



Trainer's Guide Tender & Pricing Labour-Based Technology for Rural Road Works



**Don Bosco Foundation
Training Center in Comoro**

Trainer's Guide

**Tender and Pricing
&
Contracts and
Business
Management**

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Trainer's Guide, Tender & Pricing, Contracts & Business Management for Rural Road Works

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1 Introduction

These training guidelines for training of small scale contractors in the ***“Tender Process and Pricing for Labour Based Road Construction”*** and ***“Manage your road construction business”*** have been developed to assist trainers in planning, organizing and implementing training program. The training guidelines consist of practical advice, reference material for the training but do not contain extensive pedagogical theories and are also not meant as a substitute to necessary teaching skills.

The training guidelines should be used as an aid to develop the trainer's plans and use as reference material. The guidelines are used together with other training material such as: (i) Manual for Tender Process and Pricing for Labour-based Road Construction (ii) Manual of Manage your road construction business, (iii) Power Points slides (iv) sample of exercises and (v) MPW / R4D tender document for R4D contractor training and use and FIDIC Short Form of Contract for ERA contractor training, adapted for use for Labour-based works in Timor-Leste and.

2 Overall training Programme

The overall training programme offered to domestic contractors to manage labour-based rural road works include technical and management training for contractor's staff including, the company's director, the company engineer and supervisors. Because of their different backgrounds and their different roles in the construction project they require different types of training. Whilst the supervisors need more thorough training focusing on technical aspects the engineer and director also need management training. The training is therefore tailored to the needs of each category of staff. The bar chart below shows proposed type and duration of training for the contractor's different staff.

The bar chart below shows proposed type and duration of training for the contractor's different staff.

Staff/type of training		WEEKS											
		Advertisement	1	2	3	4	5	6	7	8	9		
Supervisor (2-3)	LBT Technical training												
	Practical training												
Engineer (1)	LBT Technical training												
	Contracts management												
	Practical training												
Director (1)	Contracts management												
	Business management												
													Tender

3 How to use these training guidelines

These training guidelines have been prepared as guide for trainers and should be read together with **Manuals**.

These training guidelines consist of:

- (i) the introduction and timetable / training programme
- (ii) guidelines for the training course elements
- (iii) sample of course assessment
- (iv) sample of exercises
- (v) Power points slides presentation for each course element

The recommendations for the use of hand-outs, flipcharts included in these training guidelines, do not exclude the possibility of using overheads, where available. Some of the elements of the training programme are more suitable for active participation by the participants, and many other topics which may be new, need to be introduced in the form of a presentation or lecture. ***Wherever possible there should be variety in the presentation and involvement of the participants in order to retain their attention and interest in what is being presented.*** The modules include instruction / suggestions of how the trainer can present various topics. These are suggestions and can be replaced by the trainer's own ideas, provided the involvement of the participants is guaranteed

4 Guidelines to training topics and session plans

The training topics should be presented as the guide suggests. Sessions corresponds to the training schedules. It is important to ask trainees to fill in the assessment of each training topic that at the end of each day.

The following questions should be asked to the participants to check that the important training elements have been understood.

The following 4 questions should be assessed at the end of each topic:

- ✚ Level of understanding of each topic
- ✚ How the trainee felt about the training technique used by the trainer
- ✚ How well the trainee felt that training material responded to the training topics
- ✚ Any comments from the trainee

Part A: Tender process and Pricing for rural road work

This part is developed for the training in the **tender process and pricing for labour-based road construction works** for company engineers and directors. The tender process and pricing training is part of this contract management training which focus on pricing the bid and tendering process. In addition, this training also includes bid preparation, evaluation, management of equipment for road construction. The trainer's guidelines is developed for the training to be delivered by the Don Bosco Trainers parts other parts that to be delivered by the IADE's trainers is not included in this guidelines. This training aims to equip the engineers and company engineers and directors with sufficient knowledge to prepare bids for labour-based rural road works. *Participants for this training are engineers and directors of the companies*

An overview of the training topics is shown in the following table:

Deliver by:	Session Code	Topics
		 Opening and introduction
LADE	CM 1	 The team in the construction. Role of Client and Contractors
LADE	CM 2	 Tender Process
LADE	CM 3	 Understanding bid document
Don Bosco	CM 4	 Review road construction activities
Don Bosco	CM 5	 Managing equipment
Don Bosco	CM 6	 sample hiring agreement
Don Bosco	CM 7	 Contractor's bid, Work plan
Don Bosco	CM 8	 Bill of Quantities (BOQ)
Don Bosco	CM 9	 Specifications
Don Bosco	CM 10	 Direct cost and calculation
LADE	CM 11	 In direct cost and calculation
Don Bosco	CM 12	 Final unit price Analyse
Don Bosco	CM 13	 Setting bid price
Don Bosco	CM 14	 Submission of winning bid
Don Bosco	CM 15	 Bid evaluation
LADE	CM 16	 Filling bid document

