SEACAP 019
Development of Local Resource Based Standards in Cambodia

TRL Ltd
In Association with
KACE and Intech Associates
SEACAP19 Components

Applied Research
- Task 1: BRC Pavement
- Task 2: Engineered Natural Pavements

Studies
- Task 8: Small Structures Manual
- Task 9: Unit Rate Costing System

Project Document Development
- Task 3: Lime Stabilisation
- Task 4: WBM and other Pavement Options
- Task 5: Pavement Upgrading
- Task 6: Embankment Protection
- Task 7: Materials Database

Task 8: Small Structures Manual

Task 9: Unit Rate Costing System

Task 1: BRC Pavement

Task 2: Engineered Natural Pavements

Task 3: Lime Stabilisation

Task 4: WBM and other Pavement Options

Task 5: Pavement Upgrading

Task 6: Embankment Protection

Task 7: Materials Database
SC19 Outcomes
Applied Research: Task 1 & 2

- Task 1: “Technical Paper No 1 - Bamboo Reinforced Concrete Pavements”

- Task 2:
  - “Technical Paper No 2.2 – “Experimental Evidence in Cambodia”
  - ENS Database “94 ENS sites in four provinces”
  - Tool for ENS Database management with link to GIS
SC19 Outcomes
Project Document Development Task 3 to 7:

Provide a sound basis for further research and indicate the way forward.

- Technical paper No. 3: LIME STABILIZATION TECHNIQUE
- Technical paper No. 4: RURAL ROAD PAVEMENT OPTIONS
- Technical paper No. 5: RURAL ROAD UPGRAADING
- Technical paper No. 6: STUDY OF ROAD EMBANKMENT EROSION AND PROTECTION
- Technical paper No. 7: PILOT ROAD MATERIALS DATABASE
SC19 Outcomes
Studies: Task 8 & 9

- Technical paper No.8: Low Cost Structure Manual
- Technical paper No. 9: Unit Rate Costing System
ROYAL GOVERNMENT OF CAMBODIA

SOUTH EAST ASIA COMMUNITY ACCESS PROGRAMME

DEVELOPMENT OF LOCAL RESOURCE BASED STANDARDS

SEACAP 19: Technical Paper No. 1
Bamboo Reinforced Concrete Pavements

February 2008
UNPUBLISHED PROJECT REPORT

SEACAP 19
Technical Paper No. 2.2
Behaviour of Engineered Natural Surfaced Roads: Experimental Evidence in Cambodia

August 2008
UNPUBLISHED PROJECT REPORT
ROYAL GOVERNMENT OF CAMBODIA

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DEVELOPMENT OF LOCAL RESOURCE BASED STANDARDS

SEACAP 19

Technical Paper No. 6

STUDY OF ROAD EMBANKMENT EROSION AND PROTECTION

May 2008

UNPUBLISHED PROJECT REPORT

Pilot Road Materials Database

August 2008

UNPUBLISHED PROJECT REPORT
SC19 Impact

- **Technical Paper No 1 (BRCP)** concluded that bamboo reinforcement is of no significant benefit in the construction of LVRRs made with concrete.
  - Key Rural Road practitioners were consulted and agreed on the finding of this paper. Some of them are taking action to stop promoting the use of thus BRCP technique.

- **Task 2 - ENS:**
  - Provides support to rural road engineers for the wider cost effective application of ENS instead of Gravel Surfaced Road.

  Further support in dissemination and training is essential.
SC19 Impact

- **Task 8 – Low Cost Structure Manual Review**
  Recommendations of this task was taken-up and the draft version of this Manual is now being reviewed to produce a Final version of the Low Cost Structures Manual.

- **Task 3 to 7 and 9: Development of Project Documents**
  Provide a sound basis for further research and indicate the way forward.
Key Follow-Up Work

- SC19 Final Workshop planned for December 2008
- Follow up on recommendations of Task 3 to Task 9
- Regionally disseminate: TP1, TP2.1
- Adapt and regionally disseminate: LCSM
- Monitor ENS Sites and past trials and projects.
- Dissemination via University Course Modules
- Standards and Specifications (as per SEACAP3)
- Integrate RRSR Knowledge with other Donor programmes (ADB etc)
Thank You