced.

In Gandaki Province, there is total land of 2,197,368 ha out of which only 487,816 ha (22.2%) land is suitable for the agriculture. But, only 370,740 ha (76%) land is being used for agriculture i.e. about 24 % land is barren. At the current situation, out of total agricultural land, about 133,837 ha (36.1%) land is irrigated, out of which 61,833 ha (46.2%) land area is year-round irrigation, and in remaining land, farmers are doing agriculture with the seasonal irrigation collecting water during monsoon. (*Source: First Five Year Plan, Gandaki Province*)

Tanahun District, a part of Gandaki provenance, is one of the seventy-seven districts of Nepal. The district, with Damauli as its district headquarters, lies in between 27° 36' to 28° 5' N latitude and 83° 57' to 84° 34' E longitudes with an area of 1,546 km2 . Its elevation ranges from 187 m above sea level to 2,323 m above sea level and its topography is characterized by northwest to southeast running hill chains with moderate to very steep slope, deeply cut river valleys and gentle to moderate sloped plains. The neighboring districts of Tanahun are Gorkha and Chitwan in east, Chitwan and Nawalpur in south, Kaski and Syanja in west and Kaski and Lamjung in north. The district is full of rivers such as Marsyangdi, Madi, Trishuli, Seti along with other rivulets. Tanahun consists of 3 climatic zone; low tropical, upper tropical and subtropical with an elevation range of below 300m, 300m to 1000m and 1000m to 2000m respectively. Forests covers an area of 78,111.22 ha, agro based area covers an area of 64,061 ha, and pasture land covers an area of 4,306 ha. At the time of the 2011 Nepal census, Tanahun District had a population of 323,288. Of these, 61.9% spoke Nepali, 20.8% Magar, 8.3% Gurung, 4.1% Newari, 1.1% Darai, 0.8% Urdu and 0.7% Tamang as their first language. The district is politically divided into 10 Municipalities, out of which four are urban municipality and six are rural municipalities.

