

TERMS OF REFERENCE

Consulting Services for the Conduct of Value Engineering /Value Analysis (VE/VA) Study on Irrigation for Food Security

1. RATIONALE

- 1.1 The National Government (NG) is continuously pursuing the most cost-efficient and cost-effective measures in supporting broad-based economic/inclusive growth in the country by maximizing the utilization of NG's limited financial resources without compromising the attainment of the country's development goals and thrusts under the 2011-2016 Philippine Development Plan (PDP).
- 1.2 Considering the major contribution of infrastructure development in achieving inclusive growth, NG has introduced, as one of its strategic measures, the use of the VE/VA¹ methodology as a way of ensuring that the right policies and solutions to development objectives are selected and implemented, among others.

2. BACKGROUND

2.1 State of Food Security and Rice Policy

According to the 2015 Global Food Security Index (GFSI), the Philippines ranked 72nd out of 109 countries when it comes to food security. The country scored 49.4 out of 100 points, which was hardly a significant improvement from the score in 2014 at 49.5, as shown in the table below:

YEAR	PHILIPPINES' FOOD SECURITY SCORE
2012	48.8
2013	49.1
2014	49.5
2015	49.4

NG's major national priority and policy platform towards food security² is attaining rice self-sufficiency. *One of the major Government strategies*

¹ VE/VA, as defined by the Society of American Value Engineers International (SAVE International), is the systematic application of recognized techniques by a multi-disciplined team that identifies the functions of a product or service; establishes a worth for that function; generates alternatives through the use of creative thinking; and provides the needed functions, reliably at the lowest cost.

² Food security, which was defined at the 1996 World Food Summit as existing "when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life." Commonly, the concept of food security is defined as including both physical and economic access to food that meets people's dietary needs as well as their food preferences. (Retrieved on 19 October 2015 from <http://focusweb.org/content/right-food-and-food-security-philippines-what-numbers-say>)

towards rice self-sufficiency is increasing irrigation service coverage to increase production and yield.

Rice self-sufficiency, however, has not been achieved to date due to several factors including climate risk.

2.2 Risks/Issues Affecting Food Security

Climate risk (e.g., El Niño and climate variability in general) is a major consideration vis-à-vis the strategy of increasing irrigation service coverage, since it affects the hydrology/available water that may be tapped for irrigation.

For rice, even if irrigation facilities are in place, rice yield is affected by typhoons and flooding, among others. Thus, aside from climate risk, another issue that needs to be looked into is the design of irrigation systems to make them flexible for irrigation of crops other than rice.

Another relevant issue is cost. Irrigation infrastructure involves significant investment costs as well as operation and maintenance (O&M) costs. Currently, NG provides significant subsidies to the National Irrigation Administration (NIA) to construct irrigation infrastructure, since irrigation service fees (ISF) are not enough to recover the same.

Given the high costs of irrigation systems and the risks affecting irrigation systems and production, it is important to ensure that measures are identified to ensure optimized irrigation development/systems.

3. OBJECTIVES

The ultimate objective of this TOR is to identify options for optimizing irrigation development and irrigation systems in order to maximize their contribution in increasing production and yield.

The options/alternatives shall take into account the various features of irrigation systems and related aspects, such as: (i) demand management strategies and volumetric pricing to ensure efficient use of irrigation water; (ii) the possibility of desalination of seawater for use in irrigation; (iii) use of covered irrigation canals vis-à-vis open canals similar to the drip irrigation technology; (iv) large dams vs. small dams; etc.

The options/alternatives should take into account the various risk factors on irrigation such as climate risk as discussed above, which impacts on hydrology/available water. Moreover, recommendations on optimal alternatives should have a geographic dimension, where appropriate.

Other related options/alternatives related to increasing production and yield shall also be identified to supplement the proposed optimal alternatives, such as the possibility of using climate-resistant (e.g., drought-resistant and flood-resistant) rice varieties and

other agricultural crops, and using new technologies and farming techniques to increase production and yield of agricultural crops, among others.