Training Programme/Time Table for Tender process and Pricing for rural road work

Tempu/Data	Day 1	Day 2	Day 3	Day 4	Day 5
8.30-9.15	Introdusaun, objetivu formasaun no orari formasaun / Introduction, training objective and training schedule	Reve atividade konstrusaun estrada / Review road construction activities-(Donbosco)-CM-4	Kontrator nia bid/tender, planu serbisu / Contractor's bid, Work plan -(Donbosco)-CM-7	Kustu direita no kalkulasaun / Direct cost and calculation-(Donbosco)-CM-10	Submisaun husi manan bid/tender / Submission of winning bid-(Donbosco)-CM-14
9.15-10.00	Pre-test	Reve atividade konstrusaun estrada / Review road construction activities-(Donbosco)-CM-4	Kontrator nia bid/tender, planu serbisu / Contractor's bid, Work plan -(Donbosco)-CM-7	Kustu direita no kalkulasaun / Direct cost and calculation-(Donbosco)-CM-10	Avaliasaun bid/tender / Bid evaluation -(Donbosco)-CM-15
Cha Dader					
10.30-11.15		Maneija ekipamentu / Managing equipment-(Donbosco)-CM-5	Bill kuantidades / Bill of Quantities (BOQ)-(Donbosco)-CM-8	Kustu In direita no kalkulasaun / In direct cost and calculation-(IADE)-CM-11	Avaliasaun bid/tender / Bid evaluation -(Donbosco)-CM-15
11.15-12.00	Ekpa iha konstrusaun. Papel husi kliente no kontrator/ The team in the construction. Role of Client and Contractors-(IADE)-CM-1	Maneija ekipamentu / Managing equipment-(Donbosco)-CM-5	Espesifikasaun / Specifications-(Donbosco)-CM-9	Kustu In direita no kalkulasaun / In direct cost and calculation-(IADE)-CM-11	Priense dokumentu bid/tender / Filling bid document-(IADE)-CM-16
Han Meudia					
13.00-13.45	Ekpa iha konstrusaun. Papel husi kliente no kontrator/ The team in the construction. Role of Client and Contractors-(IADE)-CM-1	Maneija ekipamentu / Managing equipment-(Donbosco)-CM-5	Espesifikasaun / Specifications-(Donbosco)-CM-9	Kustu In direita no kalkulasaun / In direct cost and calculation-(IADE)-CM-11	Priense dokumentu bid/tender / Filling bid document-(IADE)-CM-16
13.45-14.30	Prosesu bidding/tenderizasaun / Bidding process -(IADE)-CM-2	Maneija ekipamentu / Managing equipment-(Donbosco)-CM-5	Kustu direita no kalkulasaun / Direct cost and calculation -(Donbosco)-CM-10	Final analise kustu/Final unit price Analyse-(Donbosco)-CM-12	Priense dokumentu bid/tender / Filling bid document-(IADE)-CM-16
Cha Lorokraik					
15:00-15:45	Komprende dokumentu bid / Understanding bid document -(IADE)-CM-3	Aluga ekipamentu no kontrola / Hiring equipment and control. Sample hiring agreement -(Donbosco)-CM-6	Kustu Direita no kalkulasaun / Direct cost and calculation-(Donbosco)-CM-10	Koloka presu bid/tender / Setting bid price-(Donbosco)-CM-13	Post test no asesmentu formasaun / Post test and training assessment
15:45-16:30	Komprende dokumentu bid/tender / Understanding bid document -(IADE)-CM-3	Aluga ekipamentu no kontrola / Hiring equipment and control. Sample hiring agreement -(Donbosco)-CM-6	Kustu Direita no kalkulasaun / Direct cost and calculation-(Donbosco)-CM-10	Submisaun husi manan bid/tender / Submission of winning bid-(Donbosco)-CM-14	

Opening and Introduction of the Training	1-2h
Objective This training normally follow directly on from the technical training for the engineer so there is no need for lengthy introductions. However, as the company directors will attend they should introduce themselves, backgrounds experiences and expectations. The trainer will introduce the training topics to be covered in more detail, and explain the expected outcomes at the end of the training.	
Trainer's material ✚ Training Manual Tender Process and Pricing for Rural Road Construction ✚ Power point slide presentation(#Introduction) ✚ Flip chart ✚ Post-It and Markers	
Hand out ✚ Administrative Information ✚ Training Schedule	
How is this topic conducted It is important to get off to a good start. There may be an official opening before the actual training starts. Whether there is an official opening planned or not it is good to provide the context for the training, an overview of the course and what the expectations might be. 1) All the trainees to introduce themselves start from the trainer. Each person should introduce him or herself eg by: name, where they come from, which company/institution they belong to, a brief description of their relevant experience. 2) Brief trainees about administrative arrangement during the training. 3) Brief trainees about the training programme and the topics covered in the training, and techniques used for various session, the mix of lectures, exercises and practical training. 4) Introduce the "Technical Manual in Pricing and Bidding for LBT for rural road construction". Explain that the manual will be distributed in the end of the class room training. 5) Explain the use of power point slides, prepared to support the Manual, and that printouts of the power point presentation will be distributed at the end of each session. 6) Setting rules for the training: After the introduction, the trainees should agree on a set of rules for the training. The rules shall then be written on a flip chart and displayed for the entire duration of the training. For instance: No smoking in the class room, to keep mobile phone on silent mode, to be punctual and disciplined, to respect each other, etc.	
Exercise Expectations: Each trainee is given a different colour Post-It to write his or her expectations of the training and what they hope to have learned from the training. All Post-It are posted on a flip chart paper. Read out some expectations and keep until the end of the class room training.	

CM-1: The team in the construction. Role of Client and Contractors	1 h
Objective To ensure the trainees understand the roles of the client the roles and the responsibility of the contractors and their staff.	
Trainer's material  IADE training manual  Power point slide presentation of CM 1 session  Flip chart, Power point projector	
Hand out  Power point slide presentation of CM 1 session	
How is this topic conducted 1) Ask 2-3 volunteer on who are the team of construction. Write down the answer in the flip chart. Guide by the trainer then write the right answer. 2) Then project the power point slide if the answer are correct. Start from the role of the client from preparing the bid document until completion of the contract. 3) Ask 2-3 participant to answer the roles of each team (company, client and engineer) and write down the answer. This can be done by also projectors the right answer in the power point slides. 4) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow.	
Exercise: N/A	

CM -2: Bidding process	1-2h
Objective Ensuring the participant understand the process of MPW/R4D bidding is carried out.	
Trainer's material  Tendering and Pricing for rural road work manual(to distribute end of the training)  Power point slide presentation of CM 2 session  Flip chart, Power point projector	
Hand out  Pre-printed Power point slide presentation of CM 2 session	
How is this topic conducted 1) Ask 2-3 volunteer on process of tender that the participant familiar with. Write down the answer in the flip chart. 2) Project the power point slides of the tendering process under the MPW/R4D. Then explain accordingly. 3) Ask 2-3 participant to explain of each process of the tender start from survey and prepare bid document until contract award. List down the answer in a flip chart. Then the trainer conclude the right answer for the entire process of tender under the MPW/R4D. 4) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow.	
Exercise: N/A	