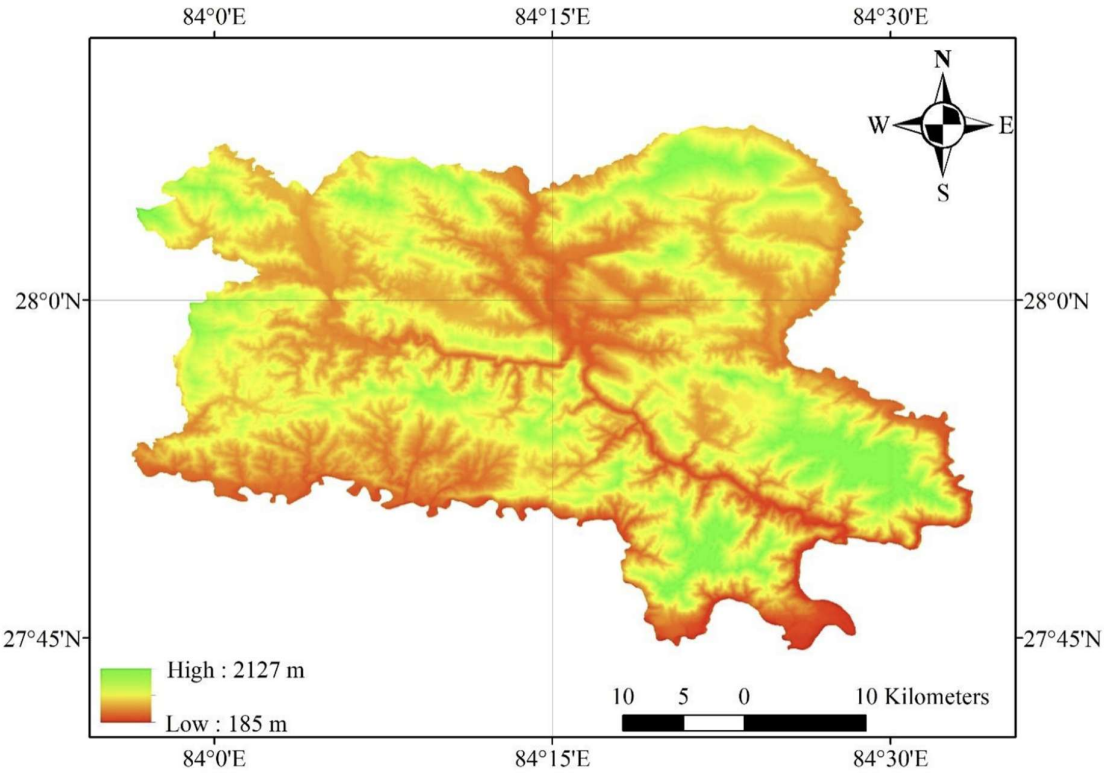

Figure 1: Study area with digital elevation model

The Detail Feasibility Study is the basis for the project implementation and is carried out by a team of experts having engineering, agriculture, environmental, and socio-economic professionals. This study normally forms the basis of financing by Government. The study assesses the potentiality, technical feasibility, environment friendly, economic viability and institutional suitability of the project implementation. WRIDDOT is exploring the potential area for irrigation development as per the irrigation policy. As a follow up action of agricultural development strategy to increase

agricultural production by raising unit yield and expanding higher cropped area from available irrigable area, WRIDDO Tanahun has initiated various irrigation schemes.

The following are such projects requested by the user farmers to WRIDDO Tanahun for assistance from outside agencies to construct irrigation system in their command area.

S. No.	Contract Package	Name and Location of Project	Command Area(Ha)	Remarks
1	DPR/01/DGKISP/081/082	Detailed Feasibility study of Dhurpur Galyang kulo ISP, Ghiring-1, Tanahun	13.68	
2	DPR/02/MISP/081/082	Detailed Feasibility study of Mandre ISP, Shuklagandaki-10, Tanahun	12	
3	DPR/03/CKISP/081/082	Detailed Feasibility study of Chhetan Khola ISP, Shuklagandaki-10, Tanahun	12.5	
4	DPR/04/NNLISP/081/082	Detailed Feasibility study of Nag Nageni Lift ISP, Bhanu-5, Tanahun	12.5	
5	DPR/05/DBAISP/081/082	Detailed Feasibility study of Dhanu Base Aptari ISP , Bhanu-4, Tanahun	14	
6	DPR/06/CKISP/081/082	Detailed Feasibility study of Chimne Khola ISP, Devghat-2, Tanahun	15	
7	DPR/07/AKISP/081/082	Detailed Feasibility study of Andheri Kulo ISP, Bhanu-1, Tanahun	25	
8	DPR/08/CKISP/081/082	Detailed Feasibility study of Chhabise kulo ISP, Bandipur-1	10	
9	DPR/09/MISP/081/082	Detailed Feasibility study of Madhuban ISP, Rishing-4, Tanahun	20	
10	DPR/10/KKSBISP/081/082	Detailed Feasibility study of Kalesti Khola Sisuwa Bhateri ISP, vyas-10, Tanahun	11	
11	DPR/11/TKBISP/081/082	Detailed Feasibility study of Thulo Khet Bandkulo ISP, Myagde-7, Tanahun	10	

12	DPR/12/BSBISP/081/082	Detailed Feasibility study of Beltari Simkhet Brihat ISP, Shuklagandaki-6, Tanahun	11.6	

Therefore, WRIDOT Damauli, Tanahun processed for the procurement of consulting service to conduct Detailed Feasibility Study of the above mentioned Irrigation Projects.

2. General Information of the Project

2.1 Location:

Detail information about project stated different table above and below.

2.2 Type:

These projects are an integration and rehabilitation of existing schemes which includes existing canals of various sizes and commands, which is at present operated and maintained by the farmers. For this study, the canals commanding the considerable agricultural areas shall be considered.

2.3 Accessibility:

The all projects are nearby road head. And few km of walking distance

2.4 Source:

The sources of irrigation water for these projects are as follows.

S. No.	Name of Project	Source	Type of Source	Remarks
1	Dhurpur Galyang kulo ISP	Aryal Khola	Perennial	
2	Mandre ISP	Mandre Khola	Perennial	
3	Chhetan Khola ISP	Sattarihyangdi	Perennial	
4	Nag Nageni Lift ISP	Chudi khola	Perennial	
5	Dhanu Base Aptari ISP	Chudi khola	Perennial	
6	Chimne Khola ISP	Chimne Khola	Perennial	
7	Andheri Kulo ISP	Andheri Khola	Perennial	

8	Chhabise kulo ISP	Nahala Khola	Perennial	
9	Madhuban ISP	Madhuban Khola	Perennial	
10	Kalesti Khola Sisuwa Bhateri ISP	Kalesti Khola	Perennial	
11	Thulo Khet Bandkulo ISP	Myagde Khola	Perennial	
12	Beltari Simkhet Brihat ISP	Ghumauri	Perennial	

2.5 Water Right:

There has not been reported any serious water right problem among the various Farmers' Managed Irrigation System (FMIS) off taking from the above mentioned rivers.

