MINISTRY OF COMMUNICATION, TRANSPORT, POST AND CONSTRUCTION

MAINSTREAMING APPROPRIATE LOCAL ROAD STANDARDS AND SPECIFICATIONS AND DEVELOPING A STRATEGY FOR THE MCTPC RESEARCH CAPACITY

PROGRESS REPORT 7
August 2007

SEACAP 03

UNPUBLISHED PROJECT REPORT

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Prepared for: Project Record: **SEACAP 03. Mainstreaming Appropriate Local Road Standards and Developing a Strategy for the MCTPC Research Capacity**

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ABBREVIATIONS & ACRONYMS

ADT	Average Daily Traffic
ASEAN	Association of South East Asian Nations
CBR	California Bearing Ratio
CNCTP	Cambodia National Community of Transport Practitioners
CSIR	Council for Scientific and Industrial Research (South Africa)
DBM	Dry Bound Macadam
DBST	Double Bituminous Surface Treatment
DCP	Dynamic Cone Penetrometer
DfID	Department for International Development
DoR	Department of Roads
EADT	Equivalent Average Daily Traffic
EDCs	Economically emerging and Developing Countries
ENS	Engineered Natural Surface
esa	equivalent standard axles
FHWA	Federal Highways Association (US)
FM	Fines Modulus
FWD	Falling Weight Deflectometer
GMSARN	Greater Mekong Sub-region Academic and Research Network
gTKP	global Transport Knowledge Partnership
HDM4	Highway Development and Management Model
HQ	Headquarters
HRD	Human Resource Development
IFG	International Focus Group
IFRTD	International Forum for Rural Transport Development
ILO	International Labour Organisation
IRI	International Roughness Index
Km	kilometre
LCS	Low Cost Surfacing
LRD	Local Roads Division (DoR)
LVRR	Low Volume Rural Road
m	metre(s)
MCTPC	Ministry of Communication, Transport, Post and Construction
mm	Millimetre(s)
MERLIN	**M**achine for **E**valuating **R**oughness using **L**ow-cost **IN**strumentation
MPa	Mega pascals
MoU	Memorandum of Understanding

NUOL	National University of Lao
OCTPC	Office of Communication Transport Posts and Construction (District Level)
ORN	Overseas Road Note
PAD	Personnel and Administration Division (MCTPC)
PCU	Passenger Car Unit
Pen Mac	Penetration Macadam
PIARC	World Road Association
PTD	Planning and Technical Division (DoR)
QA	Quality Assurance
Ref.	Reference
RRGAP	Rural Road Gravel Assessment Programme (Vietnam)
RRSR	Rural Road Surfacing Research (Vietnam)
RRST	Rural Road Surfacing Trials (Vietnam)
RT1	Rural Transport 1st Project, Vietnam
RT2	Rural Transport 2nd Project, Vietnam
RT3	Rural Transport 3rd Project, Vietnam
SBST	Single Bituminous Surface Treatment
SEACAP	South East Asia Community Access Programme
SIDA	Swedish International Developments Cooperation Agency
SOE	State Owned Enterprise
TRL	Transport Research Laboratory
UK	United Kingdom
UNOPS	United Nations Office for Project Services
VN	Vietnam
VOCs	Vehicle Operating Costs
VPD	Vehicles per day
WBM	Water Bound Macadam
WLC	Whole Life Costs

1 Introduction

1.1 General

The SEACAP 3 project is part of the wider South East Asia Community Access Programme whose strategic theme is 'livelihoods of poor and vulnerable people in South East Asia improved sustainability'. SEACAP 3 will contribute to this overall objective through the development and mainstreaming of local resource-based standards for low volume rural roads. The project seeks to achieve three key outcomes:

- Mainstream appropriate local road standards and specifications into the national road programme,
- Develop an affordable and sustainable strategy for attaining the necessary road (all road categories) research capacity,
- Increase the awareness of good practice experience from this project by disseminating the outcomes at the national, sub-regional and international levels.