CM -3: Understanding of the MPW/R4D Bid Document	1-2h
Objective To introduce the MPW/R4D bidding document. To ensure that the participants understand major topics, instruction to bidders and contract conditions cover in the bidding document before commencing tender of road works.	
Trainer's material  MPW/R4D bidding document Volume 1, 2 and 3  Flip chart, Power point projector	
Hand out  MPW/R4D bidding document Volume 3	
How is this topic conducted 1) Ask volunteer company director on what bidding document they were using. What consist in those bidding document. List down the answer in order to compare to the MPW/R4D bidding document. 2) Distribute the Volume 3 of bidding. 3) Project the volume 1 and 2 of some standard clauses: Bid Data sheet, and Contract Data. 4) Get few participants to read the important part of the document like: instruction to bidder, condition of contract, 5) Project the checklist in volume 3 that document to be filled for bidding 6) Explain most important part: where, when and how the bid is submitted. Number of copy and envelope for submission. Pre bid meeting, site visit, late of bid submission, eligibility of bidders, 7) Home work. Request the participant to ready the bid document and return any question for next day and answer the question if applicable or keep for other day if time is not permitted 8) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow.	
Exercise: N/A	

CM-4: Review Road Works Activities	1 h
Objective To ensure the trainees know and familiar with the basic road construction activities (review from the technical training) in order to link to next calculation session.	
Trainer's material ✚ Training Manual Tender Process and Pricing for Rural Road Construction ✚ Pre-printed Power point slide (CM-4) ✚ Flip chart, Projector, Laptop	
Hand out ✚ Power point slides on road construction activities,	
How is this topic conducted 1) Ask one or two engineers to explain the sequence of construction activities start from setting out, clearing to graveling activities. Write down on flip chart. 2) Ask another engineer to explain how each activity should be carried out, focus on: ditching, cambering and graveling 3) Use power point slide to show the sequence of construction activities and of step of construction of side drain and camber and graveling works. Explain how to carry out of any of the other activities that the previous trainees did not explain or not proper explain. 4) Explain the cut and fill form using the power point slide and explain what is cut and fill and what is cut to spoil. 5) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow.	
Exercise: ✚ Calculate volume of gravel for 1 km road. ✚ Calculate number of labour required to spread the gravel of 1 km	

CM-5: Managing equipment	3 h
Objective To ensure the trainees are able to manage their construction equipment effectively for the road construction work.	
Trainer's material ✚ Training Manual of Manage your road construction business. ✚ Pre-printed Power point slide (CM-5) ✚ Flip chart, Projector, Laptop	
Hand out ✚ Power point slides on of CM 5 ✚ Blank form of equipment log sheet, material delivery sheet, fuel distribution record	
How is this topic conducted 1) Ask one or two directors to explain what type of construction equipment that are important for their construction. List down the answer and guide the participant of the construction equipment to be use for road work 2) Take an example of using dump truck: ask the participants how to control fuel for the truck ? how to make sure effective of using the truck. Example of transport gravel how to control the trip. Explain how to calculate number of labour required if they have 3 trucks to deliver gravel 3) Repeat the same process of 2) to explain the excavator by giving example of calculating number of truck required for one excavator to excavate gravel. 4) Ask what type of arrangement are more effective if the contractor rent 2 trucks for the construction. 5) Give an example to arrange a flat bed truck to transport cement from Dili. If the capacity of the truck can transport 3 tons so how many cement can be transported and how many piece of steel can be transported. 6) Give an example of renting roller how to arrange the roll to be effectively. Example of 12 T roller should it be stand by. Example of spreading gravel how many labour should be employed for 12 T roller and how many labour should be employed for 1 T roller. 7) Explain and do exercise of filling equipment log sheet, ,material delivery form and fuel distribution form. 8) Ask when should be equipment to be repaired. How do the contractor know when is should be repaired. Guide for correct answer. Explain and fill the equipment repair form. 9) If time allow do more exercise of filling the material delivery form and calculate number of truck use one excavator. *** Group exercise by using : 1 excavator, 1 roller, trucks??. To calculate when should send excavator, when should send truck, and how many truck to be sent and when should send roller, and 1 day how long road roller can do, 1 day how long road can deliver grave. Calculate distance from 1 heap of gravel to other (review from technical training) 10) Take 2-3 questions and answer if the questions are relevance before moving to next	

session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow.

Exercise:

- + Calculate number of truck if use 1 excavator to excavate gravel. Of 1 day the truck can do 10 trips. And excavator can excavate 120 m³
- + Calculate number of labour require if contractor use 2 trucks. The labour are excavate and loading gravel. Task norm: excavation 1.1 m³/WD and loading 4.5 m³/WD, Calculate how long of road can be complete per day.
- + Use exercise from the entry test of truck transport cement from Dili. What happen if the truck transport only half of the capacity. The truck can transport 100 bags per trip to complete 1000 bags of cement. Cost of the truck is 100 \$per trip. If the truck transport only half truck for each trip, how much the contractor will lost
- + Filling material delivery form and filling equipment logsheet

CM-6: Sample hiring equipment agreement	1 h
Objective The trainees are understood of importance of the hiring equipment agreement to apply to their work.	
Trainer's material  Training Manual of Manage your road construction business.  Sample of pre-printed agreement of hiring equipment  Flip chart, Projector, Laptop	
Hand out  Sample of pre-printed agreement of hiring equipment	
How is this topic conducted 1) Ask in general how the director rent equipment for their construction: base on daily cost, monthly.. and how the payment be made. 2) List down the answer in a flip chart. Get the participant to agree to hire the equipment daily preferable. 3) Same time ask if any agreement they use so far. And what type of agreement, if possible to ask them to bring a sample if they use before. 4) Distribute the sample of the agreement. Read the agreement in some importance parts base on time available. 5) To receive any comment on the sample of the agreement if any. If applicable to revise the sample of the agreement accordingly. 6) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow.	
Exercise: Ask the participant to read the sample of the agreement and come back with question next morning if any.	