2.6 Canal Length:

The tentative length of the main canal/pipe is as follows.

S. No.	Name of Project	Canal Length (km)	Remarks
1	Dhurpur Galyang kulo ISP	3.0	Earthen Canal +Pipe
2	Mandre ISP	1.80	Earthen+Pipe
3	Chhetan Khola ISP	0.5	New Lift Scheme
4	NagNagini Lift ISP	0.6	Pipe Syatem/New/ lift
5	Dhanu Base Aptari ISP	0.4	Earthen Canal
6	Chimne Khola ISP	0.5	Pipe +Earthen
7	Andheri Kulo ISP	2.0	Earthen+ partial RCC canal
8	Chhabise kulo ISP	1.5	Earthen Canal
9	Madhuban ISP	2.5	Earthen Canal
10	Kalesti Khola Sisuwa Bhateri ISP	2.2	Earthen Canal
11	Thulo Khet Bandkulo ISP	2	Earthen Canal
12	Beltari Simkhet Brihat ISP	2.5	New System.

2.7 Cross Drainage:

The main canal crosses number of gullies as follows:

S. No.	Name of Project	Number of gullies	Kholsi Width (M)	Remarks
1	Dhurpur Galyang kulo ISP	1	12	Khola crossing
2	Mandre ISP	1	13	
3	Chhetan Khola ISP	1	14	
4	Nag Nageni Lift ISP	1	20	Drain Crossing/Gully
5	Dhanu Base Aptari ISP	1	19	
6	Chimne Khola ISP	1	18	
7	Andheri Kulo ISP	1	12	Natural jharan
8	Chhabise kulo ISP	1	11	
9	Madhuban ISP	1	15	
10	Kalesti Khola Sisuwa Bhateri ISP	1	11	
11	Thulo Khet Bandkulo ISP	1	19	
12	Beltari Simkhet Brihat ISP	1	16	

2.8 Command Area:

The project intends to provide round year irrigation facilities in the following hectare of land.

S. No.	Name of Project	Location	CA (ha)	Remarks
1	Dhurpur Galyang kulo ISP	Ghiring-1, Tanahun	13.68	
2	Mandre ISP	Shuklagandaki-10, Tanahun	12	
3	Chhetan Khola ISP	Shuklagandaki-10, Tanahun	12.5	
4	Nag Nageni Lift ISP	Bhanu-5, Tanahun	12.5	
5	Dhanu Base Aptari ISP	Bhanu-4, Tanahun	14	

6	Chimne Khola ISP	Devghat-2, Tanahun	15	
7	Andheri Kulo ISP	Bhanu-1, Tanahun	25	
8	Chhabise kulo ISP	Bandipur-1	10	
9	Madhuban ISP	Rishing-4, Tanahun	20	
10	Kalesti Khola Sisuwa Bhateri ISP	vyas-10, Tanahun	11	
11	Thulo Khet Bandkulo ISP	Myagde-7, Tanahun	10	
12	Beltari Simkhet Brihat ISP	Shuklagandaki-6, Tanahun	11.6	

2.9 Population and Households:

The project is intended to serve the following populations.

S. No.	Name of Project	No. of Household	Populations	Remarks
1	Dhurpur Galyang kulo ISP	50	255	
2	Mandre ISP	70	350	
3	Chhetan Khola ISP	170	400	
4	NagNageni Lift ISP	80	400	
5	Dhanu Base Aptari ISP	48	280	
6	Chimne Khola ISP	50	280	
7	Andheri Kulo ISP	300	1625	
8	Chhabise kulo ISP	55	305	
9	Madhuban ISP	120	382	
10	Kalesti Khola Sisuwa Bhateri ISP	105	1479	
11	Thulo Khet Bandkulo ISP	65	350	
12	Beltari Simkhet Brihat ISP	72	395	

2.10 Farmers' Attitude towards the project:

Farmers are very enthusiastic about the project. They are willing to share the cost of the project through voluntary contribution for the implementation of the project as per irrigation policy and Water Resources and Irrigation working guidelines of the MOPID, Gandaki Province.

3. Objectives of the Study

The main objective of the consulting service is to prepare Detail Feasibility Study and Report Preparation of above mentioned Irrigation Projects in order to facilitate year-round irrigation to respective agricultural land of the irrigation projects in Tanahun district. The maximum possible use of locally available materials & technology with respect to the accessibility and other prevailing working condition in the feasibility study/design shall be appreciated.