This report outlines the work undertaken on the SEACAP 3 project during August 2007; presents a summary of staff resources used and outlines the anticipated programme for the coming month.

1.2 Contractual Arrangements

The Agreement for the project to be undertaken was established under a Memorandum of Understanding (MoU) between the Ministry of Communication, Transport, Post and Construction (MCTPC) on behalf of the Government of Lao PDR and the Department for International Development (DfID), UK. The MoU defines the scope of the project, that it will be undertaken by TRL Limited as the Consultant and implemented under Terms of Reference, and that the Consultant will be appointed by DfID. The MoU also expresses certain Exemptions and Facilities to be provided by MCTPC to the Consultant to facilitate implementation of the project. The MoU was signed on the 16th of October 2006.

Thereafter, TRL provided a comprehensive technical proposal and a financial proposal for carrying out the project to DfID and subsequently entered into a contractual arrangement with DfID. TRL were appointed on 21st of November 2006. The duration of the project is 12 calendar months.

TRL is supported in its undertaking of the project by associate firms and by competent and experienced individual consultants. The principal associate firm is Lao Transport Engineering Consultants (LTEC) who are providing comprehensive local consulting services.

TRL have entered into a contractual agreement with LTEC to provide a total of 68 person months of services over the duration of the project. Forty-Four (44) person months are for engineering and translation services and 24 person months are for administrative, secretarial and coordination services.

The other associate firm is Intech Associates consulting engineers who have worked extensively with TRL on other SEACAP projects in the region. Intech will provide a short-term specialist role on this project similar to that to be provided by the individual consultants.

2 Work Undertaken

2.1 General

The following sections summarise the work undertaken on SEACAP 3 during August 2007. Principal focus was on Task Group 1 and Task Group 4, although progress was also recorded on the other two Task Groups. The Progress on individual Modules within the Project Task Groups is summarised in Table 1. Project meetings are summarised in Table 2

Table 1 Summary of Module Progress

No.	Module Description	Completed	Programme	Activity in August 2007
Task Group I: Develop Standards and Specifications				
1	Review current situation	95%	100%	Minor updating of review
2	Research to fill knowledge gaps	95%	100%	Minor updating
3	Draft technical standards	60%	70%	Contents and principles agreed for output documents.
4	Finalise technical standards	0%	0%	No activity this month
Task Group II: Develop a Relevant Training Programme				
5	Training needs assessment	10%	0%	No major activity this months
6	Training programme elaborated	10%	0%	Programme detailed and agreement reached on coordination
7	Training course tested and trialled	0%	0%	No activity this month
Task Group III: Develop an Appropriate Research Capability:				
8	Gaps in research capacity identified	95%	100%	No activity this month
9	Strategy for strengthening research capacity	90%	100%	No activity this month
10	Adoption of strategy by MCTPC	40%	40%	Ongoing discussions with DoR and NUOL
Task Group IV: Initiate Dissemination				
11	Materials for Dissemination	25%	10%	Website principles identified and reports drafted

Table 2: Key Meetings, August

Date	Organisation	Key Personnel	Comment
01/08	Swe-Road	Dick Jonsson (Team Leader) Lars Goran Andersson (Supervision Advisor)	Post-workshop discussions and identification of areas of project cooperation.
01/08	LRD	Sengadarith Kattignasack (Director, LRD)	Post-workshop discussions and SPM discussions.
03/08	PAD MCTPC	Souvanny Ratanavong (DDG, Personnel Dept, MCTPC) Khamphou Duangthanome (Director, PAD)	Discussion on Training Modules and relationship with Training Master Plan.
03/08	MCTPC	Sengchane Cabinet of MCTPC	Discussion on MCTPC website and its future development.
08/08	Swe-Road	Dick Jonsson (Team Leader) Lars Goran Andersson (Supervision Advisor) Voitto Kuronen (Maintenance Management Advisor)	Exchange of information on maintenance and construction supervision issues.
13/08	LRD	Sengadarith Kattignasack (Director, LRD)	Discussion on SPM paper and related project progress.
15/08	LRD	Sengadarith Kattignasack (Director, LRD)	Discuss Rural Roads/SEACAP website issues and possible ways forward.
21/08	SEACAP	David Salter	General project progress.

