THE SOCIALIST REPUBLIC OF VIETNAM
MINISTRY OF TRANSPORT
DIRECTORATE FOR ROADS OF VIETNAM

THE SOCIALIST REPUBLIC OF VIETNAM PROJECT FOR CAPACITY ENHANCEMENT IN ROAD MAINTENANCE

FINAL REPORT APPENDIX

April 2014

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APPENDIX - A1: TECHNICAL TRAININGS ON ROAD INFORMATION MANAGEMENT

A1.1 THE FIRST TECHNICAL TRAINING

(1) General

The first technical training of Activity -1 (i.e. Enhancement of Road Information Management) was conducted on 6th June, 2013 in DRVN headquarters. Training courses were designed based on the agreed training plan between JICA Project Team and DRVN. Since most of the trainees attended road database related activities first time, training courses were designed by covering wide range of information varying from some general information of road database to purely technical issues.

PMU officials, counterpart members of Working Group-1 and Working-5 and JICA Project Team members were actively involved in preparation and implementation of the first technical training of Activity -1.

(2) Objective

The objective of the first technical training was to make familiar with;

- Overall Road Database System

- Road Database System Algorithm

- Road Database Structure

- Data Input Format

- Database Operation and Management (Data Input, Validation Check, Data Storage, etc.)

- Utilization of User Manual

(3) Participants (Trainees) of the Training

DRVN was requested to select trainees from the organizations who will be the responsible for operation and management of road database from central level to local level, conducting training related to road database in the future and the potential organization who will be assigned for technical support and database system upgrading or expansion in the future. The targeted organizations are DRVN, RRMU-2, RRMU-2 Field Offices, RTC-Central and RTC-2. It was requested to DRVN and PMU to select the trainees who can attend all three consecutive trainings because contents in each training course is different and it is highly recommended to attend all three trainings to be familiar with the road database system.

A total of twenty-five (25) trainees were attended the first technical training. The list of trainees with their details is shown in **Table A1.1**.

Table A1.1 List of Trainees (The First Technical Training)

SN	Name	Organization	Departmnet	Position
1	Dang Cong Chien	DRVN	Information Center	Director
2	Tran Quoc Toan	DRVN	Road Management and Maintenance Department	Specialist
3	Ha Viet Tung	DRVN	Information Center	Specialist
4	Nguyen Hai Vinh	DRVN	Personnel and Organization Department	Specialist
5	Nguyen Khanh Toan	DRVN	Infrastructure and Road Safety Department	Specialist
6	Nguyen Viet Tuan	DRVN	Science, Technology, Environment and IC Department	Specialist
7	Luong Van Minh	DRVN	Road Management and Maintenance Department	Specialist
8	Quach Van Khoa	DRVN	Infrastructure and Road Safety Department	Director
9	Tran Duy	DRVN	Road Magazine	
10	Trinh Xuan Sinh	DRVN	Planning and Investment Department	Specialist
11	Nguyen Dinh Phuc	RRMU - 2	Field Office 2.7	
12	Dang Dinh Quang	RRMU - 2	Field Office 2.5	
13	Pham Duc Hung	RRMU - 2	Cost Apprisal Division	Staff
14	Nguyen Quang Hung	RRMU - 2	Field Office 2.3	Staff
15	Tu Minh Phuong	RRMU - 2	Field Office 2.6	Staff
16	Duong Dinh Hung	RRMU - 2	Traffic Management Division	Staff
17	Pham My Hanhj	RRMU - 2		Staff
18	Le Khac Anh	RTC - Central		Director
19	Hoang Anh Tuan	RTC - Central		Specialist
20	Luong Xuan Ngoc	RTC - Central		Specialist
21	Nguyen Van Thom	RTC - Central	Appraisal Department	
22	Nguyen Thanh Sang	RTC - 2	Design Division	Specialist
23	Nguyen Van Huy	RTC - 2	Design Division	Staff
24	Tran My Ha	RTC - 2	Design Division	Staff
25	Nguyen Quang Huy	RTC - 2	Design Division	Staff

(4)   Training Program

The training program of the first technical training was divided into three sessions, namely Session - I, Session - II and Session - III. Session - I covered the overall database system including introduction of overseas practice (i.e. MLIT, Japan Practice). Session - II was specifically designed for explaining road database system designed under the Project. Session - III was designed to provide opportunity to trainees to gain experiences practically by operating the real / actual database system developed under the Project. Database system was installed on

computers and provided to trainees to practice on it. The detailed training program is shown **Table A1.2.**

Table A1.2 Training Program (The First Technical Training)

The Project for Capacity Enhancement in Road Maintenance in Vietnam		
The First Technical Training on Road Database System		
Date:	6th June, 2013	
Venue:	Seminar Room (206), Directorate for Road of Vietnam, Hanoi	
Training Program		
Time	**Contents**	**Trainer**
Registration and Opening		
9:15 – 9:30	Registration	
9:30 – 9:40	Opening Remarks	WG-1 TL , DRVN
	Self-Introduction	All participants
9:40 – 9:45	Explanation of the Outline of the Training Program	Dr. B. R. Pantha
Session -I: Introduction of Road Database System		
9:45 – 10:45	Overview of Road Database System	Dr. B.R. Pantha & Mr. P. V. Doan
	Road Database Structure	
	Database System Algorithm	
	Database System Configuration	
	Data Items	
	Data Input Format	
10:45 – 11:00	Break	
Session -II: Road Database System Functions and Operation & Management		
11:00 – 12:15	Database System Functions	Dr. B. R Pantha & Mr. P. V. Doan
	Data Input	
	Data Validation Check	
	Data Storage	
	Utilization of Road Database User Manual	
12:15 – 13:30	Lunch Break	
Session -III: Practicing on Database Operation and Management		
Trainee will be divided into 5 groups and data input practices will be conducted in turn.		
13:30 – 14:00	Orientation on data inputting of	Dr. B. R. Pantha & Mr. P. V.