4. Scope of Works

The survey team (here onwards "the team") shall perform detailed technical, social and economic analysis along with related works herein to attain the desired objectives. The team shall be responsible for accuracy, interpretation, analysis of all data received and for the conclusion and recommendations in their report. The mentioned scope of work to be carried by the team shall broadly include but not limited to the following:

4.1. Desk study

A desk study shall be carried out collecting all the data, maps and information relevant to the project for planning of field survey and investigation works as well as detailed design. The scheme alternatives need to be reviewed in the feasibility study, which may include the following:

i) Alternative intake site, canal alignment, revised intake site/canal alignment etc.
ii) Possibility of command area extension etc.

4.2. Field Survey Work

The field survey work may differ slightly based on the type of the scheme whether it is new or rehabilitation. The following are the main activities to be carried out during the field survey work:

i) Intake/Head Work site survey
ii) Discharge measurement
iii) Canal alignment Survey
iv) Cross Drainage Survey
v) Work Inventory
vi) Command area survey

i) Intake/Head work Site Survey

- Site plan for all probable Intake/Head works to be investigated situated on the River Banks shall be prepared (Covering total width of the river & at least 10 m u/s and d/s both side from the firm bank, depending upon the site condition).
- The profile and cross-section shall be taken at suitable interval according to site condition if deemed necessary.
- All the cross section and profile of the river must show the river bed level, high flood level mark and bank top levels.

- ❖ Appropriate instrumentation and procedures shall be used for better performance of work.

ii) Discharge Measurement

The discharge measurement shall be done at the headwork/intake location, using an appropriate method.

iii) Canal Alignment Survey

Alignment of the main/secondary/sub secondary canals etc. originating from the Source Rivers shall be prepared.

The Profile and Cross sections along the alignment of the canal at an interval required but not limited to 50 m. (Cross sections will be based on actual survey along each cross section rather than interpolation).

The benchmarks shall be established every 500 m at permanent structures or as per the requirement. All benchmarks shall be located in sites that should remain stable and undisturbed throughout project construction activities.

iv) Cross Drainage (C/D) Survey

Cross drainage (C/D) survey shall be done collecting all necessary data required to design and estimate the numbers of cross-drainage structure. The following data may be notable:

- ❖ width of each C/D
- ❖ Discharge of each C/D with notable High flood level
- ❖ c/s of each C/D

v) Work Inventory

During Detail Survey, work inventory along the canal system shall be prepared, i.e. number of major/minor structures and other physical features etc.

vi) Command area survey

A closed traverse survey of the command area indicating Gross Command Area, Cultural Command Area and other important physical features shall be carried out. In command area map all canals (main/secondary/tertiary) shall be shown.

4.3. Other Activities in the field

i) Hydrological Study

Beside collection of hydro & meteorological data from DHM, for determination of all design data the hydrologist shall carry out a detailed hydrometrical survey and hydrological study of the river along with the headwork/intake site which shall include but not limited to the following:

- ❖ Catchment area of the river up to a headwork/intake site
- ❖ Maximum discharge shall be calculated by established formulae with 25 years/50 years return periods.
- ❖ Area of flow, velocity and depth of the flow at the time of survey (for discharge calculation)

After the selection of proposed headwork/intake site with alternatives, the surveyor must evaluate along with the collected hydrological data and the following points to carry out design of the headwork/intake:

- Design discharge
- Scour depth
- Waterway
- The most feasible proposed sites
- River training and approach roads

ii) Environmental Study

The environmental study shall be carried out i.e. identifying the environmental changes due to the proposed structures and the outcomes of the study need to be presented clearly in the form of recommendations and subsequently be considered in detail design. Vulnerable area of landslide/soil erosion shall be evaluated & mitigation measures shall also be proposed.

Environmental Examination shall be conducted. The Environment Protection Act and prevalent rules shall be followed.

iii) Socio-Economic Study

The socio-economic survey shall be carried out to determine the social structure of the community and its economic status. The survey includes the collection of quantitative and qualitative data and information on social structure, socio-cultural institutions, and economic activities of the farmers of the scheme command area. Some of social and economic indicators of the community are as follows:

Social indicators:

- Social composition- homogeneity, diversity;
- Education- literacy, school and college, awareness about irrigated agriculture, prior experience on irrigation;
- Family size- male/female, economically active members,
- Migration- temporary, permanent, foreign/urban areas;

Economic indicators:

- Land holding size- land less, marginal land holding (< 5 ropani), land lords (> 2 ha);
- Main occupation- agriculture, service, labor, foreign service, business;
- Source of income- agriculture, service, remittance etc.;

iv) Agriculture Survey

For Irrigation schemes agricultural survey shall include data and information regarding the soil type, land use and agriculture practices of the command area to be proposed.