2.2 Task Group 1: Standards and Specifications

Work was centred on the following activities:

1. Collation of available information on technical specifications for rural road pavement and surfacing construction. Outline draft pavement layer specifications were drawn-up for the initial list of 5 pavement options.

2. Investigating and collating information on specifications for roadside drainage.

3. Collation and review of available construction materials information. A working database of information was assembled and summary data analysed on material groups within the previously identified terrain units of Lao.

4. Final definition of key principles drafted that will govern the completion of the Task Group 1 Documents, based on the outcomes of the Review Workshop and its associated discussions. These are summarised in Table 3.

Table 3; Task Group 1 Document Completion

Document 1 Classification and Geometric Standards

1. There needs to be a link into the existing road classification in the Lao Road Design Manual (LRDM)
2. There will be a definition of the envelope of road covered by the SEACAP 3 LVRR project; probably an upper axle load limit of 4.5Tonne and an EADT of around 200.
3. The LVRR classification, geometric standards and technical specifications will be aimed at the all year basic access of small trucks and pick-ups.
4. The document will not deal with "tracks" and foot paths.
5. The document must clearly state that it is not declaring that all Rural Roads or Community Roads (CRs) must comply with a 4.5T limit – only that the LVRRs must do so. If such roads are deemed to require a higher axle load or higher traffic standard then logically they must be dealt with under other categories in the LRDM.
6. We need to show therefore the link into the next levels of the LRDM.
7. There will be two main classification subdivisions based on a 3.5m wide carriageway and a 2.5m wide carriageway, with selection being a function of the traffic type and volume.
8. The geometrics should be kept simple and based on the Module 1 review.
9. In line with the World Bank guidelines on mixed traffic safety there should be a design speed limit of 40km/hr and recommendations on options on wide shoulders for similar safety reasons.
10. There will be a section on general drainage principles.

Document 2: Technical Specifications

1. As regards pavements, this document will deal with materials and thickness design, but will include some drainage specifications and reference to structures manuals.
2. There should be a straightforward pavement selection process that must be easily useable at district engineer level.
3. There is an initial basic matrix of 5 main pavement options and 3 sub-grade strength criteria; although there should be an additional general consideration if there is considered to be a limited risk of occasional heavy trucks.
4. Depending on further data analysis the document will look at dividing natural materials into quality levels.
5. This document will include technical specification for the 5 main pavement options, using a format similar to existing Lao PDR specification documents.

Document 3: Commentary

1. This is a crucial document in terms of the explaining reasons behind the content of Documents 1 and 2 and guiding the district level user.
2. This document will also provide a project interface between the training and technical elements of the project.
3. The document will explain the simplified design process as a staged procedure or series of decisions from the initial decisions on whether the road project falls within the LVRR envelope through to decisions on pavement type and to final design selection.

2.3 Task Group 2: Training

Work was centred on the following activities:

1. Collation of existing training-related documents.

2. Discussions with key stakeholders as to expectations and issues relating to Task Group 2 outputs. Agreement was reached on means of coordinating the SEACAP 3 work with other proposed training programmes.

3. Preparation of a detailed work programme for the Training Specialist Mr Simon Done (TRL Ltd) as follows:

    - Assess the levels of road engineering capability (principally at district level) in relation to the application of SEACAP 3 outputs for basic access EOD, including Spot Improvement

    - Define skills gaps from above and draw up a list topics for training and discuss these with the MCTPC and DoR training administration

    - Draft a series of Training Modules – including hands-on procedures and present these as pilot study to a representative group (20)

    - Arrange and undertake a pilot training programme

    - Organise a suitable feedback and assessment programme to evaluate the effectiveness of the Draft Modules

    - Draft a short visit report summarising activities and outcomes

2.4 Task Group 4: Dissemination

Trevor Bradbury completed his review of dissemination aspects of the project with particular reference to the development and use of a project or rural roads related website and produced two reports:

1. SEACAP 3: Website Provision Recommendations

2. SEACAP 3: Website Specifications

These are currently completing a review phase and will be issued as Project Documents.