(5)   Materials and Methods of the Training

a. Training Materials

Since some of the trainees have attended the Project related activities first time particularly Activity -1, training materials were prepared covering various aspects of road database system. Therefore, the training materials contain from very general to very specific information related to road database system. Also, the first training was conducted only one day however it may need a little bit long time to understand the whole database system. Therefore, training materials were prepared in detailed and provided to all trainees considering that they can refer to the training materials in the future whenever necessary. The following training materials were used in the training;

- Road database system (software)
- Hand-outs prepared specifically for the first technical training
- A quick guide for new data input
- Road database user manual
- Sample data for data input practicing

b. Training Method

In the morning sessions (i.e. Session -I and Session - II), trainees were taught by classroom type of lecture / presentation delivered by JICA Project Team. After the presentation, questions and answers session was also conducted.

Similarly, in the afternoon session, an opportunity was provided to all trainees to practice data inputting task in the newly developed road database system. Trainees were divided into five (5) groups and requested to practice in turn because only five (5) computers were provided for practicing.

Pre-training evaluation was conducted at the beginning. Post-training evaluation was conducted at the end of the training to evaluate the effectiveness of the training.

| Classroom Type Lecture | Practicing Data Input in Computer |
| (Morning Sessions) | (Afternoon Session) |

Figure A1.1 Training Methods (Lecture and Computer Practice)

(6)   Outcomes of the Training

The outcomes of the first technical training were evaluated by conducting post-training evaluation survey. The results of post-training evaluation survey are summarized **in Figure A1.2, Figure A1.3**, and **Figure A1.4**.

Q.1.1 Training Program as a Whole	Q.1.2 Expectation Achievement
Q.1.3 Contents Offered	Q.1.3 Duration of Sessions Offered
Q.1.5 Training Method	Q.2.1 Session 1: Introduction of Road Database System
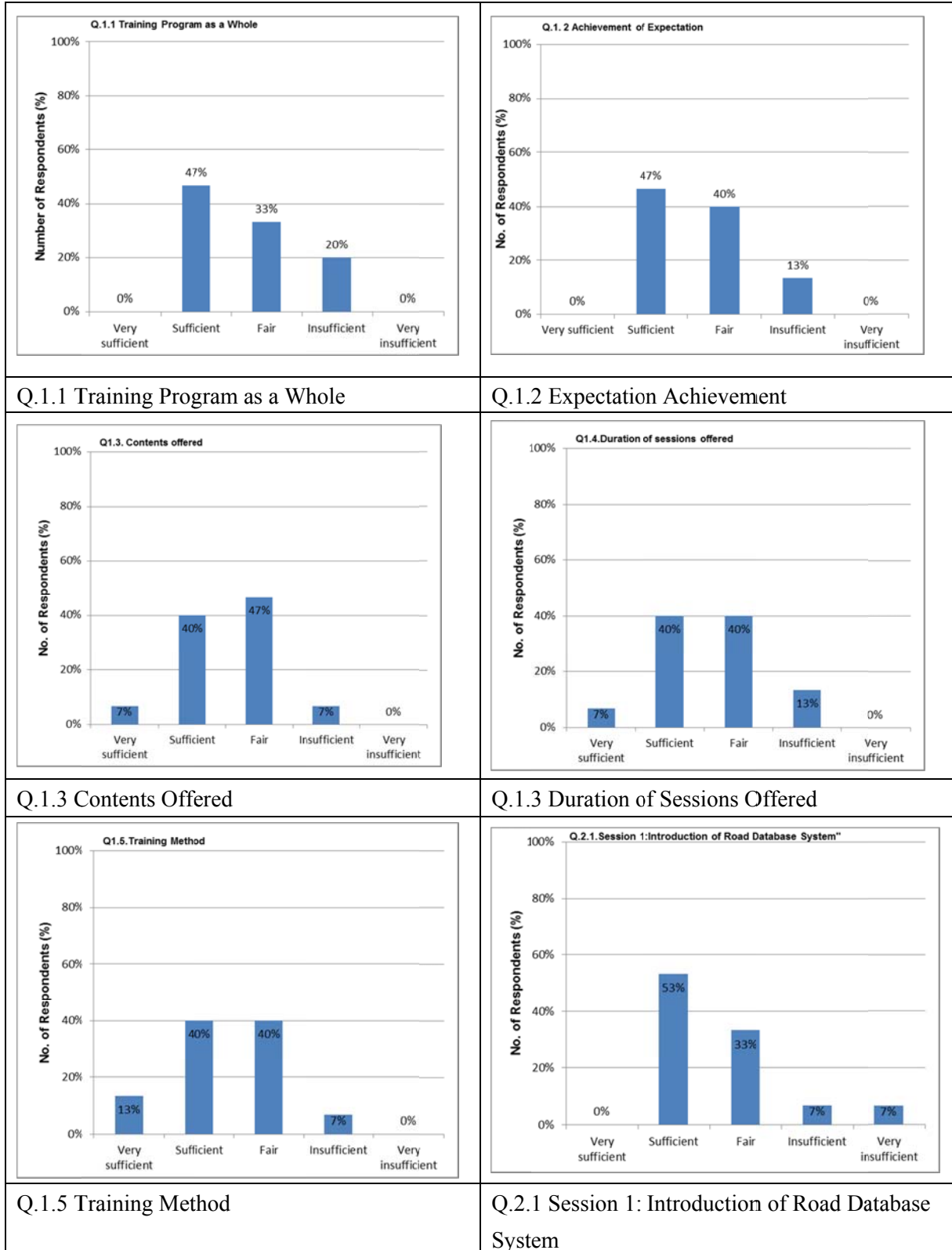
Figure A1.2 Results of Post Training Evaluation (1/3)