The agriculture survey includes the collection of data and information on:

- Existing & Anticipated cropping pattern,
- Existing & Expected crop yields,
- Existing & Proposed Inputs and its availability,
- Marketing facility and labor situation
- Food Security

- Existing & Anticipated Irrigation/Water Management Practices
- Accessibility

a) Existing & Anticipated cropping pattern

An assessment of existing cropping calendar/pattern interacting with beneficiary farmers/nearby Agriculture Service Center & other related offices shall be made; Based on above interaction, assessment shall also be made for anticipated cropping calendar/pattern.

b) Existing & Expected crop yields

An assessment of existing& expected crop yield interacting with beneficiary farmers/nearby Agriculture Service Center & other related offices shall be made.

c) Existing & Proposed Inputs and its availability

An assessment of existing & proposed agriculture input interacting with beneficiary farmers/nearby Agriculture Service Center & other related offices shall be made.

d) Marketing facility and labor situation

An assessment of market facilities for selling of agriculture products, buying of seeds, fertilizer etc., in case of implementation of the project availability of construction materials shall be made.

e) Accessibility

Find the distance of the project area from the nearest road head, cost of construction material at site, district rates for labor, materials & equipment

f) Hydrological Analysis

The criteria for the selection of maximum design discharge are based on technical and economic considerations. The major criteria for the selection of design flood are:

- Importance of structure to be constructed,
- Effect of overtopping of the structure,
- Potential loss of life and downstream damage, and
- Cost of the structure

When the recorded hydrological data of the river is absent or too short a regional analysis is adopted to estimate the flood flow, and low flow of required return periods. In this method a hydrological homogeneous region is considered from statistical point of view. There are various methods of estimating flood flow of given return period based on regional analysis.

In Nepal following methods are generally used to estimate the flood flow:

- WECS/DHM (1990) Method- based on regression analysis,
- Tahal et al (2002) Method – based on Index Flood Method,
- Sharma and Adhikari (2004) – based on regression analysis

In addition, there are rational method and empirical methods such as Modified Dickens method, Ryve's method.

v) Irrigation Water Requirement & Water Balance

Calculation of Irrigation Water Requirement should follow the steps mentioned in the PDSP revised Planning and Design Manual Volume I or PDSP Design Manual M3, Hydrology and Agro-meteorology. Water balance with optimization of water use and irrigation efficiency should be finalized.

vi) Design

The cost effective design consideration for selection of type of head work and design of canal & related structures shall be carried out using standard hydraulic & structural engineering concepts and existing social condition. The consultant shall propose optimized number of canals to be considered. The relevant standard codes of practice, norms and guidelines shall be followed.

vii) Miscellaneous

If not covered aforesaid, the consultant shall perform other studies, explorations, test, survey, calculation etc. required to produce full and complete set of drawings, specifications, designs, bill of quantities, requirement of materials and complete cost estimate for the project implementation.

viii) Detailed Cost - Estimate

Based on the design and other collected relevant information, the consultant shall produce detailed quantity estimate of intake/headworks and associated structures. They shall provide information on source of materials and their lead distances and prepare rate schedules. Approved District Rates for labor and materials at the project sites shall be collected or analyzed. Detail rate analysis, detail quantity & cost estimates along with bill of quantity (BOQ) shall be prepared based on the irrigation norms and other available norms and the calculated quantity rates.

ix) Economic Analysis & Sensitivity tests

Crop Budget with and without Irrigation System shall be prepared and Benefit/Cost Ratio and Economic Internal Rate of Return (EIRR) shall be evaluated; Conclusion and Recommendation shall be made based on economic & other indicators.

x) Annexes

Annexes shall include details of compiled data, minutes of community meetings and consent letters of land donation, photographs of sites/location (Intake, command area, alignment, community meeting) & other related documents shall be included.

xi) Report Preparation

The report shall in all respect be complete containing all required components of the design and be presented in clear and easy understandable formats.