CM-7: Contractor's bid, Work plan	1-2h
Objective To ensure the trainees know how to prepare the work plan in order to calculate the construction cost.	
Trainer's material  Training Manual Tender Process and Pricing for Rural Road Construction  Flip chart  Blank and filled work plan	
Hand out  Blank work plan form and a filled work plan.	
How is this topic conducted 1) Ask the participant why to prepare work plan? What are importance for preparing the work plan. List down the answer and response the correct answer. 2) Distribute blank form of work plan to the trainees and show in the projector of blank work plan. With the trainee to fill the work plan two work items and ask one or two trainees to fill the rest of the plan (group exercise to fill the rest of the form and each group to present the result).	
Exercise: Fill work plan as group exercise per company (director and engineer)	

CM-8: Bill of Quantities (BOQ)	1 h
Objective To ensure the trainees understand of the purpose of the BOQ in preparation for the sessions on unit rate analysis.	
Trainer's material  Training Manual Tender Process and Pricing for Rural Road Construction  Blank formats of BOQ  Flip chart, projector, Laptop	
Hand out  Blank and filled for of a sample R4D's BOQ of a road work	
How is this topic conducted 1) Ask the participants in general what is BOQ and what are importance of the BOQ. Explain the BOQ is located in which volume of the bid document. 2) Distribute blank form BOQ of to each trainees ask one or two engineers to go through the activities. Show in the projector of a blank BOQ and explain which part to be filled by the client and which to be filled by the contractor. 3) To explain that the unit rate to be calculated by the bidder and amount of the bid. 4) To explain the link of the item number and the specification. 5) Ask 2-3 participant to read few work items then read the specification of those items 6) Give an example to fill one item in the unit rate and calculate the amount. 7) To explain, the BOQ and unit rate will be linked to the payment certificate and for the payment. <i>To make sure that the trainees understand that all the BOQ items should be read together with the work specifications.</i> 8) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow.	
Exercise: Blank BOQ form to be distributed to the participants. Unit rate and quantity is provided in the form. The participants to calculate total amount of each item listed in the BOQ.	

CM-9: Technical Specifications	1 h
Objective To ensure the trainees understand of the purpose of the Technical specification and to apply for the road works.	
Trainer's material  Sample of pre-printed R4D Technical Specification  Flip chart, projector, Laptop	
Hand out  R4D Technical Specifications(Tetun version)	
How is this topic conducted 1) Ask volunteer company director on what specification that they apply for their construction work. List down the answer in order to compare to the MPW/R4D technical specifications. 2) Project the technical specifications and explain the link of the work item No in the BOQ. 3) Get the participant to read one by one and explain the work method. 4) To emphasis the structure of the specification: description, work method, check, safety on site. To emphasis the unit for payment of each item which is listed in the specification. 5) Ask 2-3 engineers to explain how the work method of some work items. And compare to the specifications. 6) Distribute the sample of the technical specifications. 7) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow	
Exercise: Home work. Request the participant to ready the sample of the specification and return any question for next day and answer.	

CM-10: Calculation of Direct Cost	1-2h
Objective To ensure that the trainees understand to calculate the unit rate for pricing of the bid.	
Trainer's material ✚ Training Manual Tender Process and Pricing for Rural Road Construction ✚ Power point slide presentation ✚ Flip chart ✚ Hand out of unit rate analyze, a set of unit rate analyze, hand out of material use for construction. ✚ Blank form of BOQ for direct cost calculation	
Hand out ✚ Power point slides, ✚ hand out of the unit rate analysis on direct cost, ✚ hand out of material use, sample of final unit rate analyze and ✚ hand out of explanations of unit price analyze.	
How is this topic conducted 1) To explain the system of contract price based on unit prices (commonly used, and used for the ERA Project). Therefore the trainees Must understand unit rate calculation. 2) Show a sample BOQ of the ERA Project where the quantities have been filled and the bidder need to fill the unit rate and calculate the bid amount. 3) Use power point slides to show a pyramid chart and explain the direct cost and that indirect costs such as, company cost, risk allowance and profit will be added to the total cost. 4) Ask a one or two trainees to explain what indirect cost is and what can be considered indirect costs and note down in the flip chart 5) Explain what direct cost for the road works consist of: labour cost, material cost, hand tool and equipment cost. 6) Explain how to calculate of labour cost and equipment cost. Ask any trainee know of renting cost of equipment to be used under their contract 7) Use power point to show table of hand tools and explain how to calculate cost of the hand tools. 8) Take one example in the BOQ of Item 3.4 excavation of earthwork for calculating the direct cost. Explain step by step how to calculate the direct cost of this item. 9) Together with the trainees to fill the unit price analysis for item 3.4 "levelling and forming camber" 10) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow	

Exercise

-  Group the trainee in 5 consist of 5 each and mix directors and engineers. Give a blank form to calculate unit price of difference item of work. (give 20 mn for one item)
-  Each group explain the result. Show in projector of BOQ of blank form and ask the trainees to put the result in a blank BOQ for calculating the direct cost. Fill other missing cost as example to get total direct cost in the contract.
-  With the trainee to fill the BOQ of direct cost to be used to calculate the indirect cost.

CM-11: Calculation of In-direct Cost	1-2h
Objective To ensure that the trainees understand how indirect cost is calculated and what consist in the indirect cost.	
Trainer's material ✚ Training Manual Tender Process and Pricing for Rural Road Construction ✚ Power point slide presentation ✚ Flip chart ✚ Hand out of unit rate analyse, a set of unit rate analyse, hand out of material use for construction.	
Hand out ✚ Power point slides, ✚ hand out of explanations of unit price analyse.	
How is this topic conducted 1) In the power point slide show again a pyramid chart and explain the indirect cost is, company cost risk allowance and profit. 2) Ask a one or two trainees to explain what consist in indirect cost, company cost and note down in the flip chart 3) To explain indirect cost for the road works consist of what in it: Company cost and supervision cost. 4) With the participants work together to calculate company cost and supervision cost 5) List down the result from this exercise to next session 6) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow	
Exercise ✚ Group the trainee per company(group engineer with director). The group to calculate indirect cost for their own company of the construction period is 6 months.	