During his visit Trevor Bradbury worked closely with the local IT expert Mr Keithiphan Senamahmountry (LTEC), who will continue to develop the ideas put forward for a locally based website.

3 Staff Resources

A summary of the SEACAP 3 staff resources utilised in August 2007 is presented in the following Table 4.

Table 4: Staff Resources August 2007

Name	Position	Project Time : August 2007
Dr Jasper Cook (TRL)	Team Leader Geotechnical Specialist	1st- 24th August; 31st August
Michael O'Connell (TRL)	Transport and Road Engineering Specialist and Deputy Team Leader	31st August
Simon Done (TRL)	Training Specialist	No input this month
Trevor Bradbury (TRL)	Dissemination and IT Specialist	1st – 20th August
Bounta Meksavanh (LTEC)	Local Team Leader and Road Engineer Specialist	1st -31st August
Saysongkham Manodham (LTEC)	Road Engineering Specialist	1st -31st August
Somphit B (LTEC)	Training Support	1st -31st August
Mr. Keithiphan Senamahmountry (LTEC)	IT Support	1st -31st August
Mr. Bounhom K. (LTEC)	Translator	No input this month
Ms Chanthida Ph (LTEC)	Office Management	1st -31st August
Mr. Thipdavanh V. (LTEC)	Project Coordinator	1st -31st August

4 Programme and Status

The SEACAP 3 programme is included as Appendix A to this report, together with a manning schedule for the remaining months of the programme.

Table 1 indicates that the project is generally on target. The following points should be noted with respect to project work in the coming months

1. There is a clear definition of the pathway to project completion as regards Task Group 1 completion (Standards and Specifications).

2. Agreement has been reached on training coordination and detailed objectives have been drawn-up for the next 2 months work on Task Group 2 (Training Modules).

3. Investigations into the role of a website have clearly indicated the advantages of utilising a locally based website for project information dissemination and feedback within the proposed decentralisation of the rural roads administration.