Separate report shall be prepared for each project. The Draft/ Final report must include 3 volumes for each project: -

- Volume I- Main report
- Volume II- Appendices (All design Calculations & Cost Estimation)
- Volume III- Drawings

All the drawings should be produced on A3 size sheets.

Please refer TOR Section (5) for number of copies and requirement of report.

5. Working and Payment Schedule

The duration of the study period would be 60 days and the Consultant shall submit the following documents within specified time as below:

Deliverables	No. of copies		Schedule for submission
	Hard copy	Soft copy (editable copy)	
Draft report	1	1	60 days after the agreement
Final report	1	1	15 days after the comment/ suggestions on the draft report

The Consultant can claim the payment in Two installments after submission of Draft Report and acceptance of final report as follows:

- First Installment /Payment: The **50% of contract amount** shall be paid upon submission of Draft Report.
- Final Payment: The **remaining 50 % amount** shall be paid upon submission and acceptance of final report.

6. SUBMISSION OF REPORTS AND PRESENTATION OF THE WORKS

The Consultant shall submit the following reports for each project:

i) Draft report:

Reports shall include but not limited to water resources analysis, water balance calculation, design of irrigation infrastructures, rate analysis, quantity, cost estimate & economic analysis, L-section, cross-section, plan and layout of proposed infrastructures, Salient Features, Executive Summary, Implementation plan etc. Moreover, the report must include all the necessary documents to the satisfaction of client. The draft report shall be submitted in stipulated number of copies as indicated.

ii) Final report:

Reports shall incorporate all the comments, suggestions, and recommendations and shall amend or provide additional information in the manner acceptable to the client. It doesn't however relieve the consultant of their responsibility over the technical content of the design and report. The content shall be verified against the TOR. The final report shall be submitted in stipulated number of copies as indicated.

iii) <u>Soft copy (electronic copy) of the design report</u>

Apart from the bound report the Consultant shall submit editable soft copies (electronic copies) of the reports in suitable tool as specified in the checklist.

7. Working team

The working team for field and office works should necessarily consist of the following Key Personnel together with adequate supporting manpower.

S.N	Professional Expert	Unit
A	**Remuneration**	
1	Team Leader/Irrigation Management Expert	MD
2	Hydraulic/Irrigation/Structural Engineer	MD
3	Engineer/Surveyor	MD
4	Hydrologist	MD
5	Agronomist	MD
6	Economist	MD
7	Sub-Engineer	MD
8	Assistant	MD
9	Office Assistant	MD
10	Labour	MD

The general & specific experience and qualification of following key personnel shall be considered for technical evaluation as per the RFP.

SN	Personnel	Preferred academic qualification	Minimum years of general experience
1	Team Leader/Senior Irrigation Expert	Master degree in Water Resources or equivalent	7 years
2	Hydraulic Engineer	Master degree in Water Resources or equivalent	5 years
3	Structural Engineer	Master's degree in Structural Engineering	5 years
4	Irrigation Engineer	Bachelor of Agricultural/Civil Engineering	5 years
5.	Senior Surveyor	Bachelor of Civil Engineering or Surveying course	5 years

8. Services and facilities from the office

The Consultant shall have to manage all their activities related to the studies on their own. The Client (WRIDDO, Tanahun) shall not provide any logistic support for any works that they are supposed to carry out. However, the Client shall assist the Consultant in getting information related to the projects if so requested.

9. Contents of Report

9.1 Volume I – Main Report

- Form for Approval of Project for Implementation
- Estimate Sanction Form
- Layout Plan of Project
- Executive Summary

- Salient Features
- General Information of the Project
- Study Methodology
- Project Details and Summary of Design Analysis and Calculations
- Existing and Proposed Infrastructures
- Conclusion and Recommendations

9.2 Volume II – Appendices

- Water Resources Assessment (include tables, charts and figures)
- Crop water Requirement and Water Balance Computation (include present and future cropping patterns
- Environmental Assessments
- Design of Sub-Project Components
- Rate analysis
- Detailed Quantity Estimate of Sub-Project Components
- Summary of Quantity and Cost of Project (Include structure wise and System Wise Summary)
- Abstract of Cost
- Economic Analysis
- Farmer's Request Form
- District Rate
- Photographs

9.3 Volume III – Drawings

- Layout Map in color print
- Command Area Delineation
- Schematic Maps
- Canal L-Section Profile of River and Canal
- Canal Cross Section of River and Canal
- Head works: Plan and Section views as required with levels and proper dimensions
- Relevant Structures: Plan and Section views as required with levels and proper dimensions