Q.2.2 Database Function, Operation and Management	Q.2.3 Practicing on Database Operation & Management
Q.3.1 Knowledge on Road Database System	Q.3.2 Knowledge on Operation & Management of System
Q.3.3 Skills on Operation System	Q.3.4. Overall Capacity Reinforced through Training
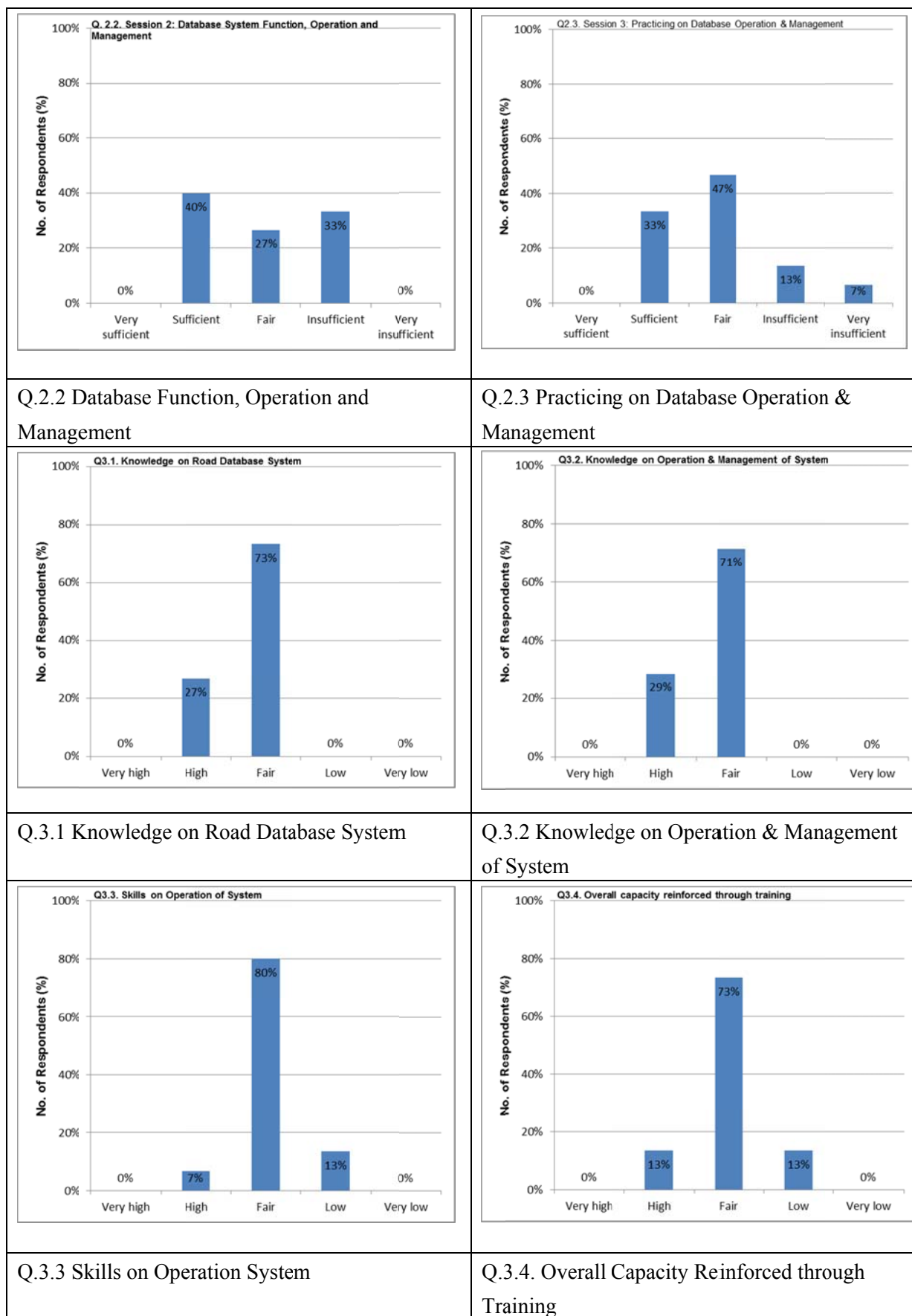
Figure A1.3 Results of Post-Training Evaluation (2/3)