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APPENDIX A

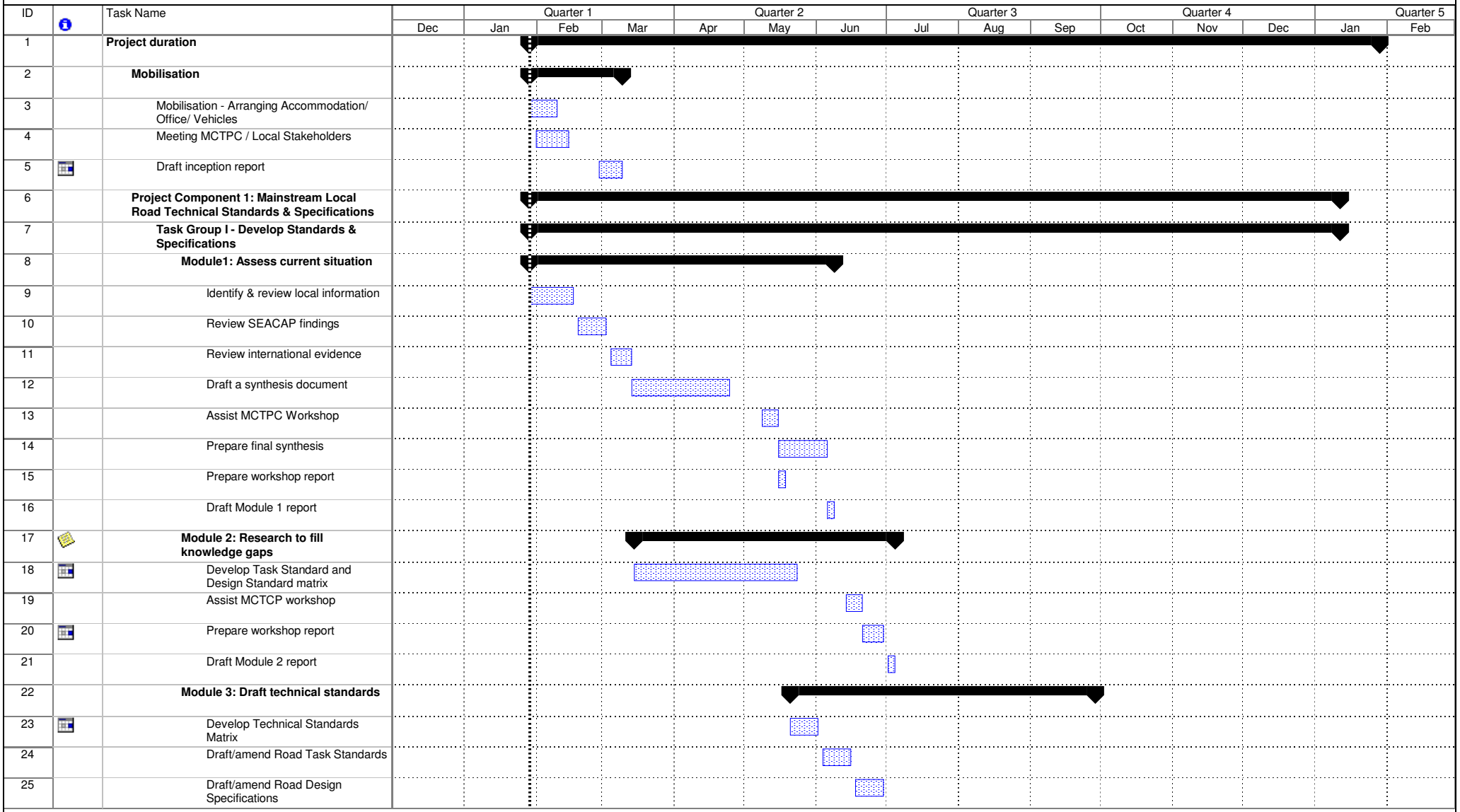
Project Programme

Schedule of Staff Inputs

		Project Months				
		Sep	Oct	Nov	Dec	Jan
J Cook	Team Leader					
M O'Connell	Deputy Team Leader					
S Done	Training Specialist					
R C Petts	Quality Review					
A Beusch	Training Specialist					
Akram Ahmedi	Research Capacity					
Bounta Meksavanh	Local Team Leader					
Saysongkham Manodham	Road Engineer					
Somphit B	Training					
Keithiphan S	IT Engineer					
Bounhom K.	Translation					
Chanthida Ph	Office Manager					
Thipdavanh V.	Project Coordinator					

SEACAP - 3

Mainstreaming appropriate local road standards and specifications & developing strategy for MCTPC research capacity