4. SCOPE OF CONSULTANT'S SERVICES

The consulting services shall involve, but not necessarily be limited to, the following activities:

- 4.1. Preparation of the general and detailed work plan for the conduct of the VE/VA study. The work plan shall include the timetable/schedule for each of the activities (such as Gantt Chart).
- 4.2. Conduct of secondary data and information gathering, and review various relevant documents such as the Philippine Development Plan (PDP), Food Staples Sufficiency Program (FSSP), Agriculture and Fisheries Modernization Plan (AFMP), NIA Corporate Plan, studies from Philippine Institute for Development Studies (PIDS), and other pertinent studies and data needed in the conduct of the VE/VA.
- 4.3. Review of past and existing policies, pre-feasibility studies (pre-F/S) and/or feasibility studies (F/S) of irrigation projects, and collect pertinent data needed in the conduct of the VE/VA study.

Review of literature/studies should include a review of international experience to draw lessons learned, among others.
- 4.4. Primary data gathering such as interviews, focus group discussions (FGD), and/or brainstorming workshops with relevant individuals (e.g., farmers), agencies, institutions, associations (e.g., irrigators' associations), etc.
- 4.5. Preparation of a comprehensive briefing document on the VE/VA study goals, work plan, schedule, project description, study team roster, and essential plans of the general layout and other critical project features.
- 4.6. Assessment of existing condition/situation in relation to irrigation development and irrigation systems in the country.
- 4.7. Conduct of the VE/VA study using the six-phase job plan (refer to **Annex A**) as illustrated in the *Value Analysis (VA) Handbook of NEDA (2009)*³, which has developed guidelines and analytical tools on value analysis.
- 4.8. Conduct of field visits (in at least 3 sites) to validate data, assess existing conditions, and substantiate proposed options/alternatives, among others.
- 4.9. Preparation of the VE/VA Report highlighting the proposed and recommended options. The VE/VA Report should be in accordance with the

³ For reference, the *Value Analysis Handbook for NEDA (2009)* may be downloaded from: <http://www.neda.gov.ph/wp-content/uploads/2014/01/Value-Analysis-Handbook.pdf>

standards/formats provided by NEDA, and with the NEDA VA Handbook (2009).

The VE/VA Report shall include, but not be limited, to the following:

- *Assessment of the existing situation/condition of irrigation systems, including current practices, etc., in irrigation development;*
- *Associated costs, benefits, and risks involved among the proposed options, highlighting the best options for delivering the intended outputs, which would yield the highest value for money (VfM), e.g., lowest lifecycle/whole-of-life costs based on secondary data or estimates;*
- *Comparison and/or combination of options towards attaining optimal irrigation development/systems with rice as the major commodity of study and other agricultural crops as secondary consideration;*
- *Recommendation on what option/strategy (or set of options/strategies) to pursue, which could be a policy input for the next Philippine Development Plan (PDP);*
- *Recommendation on how to go about irrigation development in the country, taking into consideration spatial (regional) and other aspects; and*
- *Recommendation on institutional arrangements for the operationalization of the recommended alternative strategy/ies.*

Where appropriate, the Report shall also include an analysis of possible financing schemes, e.g., whether NG funding, Official Development Assistance (ODA), Public-Private Partnership (PPP), or hybrid arrangement, including an analysis of financing risks.

- 4.10.** Conduct of coordination meetings with concerned agencies/institutions, as needed.
- 4.11.** Conduct of meetings/presentations to NEDA or to NEDA's identified committees.
- 4.12.** Conduct of other activities, as needed, prior to the formulation of the draft final VE/VA report.
- 4.13.** Preparation of the Documentation Report of the study.

In addition to the specified scope of works mentioned above, the Consulting Firm may propose additional works/services to enhance the Study, provided it shall bear no additional cost to Government.

The scope of any additional proposed works by the Consulting Firm shall be established within the submission of its Work Plan of the Study, which is seven (7) days upon the Consulting Firm's receipt of the Notice to Proceed (NTP), subject to the approval of NEDA.

NEDA may assign personnel to the Consultant as may be agreed upon for the purpose of capacity-building and technology transfer, and participate in the conduct of VE/VA study. The same shall not bear additional cost to Government.

5. TIMELINES AND DELIVERABLES

- 5.1.** The Consultant is expected to submit a VE/VA Report with proposed options and recommendation/s on the best cost-effective and technically viable solution/s that would optimize irrigation development and irrigation systems. These shall include structural measures (e.g., new and cost-effective technologies, etc.) and non-structural interventions (e.g., demand management strategies, crop management programs, etc.), highlighting the justification for recommending such options (e.g., through either improved production/yield, improved cost effectiveness, and/or increased implementability of the proposed alternatives).