| Q.3.5 Applicability to Tasks Assigned | Q.4.1 Follow Up Activity after Training |
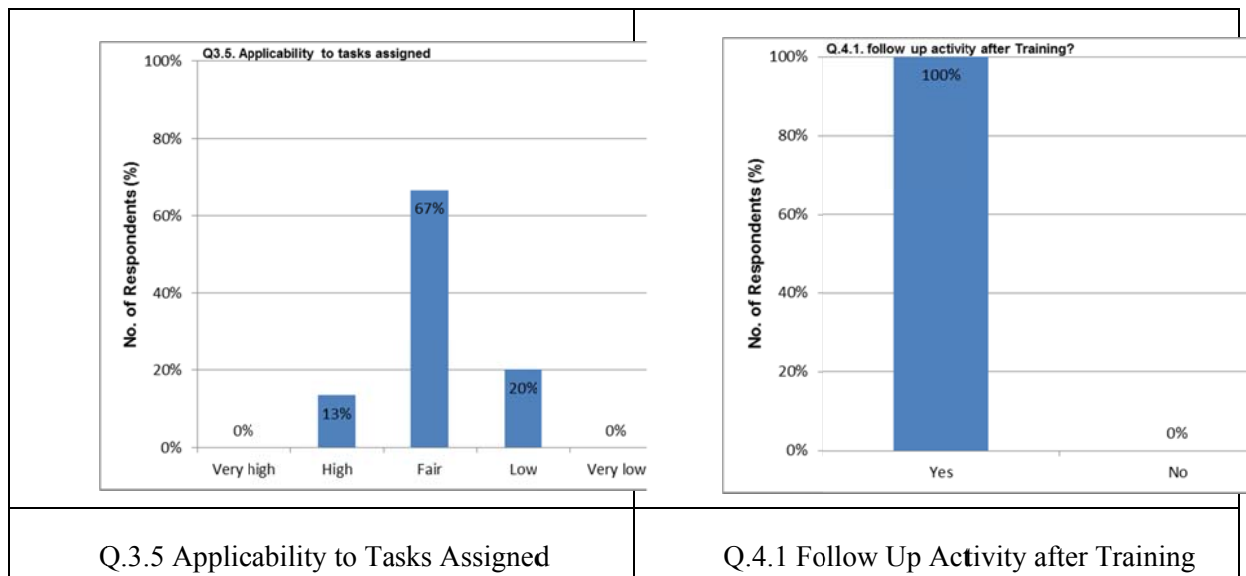
Figure A1.4 The Results of Post-Training Evaluation (3/3)

(7)   Issues and Recommendations

The following issues were observed during preparation and implementation of the training and need to be improved in the next training.

● Because of transitional phase of establishment of RRMU-2 field office and transferring of RRMC's responsibility to RRMU-2 field office, planned number of participants from these field offices could not attend the training.

● There were some discrepancies between planned and actual number of trainees participated from targeted organizations.

● In selecting trainees, proper attention shall be given to provide the training to the really needy officials. Participation from all RRMU-2's field offices is necessary because they might be assigned for data inputting work in the future.

● On the training day, monitoring shall be carried out to make the training more effective and productive.

● It is requested to all trainees to practice data inputting work in database system during the training which eventually builds more confidence in database operation and management and any unclear issues can be discussed during the training.

A1.2   THE SECOND TECHNICAL TRAINING

(1)   General

The second technical training of Activity -1 (i.e. Enhancement of Road Information Management) was conducted on 20th June, 2013 in DRVN headquarters. Minor revision has been made in the training plan which was agreed between DRVN and JICA Project Team after conducting the first technical training. Therefore, training courses were designed based on the revised training plan. Since the first technical training was already implemented, the training

courses for the second technical training were designed specifically for database operation and management.

Similar to the first technical training, PMU officials, counterpart members of Working Group - 1 and Working - 5 and JICA Project Team members were actively involved in preparation and implementation of the second technical training.

(2)   Objective

The objective of the second technical training was to make more familiar with;

- Database Operation and Management (Data Input, Validation Check, Data Editing, Resumption of Data Input Task, and Data Search, Display and Print)
- VBMS Interface

(3)   Participants (Trainees) of the Training

By learning the lesson from the first technical training, DRVN was requested to pay more attention in selecting trainees from the targeted organizations. It was advice to DRVN to nominate trainee who will be the responsible for operation and management of road database including future system upgrading. The targeted organizations are DRVN, RRMU-2, RRMU-2 Field Offices, RTC-Central and RTC-2. Also, DRVN and PMU were requested to select the trainees who attended the first technical training and can attend the remaining training (i.e. the third technical training) because contents in each training course is different and it is highly recommended to attend all three trainings to be familiar with the road database system fully.

A total of eighteen (18) trainees were attended the second technical training. The list of trainees with their details is shown in **Table A1.3.**

Table A1.3   List of Trainees (The Second Technical Training)

SN	Name	Organization	Departmnet	Position
1	Ha Viet Tung	DRVN	Information Center	Specialist
2	Nguyen Khanh Toan	DRVN	Infrastructure and Road Safety Department	Specialist
3	Quach Van Khoa	DRVN	Infrastructure and Road Safety Department	Director
4	Trinh Xuan Sinh	DRVN	Planning and Investment Department	Specialist
5	Nguyen Dinh Phuc	RRMU - 2	Field Office 2.7	
6	Nguyen Quang Hung	RRMU - 2	Field Office 2.3	Staff
7	Duong Dinh Hung	RRMU - 2	Traffic Management Division	Staff
8	Hoang Anh Tuan	RTC - Ccentral		Specialist
9	Nguyen Thanh Sang	RTC - 2	Design Division	Specialist
10	Tran Thi My Ha	RTC - 2	Design Division	Staff
11	Nguyen Quang Huy	RTC - 2	Design Division	Staff
12	Le Van Tan	RRMU - 2	Field Office 2.2	
13	Nguyen Thi Thu Hang	DRVN	Information Center	
14	Trinh Huu Trung	DRVN	Information Center	
15	Le Hoang Long	DRVN	Information Center	
16	Nguyen Van Hoan	RTC - Central		
17	Nguyen Huu Hieu	RTC - Central	Science, Technology and Environment	
18	Nguyen Huu Son	RTC - Central	Science, Technology and Environment	

(4)   Training Program

The training program of "the second technical training" was divided into two sessions, namely Session-I and Session - II. Session - I mainly covered the database operation and management and Session - II mainly focused on computer practice of database operation and management which was explained in Session - I. The detailed training program is shown in **Table A1.4**.