CM-12 and 13: Final Unit rate analyse and setting bid price	1-2h
Objective To ensure that the trainees know how to analyse the unit rate and include the unit in the BOQ for calculating the final bid price for the tender.	
Trainer's material ✚ Training Manual Tender Process and Pricing for Rural Road Construction ✚ Power point slide presentation ✚ Flip chart, Projector, Laptop ✚ Filled BOQ as sample ✚ Hand out of unit rate analysis, a set of unit rate analyse, hand out of material use for construction.	
Hand out ✚ Pre-printed Power point slides of CM 12 and CM 13, ✚ R4D work norm ✚ Blank of R4D unit rate analyse and final unit price analyse as sample ✚ Blank form of BOQ and Filled BOQ as sample and three main items	
How is this topic conducted 1) From the result of company cost, supervision cost and the result from the direct cost calculation to calculate in % of supervision cost and company cost. 2) Explain also that, some contract can put in the unit rate form in % but this is only guess which is some time too high and some time too low. but in general should be over head and profit in the rank of 15-25% of direct cost. 3) Insert the result of the % of supervision cost, company cost, risk allowance and profit to put in the form of unit price analyses for three main items to get final unit rate of those items. 4) Distribute work norm for each participants. Then distribute blank for of unit rate analyse for group exercise. To analyse 4-5 work item by using 19.5% of overhead cost that set by R4D. Each group do difference work item 5) Each group to present result of the rate. 6) Distribute blank for BOQ and keep the same group by using the result of the unit rate put in the BOQ and calculate the bid price if time enough. 7) The full hand out will be given at end of the training. This should include BOQ for calculating the indirect cost and final cost. 8) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow	
Exercise ✚ Group the trainee per company mix directors and engineers. Give a blank form of unit rate	

analyses. To calculate unit rate for difference item of work by given difference 19.5% of indirect cost.

- + Each group to present the result and explain how the calculation is come up.
- + Fill BOQ by using the unit rate from the calculation.

CM 14: submission of winning bid	1h
Objective To ensure the trainees understand how to prepare the bid and calculate to get good and competitive bid price for their tender.	
Trainer's material ✚ Training Manual Tender Process and Pricing for Rural Road Construction ✚ Power point slide presentation(CM 14) ✚ Flip chart, projector, Laptop	
Hand out ✚ Pre-printed Power point slides CM-14	
How is this topic conducted 1) Ask few trainee director how much profit they want to make for a road construct. If more profit will it be affected to bid price? List the answer in a flip chart. 2) Project the power point on the optimum option for obtaining better bid price. Try to get more interaction in this session by asking the 4 options of optimum bid price. 3) Ask few trainees that if we like to win a bit what should we do? Guide the trainees to get answer to reduce bid price. Reduce labour cost, reduce material cost, reduce equipment cost..... 4) Do same exercise of if reduce labour cost by maximising the task rate. The same exercise of reducing equipment cost by sharing use of a roller.... 5) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow	
Exercise: ✚ Using the filled BOQ of and bid price from CM-13 session. Use one unit rate of graveling activity if reduce roller cost by sharing roller for two location. Calculate new bid price. ✚ Same exercise to reduce concrete cost by reduce material cost of transport. Instead of 1 truck can transport only 3 trips per day to use transport for 4 trip per day. What is new cost of stone and sand. What is the new bid price.	

CM 15: Bid Evaluation Process	1 h
Objective To ensure the trainees understand how the evaluation process is carried out. What is meaning of bid compliance. What criteria have been considered for evaluation.	
Trainer's material  Training Manual Tender Process and Pricing for Rural Road Construction  Power point slide presentation(CM 15)  Flip chart, projector, Laptop  Bid check of MPW/R4D	
Hand out  Pre-printed power point slides of the Bid Evaluation process  Bid check list of the MPW/R4D bid.	
How is this topic conducted 1) Ask one trainee if he/she has experience to evaluate the bid. If yes he/she should explain from bid submission to contract award. 2) Explain start from forming bid evaluation committee. Explain in the power point on MPW/R4D bid evaluation process until contract award. 3) Distribute hand out of the bid checklist. Explain the importance of the arithmetic check. Give an example of the corrected bid price is difference from the submitted bid price. Which one is the official use for the contract. 4) Project the ERA form of arithmetic check. Explain who to arithmetic check and ask one or two training form to fill few item to compare to the corrected one. 5) Explain start from qualification compliance, Technical bid compliance, financial bid evaluation. 6) To provide more explanation on the arithmetic check, and compliance of bid. To inform the trainees that the evaluation committee considers: "If any item too low and client might consider to disqualify the bid" 7) End of the explanation, ask one or two volunteers to re-explain the entire process of the bid evaluation. 8) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow	
Exercise: N/A	

CM 16: Filling bid document	1-2h
Objective To ensure that the participant capable to fill bid document properly to avoid the bid is rejected during the bid opening or bid evaluation. Ensuring the bid submission is on time and all required document are submitted.	
Trainer's material  Training Manual Tender Process and Pricing for Rural Road Construction  Power point slide presentation  Flip chart, projector, laptop	
Hand out  Training Manual Tender Process and Pricing for Rural Road Construction  Blank forms of volume 3 of the MPW/R4D bid document	
How is this topic conducted 1) Ask volunteer participant of any document to be submitted. List down the answer in order to compare to the MPW/R4D bidding document. 2) Distribute volume 3 of the MPW/R4D bid document. To all participants 3) Project the check list in the projector and explain 1 by 1 and show the document or format to be filled. Ask each participants to fill based on their company information. 4) Each form is filled than 1 participant to fill their answer in the form that projected in the board. 5) Distribute to the filled bid document and explain that the document is only sample not for submission. 6) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow	
Exercise  Group the trainee per company mix directors and engineers. Exercise to fill the volume 3 1 by 1 till end of the time allocated for this session.  Each group to present the result and explain to other.	

