

IENE Transport Ecology Workshop in Myanmar

Naipyidaw,

18-22 November 2019

With the cooperation of Ministry of Construction of Myanmar

IMPLEMENTATION REPORT



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1. THE AIM AND THE FRAMEWORK OF THE WORKSHOP

The general aim of the workshop was to introduce the necessity of transport ecology for the development of environmentally friendly transportation system investing on the biodiversity conservation as the vital natural capital of Myanmar. The workshop organized in cooperation with the Ministry of Construction of Myanmar hosted in its headquarters in Naypyidaw on 18-22 November 2019.



Concrete framework of targets of the workshop were:

1. To facilitate the participants in road ecology knowledge for use in their daily work;
2. To realize and to able the use of each other's knowledge (civil engineering, ecology, decision making, ...) necessary in the development of transport facilities;
3. To encourage cooperation between and inside organizations. Representatives of several disciplines need intensive cooperation during all phases of developing transport in environmentally sustainable way as decision makers, engineers, planners, economists, ecologists, social scientists, constructors and operators;
4. To implement by contracting road ecology issues as part of the whole contract; from scoping, planning, design to construction and operation;
5. To encourage the link with the international road ecology network.

Special focus was concentrated on:

- ✓ The importance of a holistic approach considering all the impacts. Securing ecological connectivity is a major issue on Transport Ecology. This beside pollution and other impacts (noise nuisance, soil, water and air quality, social impacts and secondary impacts) have a tremendous impact at wildlife.
- ✓ Attending on and avoiding negative impacts during the whole project from initiating, planning design, construction and use of roads and railways.
- ✓ Underlining all the possibilities on finding solutions proactively during the transport development process and the relations to all kind of issues.
- ✓ Design of mitigating measures as ecoducts; focusing at the relation between species and type of measure. This includes also the adaptation of civil works as bridges and culverts for per example water management for a joint use by wildlife.
- ✓ Adopting a framework of fundamental principles in relation to development sustainable linear infrastructure in trilateral approach: social, economic and ecological.
- ✓ What each participant can do in his/her work with the given information.



The audience in the workshop was a target group of more than 38 very interested persons. Representatives of the staff of the Ministry of Construction from the separate departments and divisions working for several Myanmar States as:

1. Department of Highways:

- Division of Road Design
 - Division of Environmental, Social, Road Safety
 - Division of 13 States and Regions
2. Department of Bridges:
 - Division of Research and Development
 3. Forest department:
 - Division of Nature and Wildlife Conservation
 - Division of Watershed Management
 4. Environmental Conservation Department:
 - EIA Division

Additionally the workshop was attended by representatives of:

1. Ministry of Transportation and Communication /Myanmar Railways/Civil Engineering
2. Yangon Technological University/School of Civil Engineering

An important approach of the workshop was to encourage and support the active participation of the audience. This interactive way of working helped the overall training process a lot. All kind of experiences and examples in the audience and by the trainers were triggered to become part of the discussion.



2. THE AGENDA OF THE WORKSHOP

The workshop implemented in a schedule of five days presented in the following table. It includes a day of a field trip on Pinlaung road. Each day had a thematic field as following:

1st Day: Introduction to Transport Ecology and future challenges on local acting

2nd Day: Towards finding processes and solutions

3rd Day: Working on Case Studies

4th Day: Adapting solutions at infrastructural linear lines in relation to landscapes and habitats in the field.

5th Day: Detailed solutions, supporting global thinking and conclusions.