Table A1.4 Training Program (The Second Technical Training)

The Project for Capacity Enhancement in Road Maintenance in Vietnam
The Second Technical Training on Road Database System

Date: 20th June, 2013

Venue: Seminar Room (206), Directorate for Road of Vietnam, Hanoi

Training Program

Time	Contents	Trainer
Registration and Opening		
9:15 – 9:30	Registration	
9:30 – 9:40	Opening Remarks	WG-1 TL , DRVN
	Self-Introduction	All participants
9:40 – 9:45	Explanation of the Outline of the Training Program	Dr. B. R. Pantha
Session -I: Database Operation and Management		
9:45 – 10:00	An Overview of Vietnam National Road Network	Mr. Khoa, TL, WG-1 (DRVN)
10:00 – 11:00	System Installation and Environment Setting	Dr. B.R. Pantha & Mr. P. V. Doan
	New Data Input and Validation Check with Demonstration	
	Resumption of Data Input Task with Demonstration	
11:00 -11:15	Break	
11:15 – 12:00	Data Search, Display and Print with Demonstration	
	Data Editing with Demonstration	
	VBMS Interface with Demonstration	
	Discussion	
12:00 – 13:30	Lunch Break	
Session -II: Practicing on Database Operation and Management		
Trainee will be divided into 4 groups and data input practices will be conducted in turn.		
13:30 – 14:00	Orientation on Data Input, Editing, Validation Check, Resumption of Data Input Task, etc. in the database system using computers.	Dr. B. R. Pantha & Mr. P. V. Doan

(5)   Materials and Methods of the Training

a. **Training Materials**

Since this training was second training of Activity -1, training materials were prepared specifically for database operation and management. Also, sample data were prepared for practicing which were explained in Session - I. Training materials were prepared in detailed and provided to all trainees considering that they can refer to the training materials in the future as well. The following training materials were used in the training;

- Road database system (software)
- Hand-outs prepared specifically for the second technical training
- Road database user manual
- Sample data for data input practicing

b. **Training Method**

In Session - I, trainees were taught by classroom type of lecture / presentation delivered by JICA Project Team and counterpart Team Leader of WG-1. JICA Project Team presented specifically related to database operation and management whereas Mr. Khoa, counterpart Team Leader of WG-1 made a presentation entitled "An overview of Vietnam National Road Network". After the presentation, questions and answers session was also conducted.

Similarly, in Session - II, an opportunity was provided to all trainees to practice database operation and management as explained in Session - I. Database system was installed on seven computers and provided for practicing. Trainees were divided into four (4) groups because only seven (7) computers were available for practicing.

For those participants who did not participate the first technical training, the pre-training evaluation was conducted at the beginning. Similarly, the post-training evaluation of all participants was conducted at the end of the training to evaluate the effectiveness of the training.

| Classroom Type Lecture | Practicing Data Input in Computer |
| (Morning Session) | (Afternoon Session) |

Figure A1.5 Training Methods (Lecture and Computer Practice)

(6) **Outcomes of the Training**

The outcomes of the second technical training were evaluated by conducting post-training evaluation survey. The results of post-training evaluation are summarized in Figure A1.6 and Figure A1.7.