Part B: Manage your road construction Business

These training guidelines are developed for the training in “**Managing your road construction business**” for company directors. This manual is developed to add to the existing of the Business management manual of the IADE training. These trainer’s guidelines are focusing on the additional training manual which is not cover full course of the Business management training.

The training is delivered by Don Bosco’s trainers and IADE trainers aims to equip company directors with sufficient knowledge to manage their road construction business for the labour-based rural road works. *Participants for this training are directors of the companies*

An overview of the training topics is shown in the following table:

<i>Deliver by</i>	<i>Session Code</i>	<i>Topics</i>
IADE	BM 1	 Financing your business
Don Bosco	BM 2	 Cash flow Cast flow cost
Don Bosco	BM 3	 Cash flow Income
Don Bosco	BM 4	 Cash flow-Forecast
Don Bosco	BM 5	 Cash flow analysis
IADE	BM 6	 Preparing and reading accounts
IADE	BM 7	 Book keeping. Record of Profit and Loss account
IADE	BM 8	 Balance sheet
IADE	BM 9	 Financial statement analysis
IADE	BM 10	 Costing plan and equipment
IADE	BM 11	 Material purchase and inventory control
Don Bosco	BM 12	 Labour Incentive payment scheme. Labour subcontracting
Don Bosco	BM 13	 Managing site and office staff
IADE	BM 14	 Record keeping
IADE	BM 15	 Site records
Don Bosco	BM 16	 Contractors IPC and payment
IADE	BM 17	 Business ethics and image, marketing

SCHEDULE FOR BUSINESS MANAGEMENT TRAINING FOR DIRECTORS					
Tempu/Data	Day 1	Day 2	Day 3	Day 4	Day 5
8.30-9.15	Introdusaun, objetivu formasaun no orari formasaun/ Introduction, training objective and training schedule (IADE+Don)	Kustu arus kas/Cash flow costs (Don Bosco)-BM-2	Prepara no le kontas/Preparing and reading accounts (IADE)-BM-6	Planu kustu no ekipamentu/Costing plan and equipment (IADE)-BM-10	Pencatatan/hakerek / Record keeping (IADE)-BM-15
9.15-10.00	Pretest (IADE+Don)	Rendimentu arus kas/Cash flow Income (Don Bosco)-BM-3	Prepara no le kontas/Preparing and reading accounts (IADE)-BM-6	Sosa material no kontrola inventariu/Material purchase and inventory control (IADE)-BM-11	Rejistu iha terrenu/ Site records (IADE)-BM-16
Cha Dader					
10.30-11.15		Rendimentu arus kas/Cash flow Income (Don Bosco)-BM-3	Kontabilidade. Rejistu konta laba no rugi / Book keeping. Record of Profit and Loss account (IADE)-BM-7	Skema pagamentu insentivu traballador. Subkontratu traballador / Labour Incentive payment scheme. Labour subcontracting (Don Bosco)-BM-12	IPC kontrator pagamentu / Contractors IPC and payment (Don Bosco)-BM-17
11.15-12.00	Finansiamentu ita bo'ot nia negosiu / Financing your business (IADE)	Rendimentu arus kas/Cash flow-Forecast (Don Bosco)-BM-4	Kontabilidade. Rejistu konta laba no rugi / Book keeping. Record of Profit and Loss account (IADE)-BM-7	Skema pagamentu insentivu traballador. Subkontratu traballador / Labour Incentive payment scheme. Labour subcontracting (Don Bosco)-BM-12	IPC kontrator pagamentu / Contractors IPC and payment (Don Bosco)-BM-17
Han Meudia					
13.00-13.45	Finansiamentu ita bo'ot nia negosiu / Financing your business (IADE)-BM-1	Rendimentu arus kas/Cash flow-Forecast (Don Bosco)-BM-4	Folha balansu/Balance sheet (IADE)-BM-8	Skema pagamentu insentivu traballador. Subkontratu traballador / Labour Incentive payment scheme. Labour subcontracting (Don Bosco)-BM-13	IPC kontrator pagamentu / Contractors IPC and payment (Don Bosco)-BM-17
13.45-14.30	Arus kas no kontrola kas / Cash flow Cast flow cost (Don Bosco)BM-2	Rendimentu arus kas/Cash flow-Forecast (Don Bosco)-BM-4	Folha balansu/Balance sheet (IADE)-BM-8	Maneja terrenu no pessoal eskritoriu / Managing site and office staff (Don Bosco)-BM-14	Etika negosiu no imajen, merkadaria ka marketing / Business ethics and image, marketing (IADE)-BM-18
Cha Lorokraik					
15:00-15:45	Arus kas no kontrola kas / Cash flow-cost (Don Bosco)-BM-2	Analiza arus kas / Cash flow analysis (Don Bosco)-BM-5	Analiza esteitementu finanseira / Financial statement analysis (IADE)-BM-9	Maneja terrenu no pessoal eskritoriu / Managing site and office staff (Don Bosco)-BM-14	Post test, asesmentu formasaun no taka / Post test, training assessment and closing
15:45-16:30	Arus kas no kontrola kas / Cash flow-cost (Don Bosco)-BM-2	Analiza arus kas / Cash flow analysis (Don Bosco)-BM-5	Analiza esteitementu finanseira / Financial statement analysis (IADE)-BM-9	Pencatatan/hakerek / Record keeping (IADE)-BM-15	