The recommended options should be shown to be feasible or potentially viable for further development.

5.2. Commencement Date and Period of Implementation

The study shall be completed within a period of six (6) months, inclusive of the presentations NEDA and/or to NEDA's identified committee, commencing from the date of the NTP.

5.3. Deliverables

The following deliverables/outputs (in five (5) hard and soft copies) will be expected from the Consulting Firm to be submitted to NEDA on the day/date specified below and based on the agreed general Work Plan:

Deliverables	Timelines
<p><u>VE/VA Work Plan</u></p> <p>Work Plan for the conduct of VE/VA on the project, which will include the following among others:</p> <ul style="list-style-type: none"> Description of the Work Plan, which includes the methodology and mechanics/approach in conducting the VE/VA study, and work timetable. The methodology to be used should be consistent 	<p>Within fifteen working (15) days from the Consulting Firm's conforme/signature on the notice to proceed (NTP) issued by NEDA to commence the VE/VA study.</p>

Deliverables	Timelines
<p>with the six (6)-phase job plan or similar methodology/principle. The NEDA VE/VA Handbook shall be used as reference; and</p> <ul style="list-style-type: none"> • Methodology on data collection such as identification of concerned institutions/ departments/ agencies/offices to consult on the needed data/information, as well as methodology on how and where the data will be gathered. • List of main activities and tasks to be undertaken by the Consulting Firm to develop the VE/VA Report, which shall also indicate the sequence and relationships between tasks and provide a realistic estimate of start and duration of each task. 	
<p><u>Interim Report</u></p> <p>Report on progress of the study containing the initial activities undertaken</p>	<p>Within two (2) months after NEDA approval of the Work Plan</p>
<p><u>Preliminary VE/VA Report</u></p> <p>Report on initial findings of the VE/VA study</p>	<p>Within three (3) months after NEDA approval of the Work Plan</p>
<p><u>Presentations to the NEDA</u></p> <p>Presentations to NEDA of the Preliminary VE/VA Report, Draft Final Report, and Final Report</p> <p>Presentation to the INFRACOM of the Draft Final Report</p>	<p>The earliest available schedule upon receipt by NEDA of the Report</p> <p>The earliest available schedule of the INFRACOM meeting upon receipt by NEDA of the Report</p>
<p><u>Draft Final VE/VA Report</u></p> <p>Draft Final Report containing the elements described in item 4.9 above</p>	<p>Within four (4) months after NEDA approval of the Work Plan</p>

Deliverables	Timelines
<p><u>Final VE/VA Report</u></p> <p>Report incorporating comments/recommendations from the NEDA and/or other NEDA's identified committee, as applicable, after the submission of the draft VE/VA Report and presentation to the INFRACOM. The Documentation Report of the study shall be submitted together with the Final VE/VA Report.</p>	<p>Ten (10) working days after INFRACOM final comments.</p>

Note: The VE/VA report should contain the required format/information as indicated in the standards/formats to be provided by NEDA and should be in accordance with the format provided for in the NEDA Value Analysis (VA) Handbook (2009).

6. EXPERTISE REQUIREMENTS AND QUALIFICATIONS

The proposed Study shall be undertaken by a Consulting Firm⁴ composed of key experts and their corresponding qualifications as detailed below. Premium shall be given for bidders with team member/s who is/are a Certified Value Specialist (CVS)⁵ under SAVE International or similar certification bodies.

6.1. Team Leader

- A University/College degree in Civil Engineering or Agricultural Engineering, with at least ten (10) years of professional experience in the planning, design, and implementation of irrigation systems;
- With relevant work experience in the conduct of similar and/or relevant projects;

6.2. Water Resources Engineer/Planner

- A University/College degree in the field of engineering or natural sciences, with specialization in water resources engineering and/or planning, and at least seven (7) years of work experience in water resources engineering/hydrology/hydraulics and/or planning (e.g., F/S preparation for projects within the water resources sector, preferably in the irrigation subsector);
- With relevant work experience in the conduct of similar and/or relevant projects;

⁴ The engagement of local consultants will be prioritized as long as the six (6)-phase job plan or similar methodology illustrated in the VA Handbook is followed.