Q.1.1 Training Program as a Whole	Q.1.2 Achievement Expectation
Q.1.3 Contents Offered	Q.1.3 Duration of Sessions Offered
Q.1.5 Training Method	Q.2.1 Session -I: Database Operation and Management
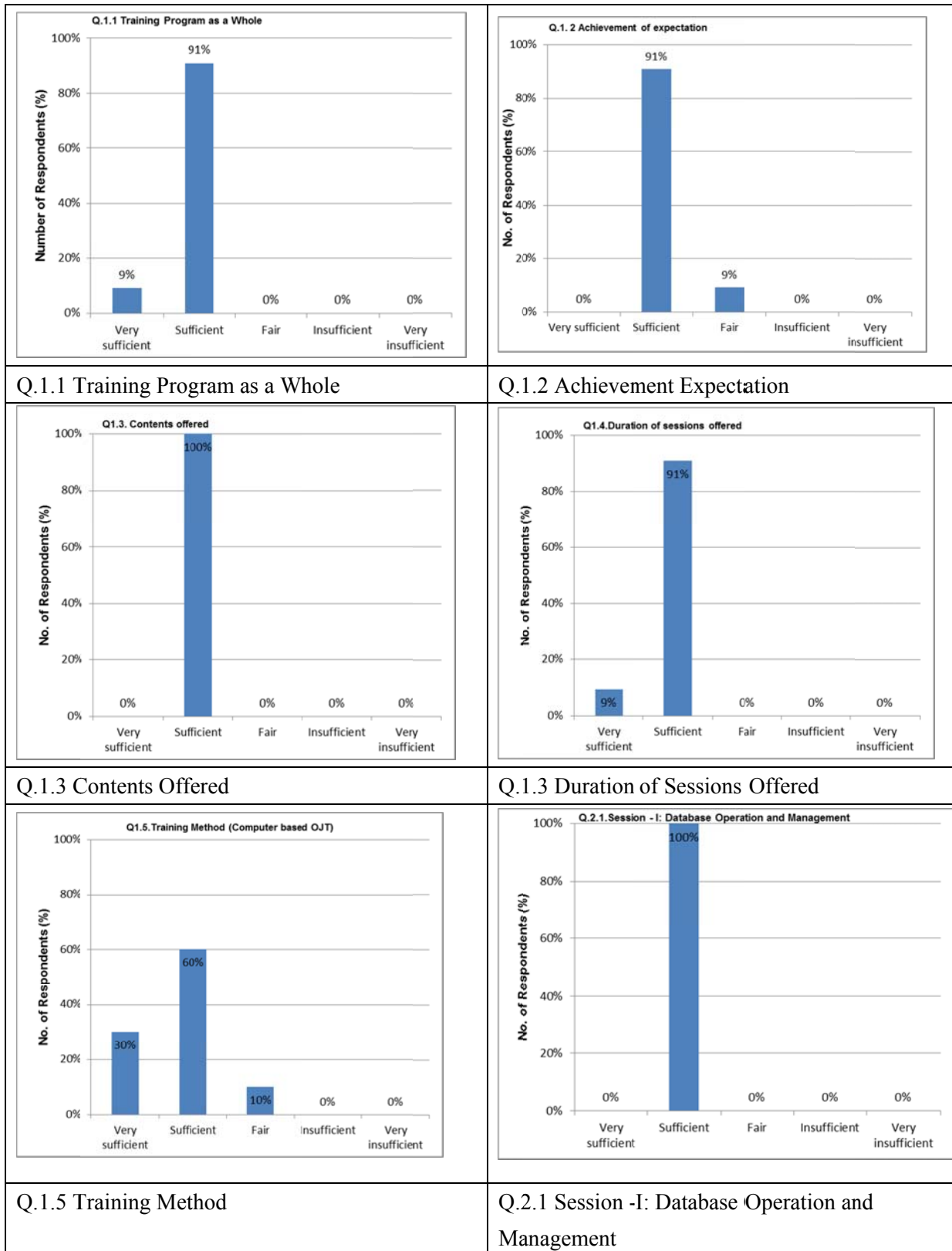
Figure A1.6 Results of Training Evaluation (1/2)

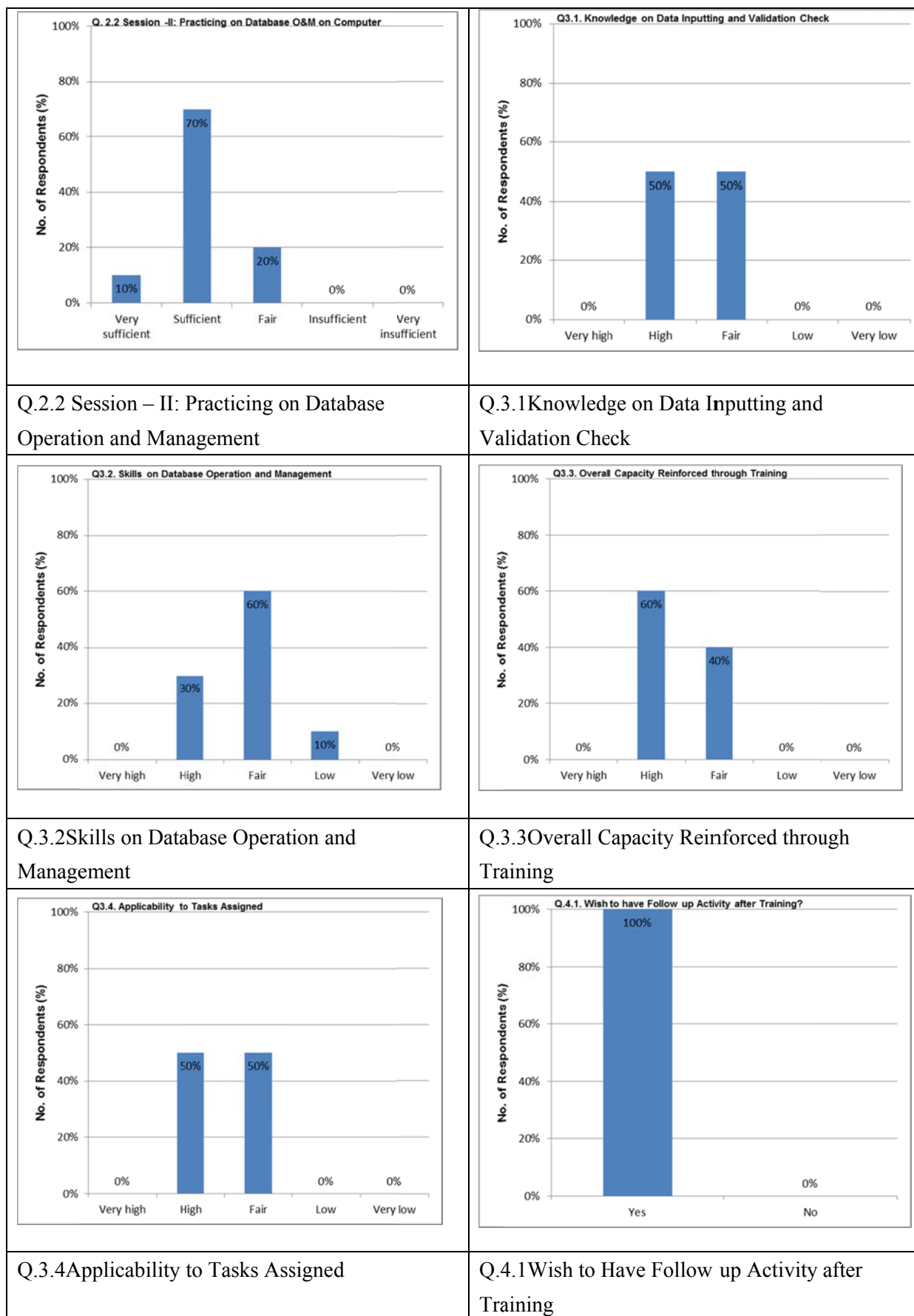|	
Q.2.2 Session – II: Practicing on Database Operation and Management	Q.3.1Knowledge on Data Inputting and Validation Check
Q.3.2Skills on Database Operation and Management	Q.3.3Overall Capacity Reinforced through Training
Q.3.4Applicability to Tasks Assigned	Q.4.1Wish to Have Follow up Activity after Training