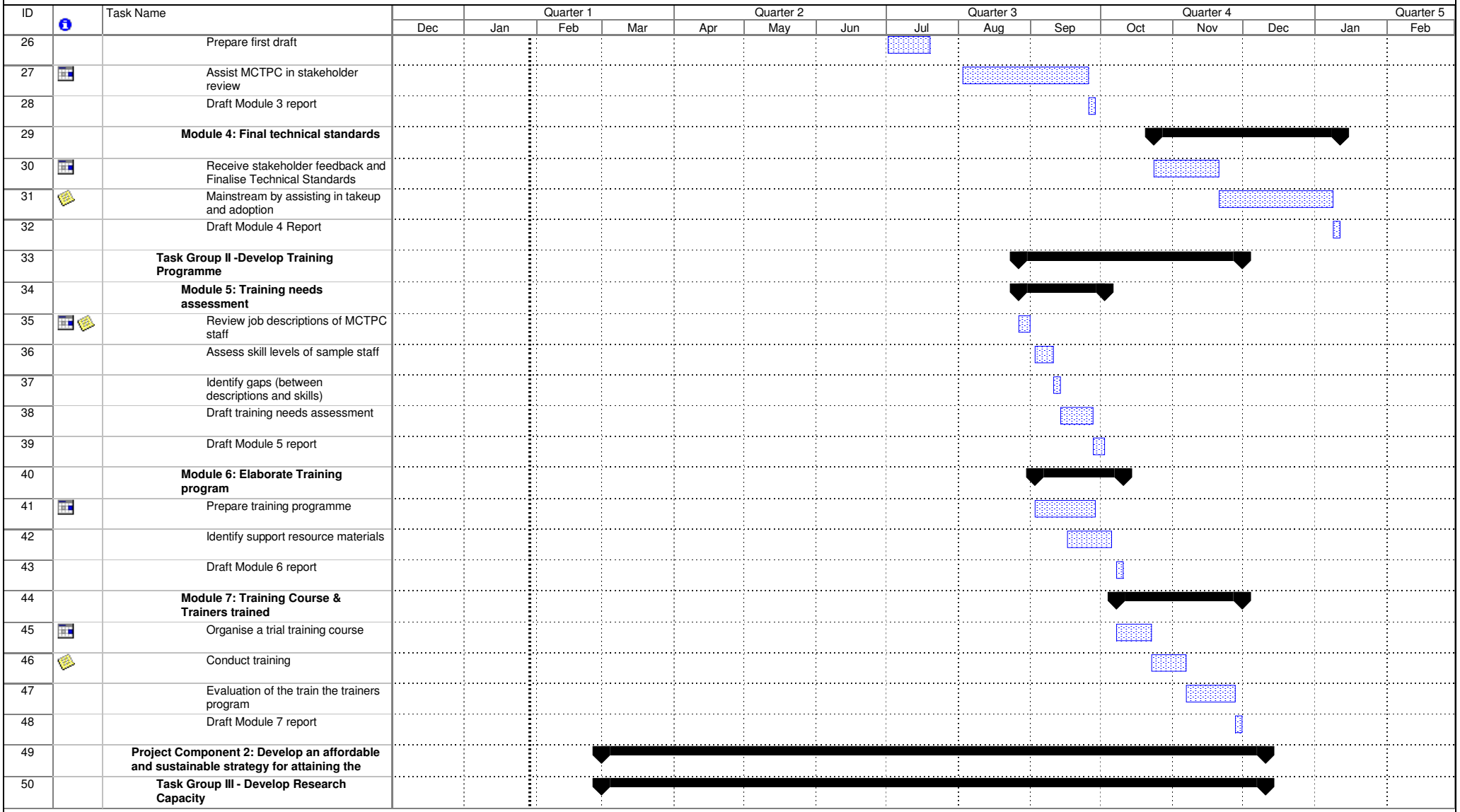


Project: SEACAP 03 - Lao PDR

Task	Summary	Rolled Up Progress	Project Summary
Progress	Rolled Up Task	Split	Group By Summary
Milestone	Rolled Up Milestone	External Tasks	

SEACAP - 3

Mainstreaming appropriate local road standards and specifications & developing strategy for MCTPC research capacity