⁵ CVS is the highest level of certification attainable through SAVE International. Designation is reserved for Value Methodology (VM) practitioners, VM Program Managers, and VM Academia, who have demonstrated expert level experience and knowledge in the practice of the VM.

6.3. Agriculturist

- A University/College degree in Agriculture with at least seven (7) years of professional experience in crop science and soil science;
- With relevant work experience in the conduct of similar and/or relevant projects;

6.4. Economist

- A University/College degree in the field of economics, finance, and/or related fields; and
- At least seven (7) years of relevant work experience in analyzing funding/financing aspects of projects and financial/economic impact of water infrastructure projects, particularly in economic/financial analyses of agricultural/irrigation projects.

6.5. Environmental/Social Assessment Specialist

- A University/College degree in the field of environmental or social science, or a degree in environmental engineering; and
- At least seven (7) years of relevant work experience in environmental and social screening/assessment.

The Consulting Firm may propose additional experts other than those listed herein, as it deems necessary, as long as such proposal is consistent with its proposed approach and methodology and without additional cost to Government. Moreover, the Consulting Firm may propose an expert to undertake more than one (1) activity/expertise, provided that: (i) all the necessary expertise required in delivering the desired output/s are present in the Team; (ii) the activities proposed to be undertaken by each expert should be consistent with the proposed approach and methodology; and (iii) the merging of expertise shall not prejudice the outputs.

7. APPROVED BUDGET FOR THE CONTRACT (ABC)

- 7.1. The ABC for the proposed study is **PhP8,890,500.00**, with the following breakdown:

Component	In PhP
Remuneration	7,958,000.00
Reimbursable	932,500.00
Field Expenses (transport, accommodations, food, etc.)	
Support Staff	
Coordination Meetings/Workshops	
Reproduction and communication costs, sundries	
TOTAL	8,890,500.00

- 7.2. Note that this consulting contract shall be a fixed price contract. Any extension of contract time shall not involve any additional cost to NEDA.

8. PAYMENT SCHEDULE

- 8.1. Billing for *reimbursable items* may be requested not more than once a month based on the actual expenses incurred and supported by official receipt/documents. In the absence of official receipts/documents when claiming for reimbursable costs, the Consultant may also be allowed to submit a certification of actual disbursements made under the oath.
- 8.2. Billing for *remuneration* shall be in accordance with the following delivery schedule.

Description	Payment as % of remuneration
Upon NEDA Approval of the Work Plan	10%
Upon NEDA Approval of the Interim Report	25%
Upon NEDA Approval of the Preliminary VA Report	20%
Upon NEDA Approval of the Draft Final VA Report	20%
Upon NEDA Approval of the Final VA Report including Documentation of the VE/VA Study	25%

- 8.3. An advance payment may be made to cover mobilization costs, but shall not exceed 15% of the contract amount, subject to the posting of an irrevocable standby letter of credit issued by an entity acceptable to NEDA and of an amount equal to the advance payment. The advance payment shall be repaid by the Consulting Firm by deducting from his subsequent billings/payments such sum as agreed upon during contract negotiations until fully liquidated within the duration of the contract.

9. IMPLEMENTATION ARRANGEMENT / RESPONSIBILITIES

9.1. Responsibilities of NEDA

- 9.1.1. Shall evaluate all request for payments/billings and determine the acceptability/correctness of the same;
- 9.1.2. Shall have the option to have up to four (4) Government personnel participate in the critical stages of the Study for the purpose of on-the-job capacity building/technology transfer;
- 9.1.3. Shall provide, upon the request of the Consulting Firm, available information/data and also, if available, copies of previous related studies subject to the execution of a Non-Disclosure Agreement, if necessary;
- 9.1.4. Shall supervise and provide the over-all guidance to the Consulting Firm on the general direction of the Study based on the project/Study objectives as well as on relevant country policies and development

plans, and will direct the engaged Consulting Firm and/or the VE/VA Team on the succeeding or next steps to be undertaken during the course of the Study;

- 9.1.5. Shall facilitate and coordinate with other Government agencies and private utility operators in the request for necessary interview meetings and document collection in advance of the VE/VA study; and
- 9.1.6. Extend assistance in the coordination, preparation, and arrangement of venue, equipment, materials and other logistics for the various meetings.