BM 2,3,4 & 5: Cash flow	7h
Objective: To ensure that the trainees know how to prepare their cash flow for their road contract.	
Trainer's material  Manual: Additional manual in Managing your road construction business.  Power point slide presentation (BM 2,3,4,5)  Flip chart, projector, Laptop	
Hand out  Pre-printed Power point slides on BM 2,3,4,5  Blank forms of work plan, cash flow forms. And a cash flow form that filled	
How is this topic conducted 1) Ask participant what is cash flow and guide the participants to get right answer. Write down the answer in a flipchart. 2) Project and explain in the power point what consists in the cash flow: Answer should be: cash flow cost, cash flow income, cash flow plan and analyse of cash flow. 3) Ask and explain what consist in cash flow cost for road construction work and guide them to get right answers. 4) Ask and explain how to calculate the cash flow cost for a unit item of the road construction work. Write down the right answers. Cash flow cost(cash flow-out: 5) Calculate a cash flow cost (direct cost) of a work item let say graveling activity. Then do more exercise by company to calculate of the direct cost of other work items as many as possible. 6) Project the work plan without cost. Put direct cost of one item from the exercise together then the rest will be done as group exercises. 7) Together with the participants to fill the cash flow cost in the blank form. Cash flow-in: 8) Ask and explain what is cash flow-in for a road construction work. Write down the right answer in a flip chart. 9) Explain how to calculate the cash-in from advance payment and write down in the column in the form of cash-in. 10) Repeat the same process to calculate the cash in from the interim payment by using the progress in the work plan. 11) Work together with the participants to fill the column of cash-in for 2 or 3 months the rest will be filled by the participants if time is allow otherwise this can be done as home work. Cash flow plan and analyse:	

- 12) From the cash in and cash out to calculate the deviation. This shows which month the cash will be shortage.
- 13) If any month that cash is shortage what should be the solution?
- 14) Ask participants to find out the solution and write down the answer in the flip chart.
- 15) Then conclude the solution in order to make sure that cash is covered for the entire construction period.
- 16) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow.

Exercise

-  Group per company exercise: to calculate direct cost for cash flow out
-  Calculate cost flow in by interim payment
-  Calculate deviation of the cash and out.

BM 9: Financial management	2 h
Objective To ensure that the trainees know how to plan and manage their financial for road construction project. This part is prepared in addition to the IADE session of the financial management.	
Trainer's material ✚ Manual: Additional manual in Manage your road construction business. ✚ Power point slide presentation (BM 9) ✚ Flip chart, projector, Laptop	
Hand out ✚ Pre-printed Power point slides on BM 9 ✚ Blank forms: cash book record, monthly cash record, sub contracting account record, costumer account record.	
How is this topic conducted 1) Ask participant what is financial. How can you manage your financial for a road project. Guide the participants to get right answer. Write down the answer in a flipchart. 2) Ask participants what type of record that they use for recording their cash and list down the answer. 3) Project and explain in the power point on: maintain a record book, make monthly cash record compare your actual expense to your cash flow plan. At the end of the completion of your work you need to find out lost/profit by comparing total expense to amount received from your client. 4) Distribute blank form of the cash book. Give example of 3-4 expenditures then the participant to record in the cash book. 5) Distribute blank form of the costumer account record. Give example of 3-4 expenditures then the participant to record in the form. 6) Distribute blank form of the subcontract account record. Give example of a sub contracting and make first payment to the sub contractor. Then the participant to record in the form. 7) Distribute blank form of the monthly cash record. Give example of cash in of advance payment, expenditure for purchasing material, tool, rent equipment for first month and second month. Then the participant to monthly record. 8) For the monthly record ask the participants if they have enough money to carry out the work further for the following month. If not they should be able to come up with solution as mentioned in cash flow session whether loan the cash or make more regular payment. If the client delate the payment what should be the solution 9) Re-explain they will be shortage of amount until end of the project. Then their profit more or less in the retention of 10% of the contract amount. If they manage the project will and proper control their financial they can make profit more then 10% mean that they have already received some profit in addition to the retention amount.	

10) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow.

Exercise

-  Fill Group per company exercise: to fill cash record book
-  To fill costumer account record form
-  To fill sub contract account record form
-  To fill monthly cash record form

BM 12: Labour Incentive payment scheme. Labour subcontracting

2 h

Objective

To introduce the trainees to various payment schemes available. To ensure that the trainees understand of what tasks are and how to arrive at certain task rates. To know the typical productivity rate for various activities to understand the role of management (supervisors) in setting out production targets and to understand that the standard task rates can be altered and when it is appropriate to alter the rates. Make sure the trainees are able to establish tasks rate and calculate number of labour required for each activity

To ensure the trainees know how to manage labour sub contract and able to calculate for sub contracting a piece of work .

Trainer's material

-  Manual: Additional manual in Manage your road construction business.
-  Power point slide presentation (BM 12)
-  Flip chart, projector, Laptop

Hand out

-  Pre-printed Power point slides on BM 12
-  Labour task rate ERA and R4D task rate
-  Blank forms: labour sub-contracting account record.

How is this topic conducted

Labour Incentive payment

- 1) Give an example of work that needs to be done, eg to excavate 100 m³ using labourers. Ask several trainees to give difference methods of work to complete the excavation work, and what different payment systems can be used. Note the answers on the flip chart.
- 2) From the above answer conclude three payment incentives payment scheme can be applied for the labour based road works.
- 3) From the above example, to discuss and compare advantage and disadvantage of the three incentive scheme for labour based work and recommend an option (Task Work) that is suited for the labour based road work.
- 4) Explain in theory how the work norm can be established, through time studies. Give the example of road clearing activity.
- 5) At end of this session to show use power point to shoe presentation of the standard norm for road works.
- 6) ***Explain that tasks must be fair, and that they should be reviewed from time to time and that they may differ from site to site depending on the local conditions.***
- 7) Explain that the average worker should be able to complete his or her task in around six hours

Labour sub contracting

- 8) Ask participant what is sub-contracting. What type of work can be sub contracted for the road construction work. Guide the participants to do sub contacting of labour cost for drainage structure, gravel supply.
- 9) Ask the participants that Can all the work be sub contracted ? should the contractor obtain approval from the client for before sub contracted part of the work.
- 10) If labour sub-contracting to make sure that the labour cost is not higher then the labour cost they calculated in the unit rate analyse.
- 11) Give an example for labour sub-contracting a 100 m of lined drain and work together.
- 12) Re-explain to record all the payment to the sub-contractor by using form of Labour Sub contracting record.
- 13) Take 2-3 questions and answer if the questions are relevance before moving to next session. If the questions are not relevance depending on time allow the trainer can answer otherwise ask permission to answer when time is allow.