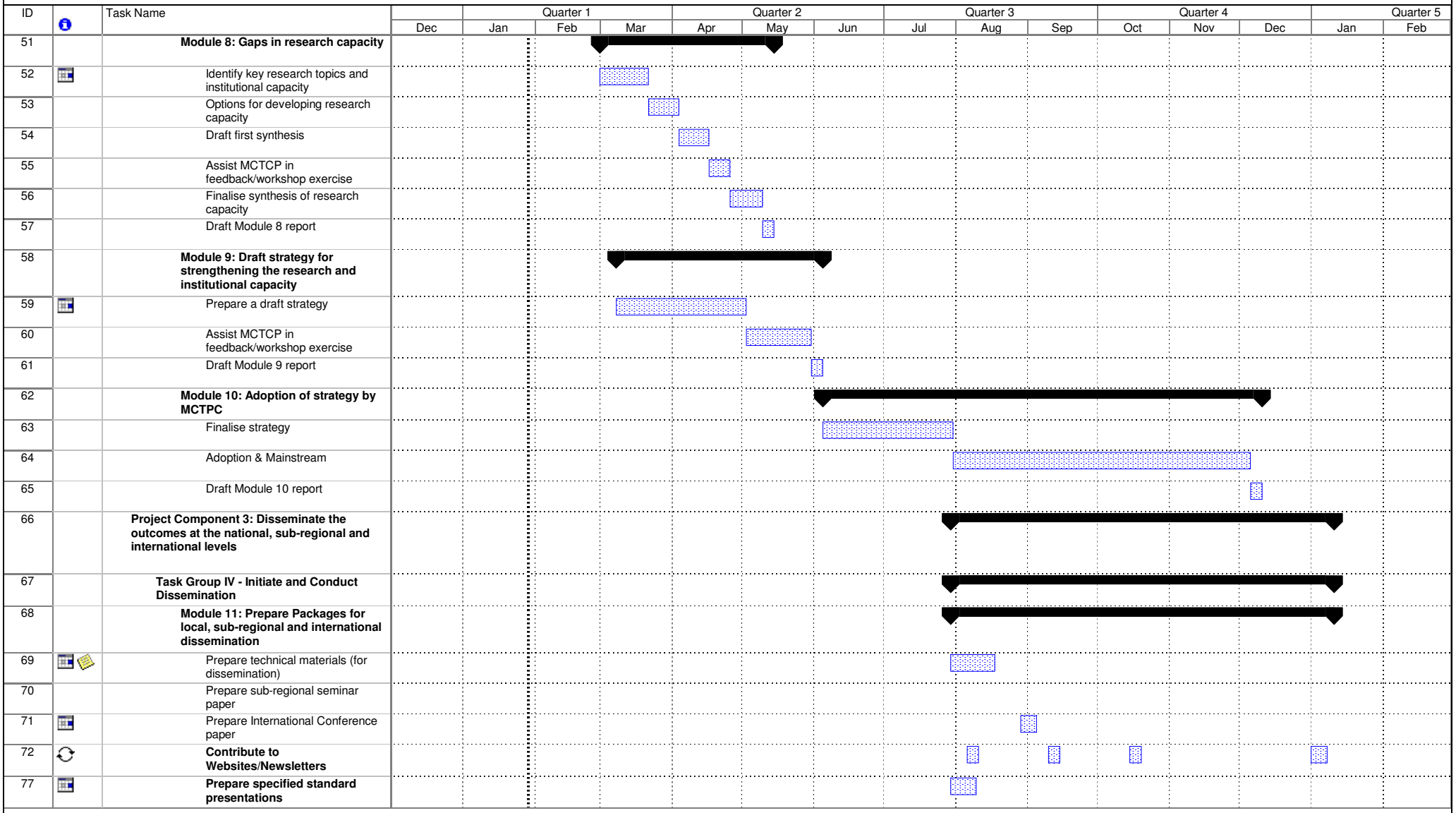


Project: SEACAP 03 - Lao PDR

Task		Summary		Rolled Up Progress		Project Summary	
Progress		Rolled Up Task		Split		Group By Summary	
Milestone		Rolled Up Milestone		External Tasks			

SEACAP - 3

Mainstreaming appropriate local road standards and specifications & developing strategy for MCTPC research capacity