9.2. Responsibilities of the Consulting Firm

- 9.2.1. Shall be responsible for the conduct of the Study and the timely delivery of results/outputs as indicated above;
- 9.2.2. Shall shoulder all expenses required in the conduct of the Study, including travel costs and lodging of Government personnel during field visits, except for their salaries;
- 9.2.3. Shall: (a) carry out the services with sound engineering theories and practices to ensure that the final works will provide the most economical and feasible development for the Study; (b) accept full responsibility for the consulting services to be performed under this TOR for which the Consulting Firm is liable to NEDA; and (c) comply with, and strictly observe any laws regarding workmen's health and safety, workmen's welfare, compensation for injuries, minimum wage, hours of labor and other labor laws;
- 9.2.4. Shall: (a) keep accurate and systematic records and accounts in respect of the services in such form and detail as is customary and sufficient to establish accurately that the costs and expenditures under this TOR have been duly incurred; and (b) permit the duly authorized representatives of the Government from time to time to inspect its records and accounts as well as to audit the same;
- 9.2.5. Shall not assign nor sub-contract any part of the professional engineering services under this TOR to any person or firm, except with prior written consent of NEDA. The approval by the Government to the assignment of any part of said services or to the engagement by the Consulting Firm of sub-contractors to perform any part of the same shall not relieve the Consulting Firm of any obligations under this TOR;
- 9.2.6. Shall, during or after the conclusion or termination of the Study, limit its role to the provision of the services and hereby disqualifies itself and any other contractor, consulting engineer or manufacturer with which it is associated or affiliated, from the provision of goods and

services other than the services herein, except as NEDA may otherwise agree;

- 9.2.7. Shall prohibit full-time foreign staff during his assignment under this TOR to engage, directly or indirectly, either in his name, or through the Consulting Firm, in any business or professional activities in the Philippines other than the performance of his duties or assignment under this TOR;
- 9.2.8. Shall not at any time communicate to any person or entity any information disclosed to them for the purpose of this services, nor shall the Consulting Firm make public any information as to the recommendations formulated in the course of or as a result of the services, except with prior consent of NEDA;
- 9.2.9. Shall agree that nothing contained herein shall be construed as establishing or creating between the Government and the Consulting Firm, the relationship of employer and employee or principal and agent, it being understood that the position of the Consulting Firm and anyone else performing the services is that of an independent contractor;
- 9.2.10. Shall hold the Government free from any and all liabilities, suits, actions, demands, or damages arising from death or injuries to persons or properties, or any loss resulting from or caused solely by the Consultant's personnel incident to or in connection with the services under this TOR. The Consulting Firm shall agree to indemnify, protect and defend at its own expense the Government and its agents from and against all actions, claims and liabilities arising out of acts done solely by the Consulting Firm or its staff in the performance of the services, including the use of, or violation of any copyrighted materials, patented invention, article or appliance; and
- 9.2.11. Shall provide on-the-job capacity building/technology transfer to the Government's personnel detailed to the Project.

10. OWNERSHIP OF THE OUTPUTS/REPORTS/DOCUMENTS

All submitted outputs/reports/documents under this contract, including but not limited to tracings, as-built drawings, estimates, digital information, computer model and data, specifications, investigations and studies completed or partially completed, inspection logs, and photographs, shall be the property of NEDA upon completion of the work / full payment of the contract or termination of the Agreement.

11. CONFORMANCE WITH EXISTING LAWS

The procurement process for this undertaking shall be executed in accordance with Republic Act (RA) No. 9184, otherwise known as the Government Procurement Reform Act (GPRA) and its Revised Implementing Rules and Regulations (IRR).

12. SELECTION CRITERIA

Consultancy Firms must have at least 10 years of similar and/or relevant experience related to this TOR and will be rated based on the criteria shown in **Annex B** ("Criteria for Shortlisting").

The Consulting Firms will be evaluated using the Quality-Cost Based Evaluation/Selection QCBE/QCBS) procedure under RA No. 9184/GPRA and its IRR at *80% for the Technical Proposal and 20% for the Financial Proposal*. The prospective Consulting Firms shall follow the guidelines in the preparation of eligibility requirements pursuant to Section 24.1 and Section 24.2 of the Revised IRR of the GPRA.