Agenda of the IENE Workshop on Transport Ecology in Myanmar Naypyidaw, 18-22 November 2019		
Time	Topic	Presenter
Day 1		
09:00 - 09:15	Registration	
9:30 - 10:00	Opening remarks	Ministry of Construction DG, Department of Bridges: Shwe Lay and Deputy DG, Department of Highways: Kyi Zaw Myint WWF: Kate Newman IENTE: Hans Bekker
10:00 - 10:15	Logistics; Overview of training, objectives, field trip, parking lot for questions	Sai Than Lwin
10:15 - 10:30	Break	
10:30 - 10:45	IENTE presentation	Lazaros Georgiadis
10:45 - 11:30	Getting to know the participants and questionnaire to better understand their interests	Elke Hahn Hans Bekker
11:30 - 12:30	What is transport ecology?	Hans Bekker Elke Hahn
12:30-13:30	Lunch	
13:00 - 14:00	Transportation and Biodiversity: From Global thinking to local acting	Lazaros Georgiadis
14:00 - 15:00	Addressing questions in parking lot Summary of day 1	Elke Hahn
Day 2		
09.30 - 09.45	Reflection and announcement case study Myanmar	Sai Than Lwin Hanna Helsingen
09:45 - 10:30	Solutions for addressing environmental impacts – avoidance, mitigation, restoration and offset	Elke Hahn
10.30 - 11.00	Area oriented. Taking into account different land use in transport planning: farmland, biodiversity areas, settlements etc.	Hans Bekker
11.00 - 11.15	Break	
11:15 - 12:00	Transport ecology in all stages of infrastructure development: inception, planning, impact assessment, alignment, design, construction; operation and use/maintenance	Elke Hahn
12.00 - 12.30	From target species to ecosystem approach	Lazaros Georgiadis
12:30 - 13:30	Lunch	
13:30 - 14:30	Stakeholders: Working with colleagues in the same or other ministry	Lazaros Georgiadis
14:30 - 15:00	Summary of day 2 and addressing questions in parking lot	Elke Hahn



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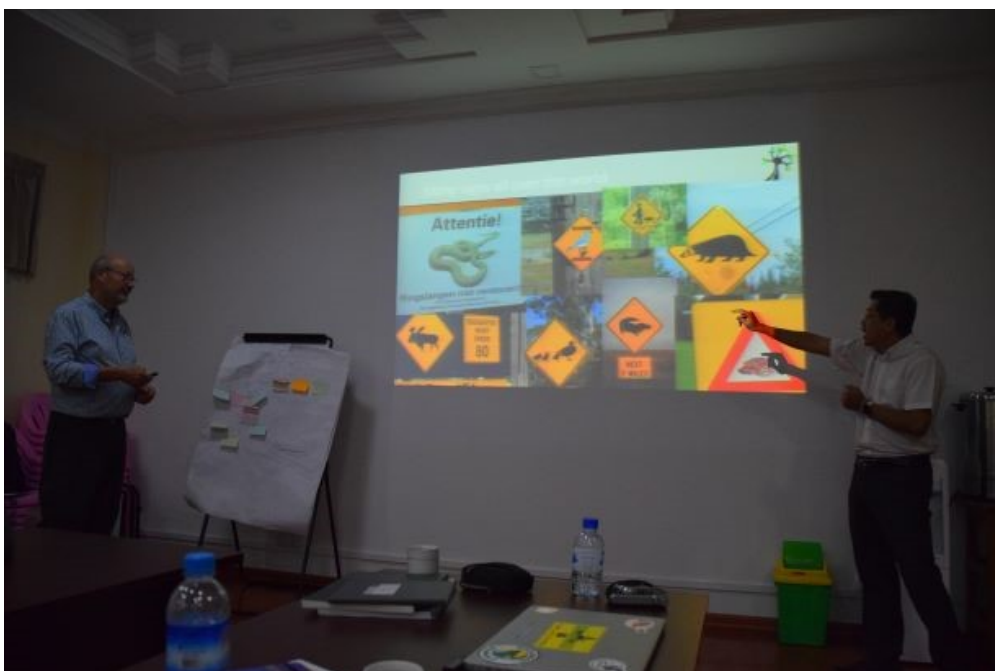
Day 3		
09:30 - 10:30	Addressing fragmentation: Available solutions of fauna passages	Hans Bekker
10:30 - 12:00	Case studies: 1. Bear and Egnatia Highway, Greece 2. 40 badger tunnels, Netherlands	Lazaros Georgiadis Hans Bekker
12.00 - 13.00	Lunch	
13:00 - 14:30	Case studies from Myanmar: A case of Railway Working together on addressing crossing sector cooperation	Group work
14.30 - 15.00	Summary of day 3 and addressing questions in parking lot	Elke Hahn
Day 4		
09:00 - 16:00	Field visit to Pinlaung road (detailed program to follow) The route of the trip included an initial first part passing the main valley of the area with its river and a parallel a main national road and final part in ta local regional road in a mountain terrain.	Sai Than Lwin Hans Bekker Lazaros Georgiadis Elke Hahn
Day 5		
09:30 - 11:30	Designing solutions: a. Small fauna tunnel b. Ecoduct c. Large tunnel / road on poles d. Multi-purpose use of civil works e. Canopy bridge f. Fencing g. Warning signs and deterrents How much light we want at the end of the tunnel: The Openness Index	Hans Bekker Lazaros Georgiadis Elke Hahn
11:30 - 12:00	Maintenance, Inspection and monitoring	Elke Hahn
12:00 - 12:30	Just financing or investing on Sustainable Transport? Solutions on contracting and tendering	Lazaros Georgiadis
12:30 - 13:30	Lunch	
13:30 - 14:00	From local acting to Global thinking	Lazaros Georgiadis
14:00 - 14:30	Summary of day 5 Addressing questions in parking lot Training evaluation	Elke Hahn
14:30 - 15:00	Closing remarks Certificates	DG, Department of Highways, MOC WWF; IENE