Figure A1.7 Results of Training Evaluation (2/2)

(7)   Issues and Recommendations

The following issues were observed during preparation and implementation of the training and need to be improved in the upcoming training.

- Because of transitional phase of establishment of RRMU-2 field office and transferring of RRMC's responsibility to RRMU-2 field office, planned number of participants from these field offices could not attend the training in the second technical training also. Therefore, DRVN/RRMU-2 is requested to distribute training materials to all targeted stakeholders who were absent in the first and second training.

- There were some discrepancies between planned and actual number of trainees participated from targeted organizations in the second technical training also though it was reconfirmed and revised after implementation of the first technical training.

- In selecting trainees, proper attention shall be given to provide the training to the really needy officials. Participation from all RRMU-2's field offices is recommended because they might be assigned for data inputting work in the future.

- It is requested to all trainees to practice database operation and management tasks in database system even after the completion the training which eventually builds more confidence in database operation and management.

A1.3 THE THIRD TECHNICAL TRAINING

(1)   General

The third technical training of Activity -1 (i.e. Enhancement of Road Information Management) was conducted on 28th August, 2013 in DRVN headquarters. The training has been conducted based on the agreed plan between DRVN and JICA Project Team. Those training items which were planned for the first and second training but could not cover in the first and second training were included in the third training. Since the first and second technical trainings have already been implemented, the training courses for the third technical training were designed specifically for the updates made in the database system and additional functions which were developed after implementation of the second training.

Similar to the first and second technical training, PMU officials, counterpart members of Working Group - 1 and Working - 5 and JICA Project Team members were actively involved in preparation and implementation of the third technical training.

(2)   Objective

The objective of the second technical training was to make more familiar with;

- Database Operation and Management (Data Input, Data Editing, New Data Import, Importing Multiple Photos and drawings, Create Report, etc.)
- VBMS Interface
- System Editing / Updating
- System Back-up

(3)   Participants (Trainees) of the Training

Similar to the second training, it was advice to DRVN to nominate trainee who will be the responsible for operation and management of road database including future system upgrading and preferably the same trainees who attended the first and second technical training because contents in each training course is different and it is highly recommended to attend all three trainings to be familiar with the road database system fully. The targeted organizations are DRVN, RRMU-2, RRMU-2 Field Offices, RTC-Central and RTC-2.

A total of nineteen (19) trainees were attended the third technical training. The list of trainees with their details is shown in **Table A1.5**.

Table A1.5   List of Trainees (The Third Technical Training)

SN	Name	Organization	Departmnet	Position
1	Nguyen Khanh Toan	DRVN	Infrastructure and Road Safety Department	Specialist
2	Quach Van Khoa	DRVN	Infrastructure and Road Safety Department	Director
3	Trinh Xuan Sinh	DRVN	Planning and Investment Department	Specialist
4	Nguyen Dinh Phuc	RRMU - 2	Field Office 2.7	-
5	Tu Minh Phuong	RRMU - 2	Field Office 2.6	Staff
6	Duong Dinh Hung	RRMU - 2	Traffic Management Division	Staff
7	Luong Xuan Ngoc	RTC - Ccentral	-	Specialist
8	Tran Thi My Ha	RTC - 2	Design Division	Staff
9	Nguyen Quang Huy	RTC - 2	Design Division	Staff
10	Nguyen Thi Thu Hang	DRVN	Information Center	-
11	Le Hoang Long	DRVN	Information Center	-
12	Pham Thi Ngoc Lan	RRMU2	Regional Office 5	Staff
13	Nguyen Van Tuyen	RRMU2	Regional Office 1	Staff
14	Nguyen Viet anh	RTC 2	Design Division	Staff
15	Nguyen Thi Huong	RTC 2	Design Division	Staff
16	Tran Thanh Tung	RRMU2	Regional Office 2	Staff
17	Nguyen Hong Ha	Telsoft Com	-	Staff
18	Hoang Ngoc Huy	RRMU 2	Technical and construction Man Div	Staff
19	Pham Thi Thang	Telsoft Com	-	Staff

(4)   Training Program

The training program of "the second technical training" was divided into two sessions, namely Session - I and Session - II. Session - I mainly covered the database operation and management

and Session - II mainly focused on computer practice of database operation and management which was explained in Session - I. The detailed training program is shown in **Table A1.6**.