13. RETENTION PAYMENT⁶

13.1 A retention payment of ten percent (10%) shall be withheld. It shall be based on the total amount due to the Consulting Firm prior to any deduction and shall be retained from every progress payment until 50% of the value of Study, as determined by NEDA, is completed. If, after 50% completion, the Study is satisfactorily done and on schedule, no additional retention shall be made; otherwise, the 10% retention shall be imposed.

13.2 The total "retention money" shall be due for release upon approval of the Final Report. The Consulting Firm may, however, request the substitution of the retention money for each progress billing with irrevocable standby letters of credit from a commercial bank, bank guarantees, or surety bonds callable on demand, of amounts equivalent to the retention money substituted for and acceptable to NEDA, provided that the project is on schedule and is satisfactorily undertaken. Otherwise, the 10% retention shall be made. Said irrevocable standby letters of credit, bank guarantees and/or surety bonds, to be posted in favor of NEDA shall be valid for the duration of the contract.

14. LIQUIDATED DAMAGES⁷

14.1. Where the Consulting Firm refuses or fails to satisfactorily complete the work within the specified contract time, plus any time extension duly granted and is hereby in default under the contract, the Consulting Firm shall pay NEDA for liquidated damages, and not by way of penalty, an amount, as provided in the conditions of contract, equal to at least one tenth (1/10) of one (1) percent of the cost of the unperformed portion of the works for every day of delay. Should the amount of liquidated damages reaches 15 percent of the contract amount, NEDA shall at its own discretion terminate the contract without prejudice to any further action it may take to recover whatever losses incurred due to non-performance of the Consulting Firm.

⁶Per Annex "E" of the Revised IRR of RA No. 9184

⁷Per Annex "E" of the Revised IRR of RA No. 9184

- 14.2.** To be entitled to such liquidated damages, NEDA does not have to prove that it has incurred actual damages. Such amount shall be deducted from any money due or which may become due the Consulting Firm under the contract and/or collect such liquidated damages from the retention money or other securities posted by the Consulting Firm whichever is convenient to NEDA.

Annex A

The Six (6)-Phase Job Plan:

1. **Information Phase-** the Consultant will review existing and proposed projects design, objectives, and preliminary cost information. The team should understand the limitations of the projects as well as the expected benefits.
2. **Function Analysis Phase-** the Consultant should define the projects' functions and review and analyze these functions to determine which need improvement, elimination, or creation to meet the goals.
3. **Creativity Phase-** the Consultant will employ professional creative techniques to identify other ways to perform the function(s).
4. **Evaluation Phase-** the Consultant will follow a structured evaluation process to select those ideas that offer the potential for value improvement while delivering the function(s)/objectives and considering performance requirements and resource limits.
5. **Development Phase-** the Consultant will develop the selected ideas into alternatives (or proposals) with a sufficient level of documentation to allow decision-makers to determine which alternative should be implemented.
6. **Presentation Phase-** the Consultant will develop a workshop report and/or presentation that document and convey the adequacy of the alternative(s) developed by the Consultant to the NEDA-Project Steering Committee.

Annex B

CRITERIA FOR SHORTLISTING

	RATING FACTOR		POINTS/WEIGHT
I	Experience and Capability of the Firm <ul style="list-style-type: none"> Completed consulting services of size, complexity and technical specialty comparable to job under consideration, including quality of performance <p><i>Similar Projects</i> – VE/VA in various stages of project development and implementation, including options analysis in water resources projects</p> <p><i>Relevant Projects</i> – VE/VA and options analysis in other infrastructure/agriculture projects</p> <ul style="list-style-type: none"> Other completed consulting services related to the job under consideration Known cases of prior performance, including quality of work conforming to obligations and cost of services 	Subtotal	50
II	Quality of Key Personnel Who May Be Assigned to the Project <ul style="list-style-type: none"> Similar and relevant work experience Education Training 	Subtotal	30
III	Job Capacity <ul style="list-style-type: none"> Absorptive capacity to do additional works other than those currently being undertaken 	Subtotal	20
	Total		100