Exercise

-  Individual exercise: to calculate work norm for excavation of earthwork and ditching side drain. Two trainees to present the result at the end of the exercises
-  Repeat the same calculation exercise to calculate task rates for as many as possible of other road construction activities
-  Calculate labour cost for lined drain of 100 m for sub-contracting
-  To fill sub contract account record form

BM 13: Managing site and office staff	2 h
Objective To ensure that the trainees are able to organize the works, calculate the number of labour for each activity, to sequence the work and balance work gangs. To understand that rate of production for different activities can be controlled by gang size, to understand that it is undesirable to change the total number of workers on site regularly i.e. it is better to reassign workers rather than recruit or send workers home for a number of days, to understand that an optimal gang size per activity will keep the desired “gap” between the different activities, to be able to adjust the gang size to achieve desired production rate for each activity To understand the roles of the site staff: gang leader, supervisors, engineers and office staff: admin. and finance staff.	
Trainer’s material ✚ Manual: Additional manual in Manage your road construction business. ✚ Power point slide presentation (BM 13) ✚ Flip chart, projector, Laptop	
Hand out ✚ Pre-printed Power point slides on BM 13 ✚ Labour task rate ERA and R4D task rate ✚ Muster roll and daily site plan and weekly report.	
How is this topic conducted The trainer will start this session as a lecture and encourage interaction through questions and answers. After the topic has been introduced trainees will do the exercise to calculate labour input and prepare work plan for some activities (Need to check this and also see if this should not be together with roles and responsibilities) 1) Ask the trainees who is involved in the site organisation and list on the flip chart. Thereafter, draw a typical site organisation on the flip chart. Explain role and reporting channel of each position. 2) The sequencing of work explained was introduced in the previous session. Use power point slides to again show how to manage the labour in a proper sequence. 3) Explain how to manage recruitment according to the needs, explaining recruitment of labour step by step based work activities 4) Explain how to calculate labour force for each activity and give examples on the flip chart. The trainer needs to draw the attention to a fair and transparent recruitment process, employment conditions, prompt payments and equal treatment of men and women. 5) Ask the participant what the roles of gang leader, site supervisors, engineers. 6) Ask the participants what the roles of supporting staff like: admin and finance staff, director.	

Exercise

 Individual exercise: calculate volume earthworks (clearing and excavation, and calculate number of labour) . Sample of the exercises are attached in Section 7.

BM 15: Site rerecord keeping	2 h
Objective To ensure that the trainees understand the purpose of all administrative forms like: Muster Roll: (i) Understand the importance of muster role and it forms the basis for computation of wage etc. (ii) It is a record of payment made to labourer, (iii) Understand that the muster roll is done every day for the following day Other forms to be fully familiar with, be able to use and know the importance of other forms e.g. store records, equipment log sheet, tools records, employment registration form, fuel records, material delivery sheet	
Trainer's material  Manual: Additional manual in Manage your road construction business.  Power point slide presentation (BM 14)  Flip chart, projector, Laptop	
Hand out  Pre-printed Power point slides on BM 13  Administrative Forms: (i) muster payroll (ii) tools stock record (vii) fuel stock and fuel distribution record (iv) equipment log sheet (v) Muster roll and (vi) material delivery sheet.	
How is this topic conducted 1) To show blank forms in projector and also give hand out of the blank forms to the trainees. 2) Together with the trainees fill all the daily report and plan of two items. 3) Group exercise to fill other items of the daily report form. 4) Repeat same procedure to other forms	
Exercise  Fill the forms	

BM 16: Contractors IPC and payment	3 h
Objective To ensure that the trainees know how the payment of the road contract is processed and how to submit and prepare the request for payment for the road works under the ERA project.	
Trainer's material  Training Manual Tender Process and Pricing for Rural Road Construction  Power point slide presentation  Flip chart	
Hand out  Power point slides on the payment process,  Payment certificates of interim, completion and final	
How is this topic conducted 1) Give the payment certificates to the trainees. Show the power point slides and explain the link of payment and construction works start from mobilization of works to end of defect liability period. 2) In each step of the payment process to show together payment certificate start from advance payment, deposit of bank guarantee, interim payment certificate. 3) Continue the same way until final payment certificates. 4) Together with the trainees fill an interim payment certificate 5) In the last session of the contract payment, shown the last slide of the link payment retention, how to recover the advance payment and how the retention amount be released. 6) Explain process of submission of payment.	
Exercise  Group the trainee in 5 consist of 5 each and mix directors and engineers. Give a blank form of IPC and break down payment form. Give sample of figure in the payment breakdown. Calculate payment due in the IPC  Each group explain the result. Show in projector of IPC of blank form and ask the trainees to put the result in a blank IPC	

Closing and Evaluation	1h
Objective Closing and wrap up of the tender process and price calculation and assessment of the training by the trainees for future improvement	
Trainer's material ✚ Training Manual Tender Process and Pricing for Rural Road Construction ✚ Power point slide presentation ✚ Flip chart ✚ Training assessment form	
Hand out ✚ Power point slides ✚ Training Assessment Form	
How is this topic conducted 1) All trainee to fill the form within insert their name. Give 15 minutes to fill in the form.	

References

Technical Manual for Labour-Based Road Construction Methods, Bjorn Johannessen, MRD-RIIP-IT Transport, Phnom Penh, July 1998.

Tender process and Pricing for rural road works. ILO-ERA 2013

Manage your road construction business, ILO-ERA 2014

ILO-Technical Manual for Small scaled contractors using LBAT Technology for rural road construction, Cambodia. ILO-CMB/97/M02/SID. 2002

Annexes:

Annex 1: CM. Power point slides for Tender process and Pricing for rural road work training

Annex 2: BM. Power point slides for Manage your road construction business training

Labour-based rural road work manuals for training provided by Don Bosco Training Center



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Training modules developed through the Enhancing Rural Access Project, with technical support from the ILO and funding from the European Union and the Government of New Zealand