3. QUESTIONS AND ISSUES RAISED FROM THE PARTICIPANTS

Supporting the interactive development of a productive dialogue, during the workshop participants encouraged raising several questions and topics according their interest and importance. That has been discussed and analyzed with the trainers in the parking lot of each day. The issues and topics that discussed are the following:

Day 1:

- ✓ Deforestation
- ✓ Carcasses / Accidents --> traffic safety / driving factor
- ✓ Fragmentation / in-breeding
- ✓ Hunting / Poaching
- ✓ Conflict with ethnic groups – social impact --> solve locally
- ✓ Elephant – human conflicts --> impact at villages and food
- ✓ Low law enforcement
- ✓ Data collection and storage
- ✓ Lack of data and lack of data sources
- ✓ Measures for monkeys --> tree bridges
- ✓ Corridors for every species separately? --> ecosystem approach
- ✓ Noise sensitivity of animals?
- ✓ Will animals use crossing structures? --> species behavior; monitoring
- ✓ IUCN Red list



Day 2:

- ✓ Corridors: how do animals know where to go? --> guidance in landscape
- ✓ Bridges construction, cutting trees --> what mitigation for aquatic species?
- ✓ Environmental impact of small bridges? --> ongoing embankments
- ✓ Viaduct, Infrastructure on poles too expensive; are there cheaper solutions?
- ✓ MM has not enough bridges and overhead constructions for people, unlikely that they will come for animals.
- ✓ Which species are included in vulnerable habitat?
- ✓ Procedures of transport ecology in Europe
- ✓ More information about flora, not only fauna!