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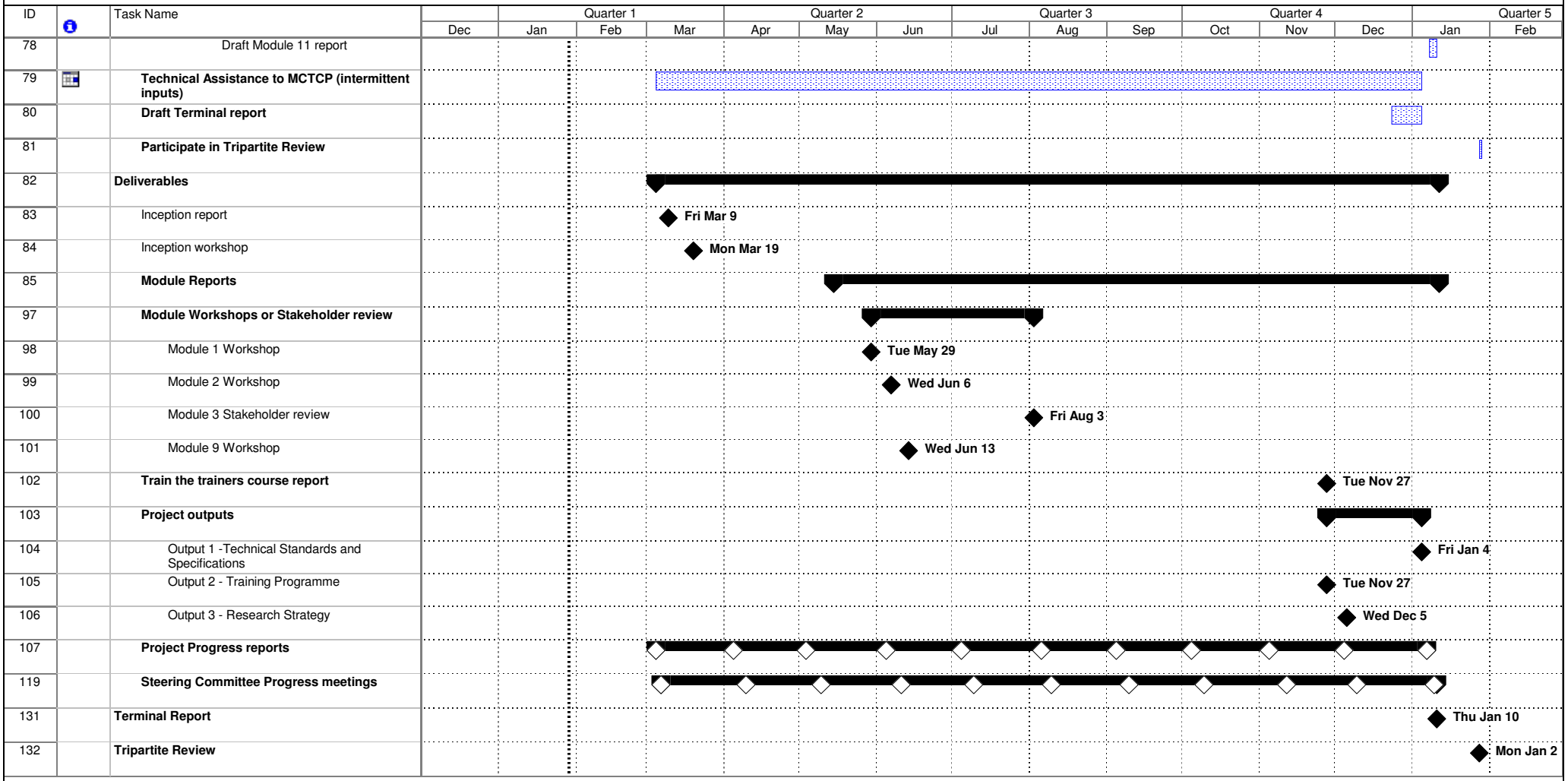
SEACAP - 3

Mainstreaming appropriate local road standards and specifications & developing strategy for MCTPC research capacity



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