**Day 3:**

In the session of development of case studies a special presentation on engagement of different stakeholders on the same or different ministry took place. An alive laboratory of four working groups formed by the participants based on different origin of their departments. As a result each working group consisted of members of different departments working on defining stakeholders that need to work together towards sustainable development of a hypothetical major transport project in 5 levels:

Level A: Policy and decision making

Level B: National Transport Programme Planning (SEA)

Level C: Transport Projects Design (EIA)

Level D: Transport Projects Construction

Level D: Operation – Maintenance

The results of the four “multi-disciplinary” working groups are presented in the following table:

Levels	Group I	Group II	Group III	Group IV
A	<ul style="list-style-type: none"> ✓ Parliament ✓ Government: <ul style="list-style-type: none"> • Union • State • Regional 	<ul style="list-style-type: none"> ✓ MoNREC¹ ✓ MoC² ✓ MR³ 	<ul style="list-style-type: none"> ✓ MoNREC ✓ MoC ✓ MoTC⁴ ✓ Public 	<ul style="list-style-type: none"> ✓ Parliament ✓ High level from the Ministry
B	<ul style="list-style-type: none"> ✓ MoC ✓ MoTC ✓ MoNREC ✓ Universities 	<ul style="list-style-type: none"> ✓ MoC ✓ MoTC ✓ ECD⁵ 	<ul style="list-style-type: none"> ✓ MoC ✓ MoTC 	<ul style="list-style-type: none"> ✓ Stakeholders ✓ Project manager ✓ MP
C	<ul style="list-style-type: none"> ✓ Proponent/Developer ✓ Consultant ✓ Local community ✓ MoNREC ✓ ECD 	<ul style="list-style-type: none"> ✓ ECD ✓ MoC ✓ Third party 	<ul style="list-style-type: none"> ✓ MoNREC ✓ MoC ✓ MoTC ✓ EIA 	<ul style="list-style-type: none"> ✓ Ecologists ✓ Technicians ✓ Agreements concerning ministry ✓ ECD/Project affected persons
D	<ul style="list-style-type: none"> ✓ Reg. Proponent ✓ Constructor: <ul style="list-style-type: none"> • Public • Private ✓ Experts (Ecologists, engineers, etc.) 	<ul style="list-style-type: none"> ✓ Constructor ✓ PMLI 	<ul style="list-style-type: none"> ✓ MoC ✓ MoTC ✓ MoNREC 	<ul style="list-style-type: none"> ✓ MoC
E	<ul style="list-style-type: none"> ✓ MoC ✓ Private Companies ✓ Local communities) 	<ul style="list-style-type: none"> ✓ Regional Government 	<ul style="list-style-type: none"> ✓ MoC ✓ MoTC 	<ul style="list-style-type: none"> ✓ Concerning ministry

¹ Ministry of Ministry of Natural Resources and Environmental Conservation (MoNREC)

² Ministry of Construction (MoC)

³ Myanmar Railways (MR)

⁴ Ministry of Transportation and Communication (MoTC)

⁵ Environmental Conservation Department, MoNREC

4. CONCLUSIONS

After the overall implementation of the Workshop the first practical aim on development of a real effective dialogue between trainers and trainees achieved in a maximum level. On the other hand, questions and discussions raised by the participants which represented several regions and states, different divisions and departments of the Ministries of Construction and Transport and Communication, but also the Yangon Technological University. Raising actively so many valuable issues and topics, show that the interest and importance of developing transport in Myanmar in the best environmentally sustainable way is in high level. The same conclusion is extracted from the presence and the personal interest of Director General of Department of Bridges Mr Shwe lay and Deputy Director General of Department of Highways Mr Kyi Zaw Myint of the Department of Highways of the Ministry of Construction. Receiving this positive reaction from both organizers, from the side of WWF-Myanmar and the Ministry of Construction, we hope that the IENE 2019 Workshop on Transport Ecology will be a starting point for the development of transport networks in national level in the best sustainable way. Enforcing the Principles of Transport Ecology in practice to find the best solutions in supporting ecological connectivity and avoiding or mitigating the impacts of landscape and ecosystem fragmentation in Myanmar looks to be a great challenge and necessity for a country with so rich natural heritage. From the side of IENE, we will be available to contribute in such a national goal in the best effective way.

Finally we would like to acknowledge WWF-Myanmar for the second invitation to come to Myanmar after 2015 and to develop such a fruitful international cooperation.