Table A1.6 Training Program (The Third Technical Training)

<table>
<tr><td colspan="3" align="center">**The Project for Capacity Enhancement in Road Maintenance in Vietnam**
The Second Technical Training on Road Database System</td></tr>
<tr><td colspan="3">Date: 28th August, 2013</td></tr>
<tr><td colspan="3">Venue: Seminar Room (206), Directorate for Road of Vietnam, Hanoi</td></tr>
<tr><td colspan="3" align="center">**Training Program**</td></tr>
<tr><td align="center">**Time**</td><td align="center">**Contents**</td><td align="center">**Trainer**</td></tr>
<tr><td colspan="3">Registration and Opening</td></tr>
<tr><td>9:00 – 9:20</td><td>Registration</td><td></td></tr>
<tr><td>9:20 – 9:25</td><td>Opening Remarks</td><td>WG-1 TL , DRVN</td></tr>
<tr><td>9:25 – 9:30</td><td>Explanation of the Outline of the Training Program</td><td>Dr. B. R. Pantha</td></tr>
<tr><td colspan="3">Session -I: Database Operation and Management</td></tr>
<tr><td rowspan="2">9:30 – 9:40</td><td>Necessity of Database in DRVN</td><td rowspan="2">Mr. Toan Nguyen Khanh</td></tr>
<tr><td>Current Status of Database in DRVN and its Problem</td></tr>
<tr><td rowspan="5">9:40 – 10:30</td><td>New Data Input, Validation Check and Importing multiple photos and drawings with Demonstration</td><td rowspan="12">Dr. B.R. Pantha & Mr. P. V. Doan</td></tr>
<tr><td>Data Editing with Demonstration</td></tr>
<tr><td>Data Exporting from Database (Create Report Function) with demonstration</td></tr>
<tr><td>Data Importing (Data Assembling from various site offices or RRMUs) with demonstration</td></tr>
<tr><td>Storing Pavement Condition and Traffic Volume Data into Road Database</td></tr>
<tr><td>10:30 -10:45</td><td>Break</td></tr>
<tr><td rowspan="3">10:45 – 11:30</td><td>Database System Updating / Editing</td></tr>
<tr><td>System Back-up</td></tr>
<tr><td>Discussion</td></tr>
<tr><td>11:30 – 13:20</td><td>Lunch Break</td><td></td></tr>
<tr><td colspan="3">Session -II: Practicing on Database Operation and Management</td></tr>
<tr><td colspan="3">Trainee will be divided into 4 groups and data input practices will be conducted in turn.</td></tr>
<tr><td>13:20 – 13:30</td><td>Orientation on Computer Practice for database operation and management</td><td>Dr. B. R. Pantha & Mr. P. V. Doan</td></tr>
<tr><td>13:30 – 14:00 (Group 1)</td><td>Practice in computer</td><td>Dr. B. R. Pantha and</td></tr>
</table>

(5)   Materials and Methods of the Training

a. Training Materials

Since this training was third training of Activity -1, training materials were prepared focusing on changes made in the previous version and supplemented functions in the system. Also, sample data were prepared for practicing specially by focusing on new data import (data assembling) and importing multiple photos and drawings. Training materials were prepared in detailed and provided to all trainees considering that they can refer to the training materials in the future as well. The following training materials were used in the training;

- Road database system (software)
- Hand-outs prepared specifically for the third technical training
- Road database user manual
- Sample data for data practicing

b. Training Method

In Session - I, trainees were taught by classroom type of lecture / presentation delivered by JICA Project Team and member of WG-1 from counterpart side. JICA Project Team presented specifically related to database operation and management, system updating, etc. whereas Mr. Toan, member of WG-1 made a presentation on necessity of road database and current status of road database system in DRVN. After the presentation, questions and answers session was also conducted.

Similarly, in Session - II, an opportunity was provided to all trainees to practice database operation and management as explained in Session - I. Since data assembling from various RRMU-2 Field Offices is very much important, trainees were requested to be familiar with this function so that they can easily gather data from various offices in the database system in RRMU-2 or in DRVN level. Database system was installed on seven computers and provided for practicing. Trainees were divided into five (4) groups because only seven (7) computers were available for practicing.

For those participants who did not participate the first and second training, the pre-training evaluation was also conducted. Similarly, the post-training evaluation of all participants was conducted at the end of the training to evaluate the effectiveness of the training.

| Classroom Type Lecture | Practicing Data Input in Computer |

Figure A1.8 Training Methods (Lecture and Computer Practice)

(6) **Outcomes of the Training**

The outcomes of the third technical training were evaluated by conducting post-training evaluation survey. However, only 9 participants submitted their evaluation sheet at the end. The results of post-training evaluation (based on evaluation of 9 participants) are summarized in **Figure A1.6** and **Figure A1.7.** Since the third technical training was focused on system editing and upgrading which need deep knowledge of MS-Excel VBA, evaluation result reveals that the output of the training is not as good as the second training. Furthermore, because of the urgent important meeting of the DRVN, training room needed to be provided for the meeting. As a result, the overall training course was shortened to half day only.
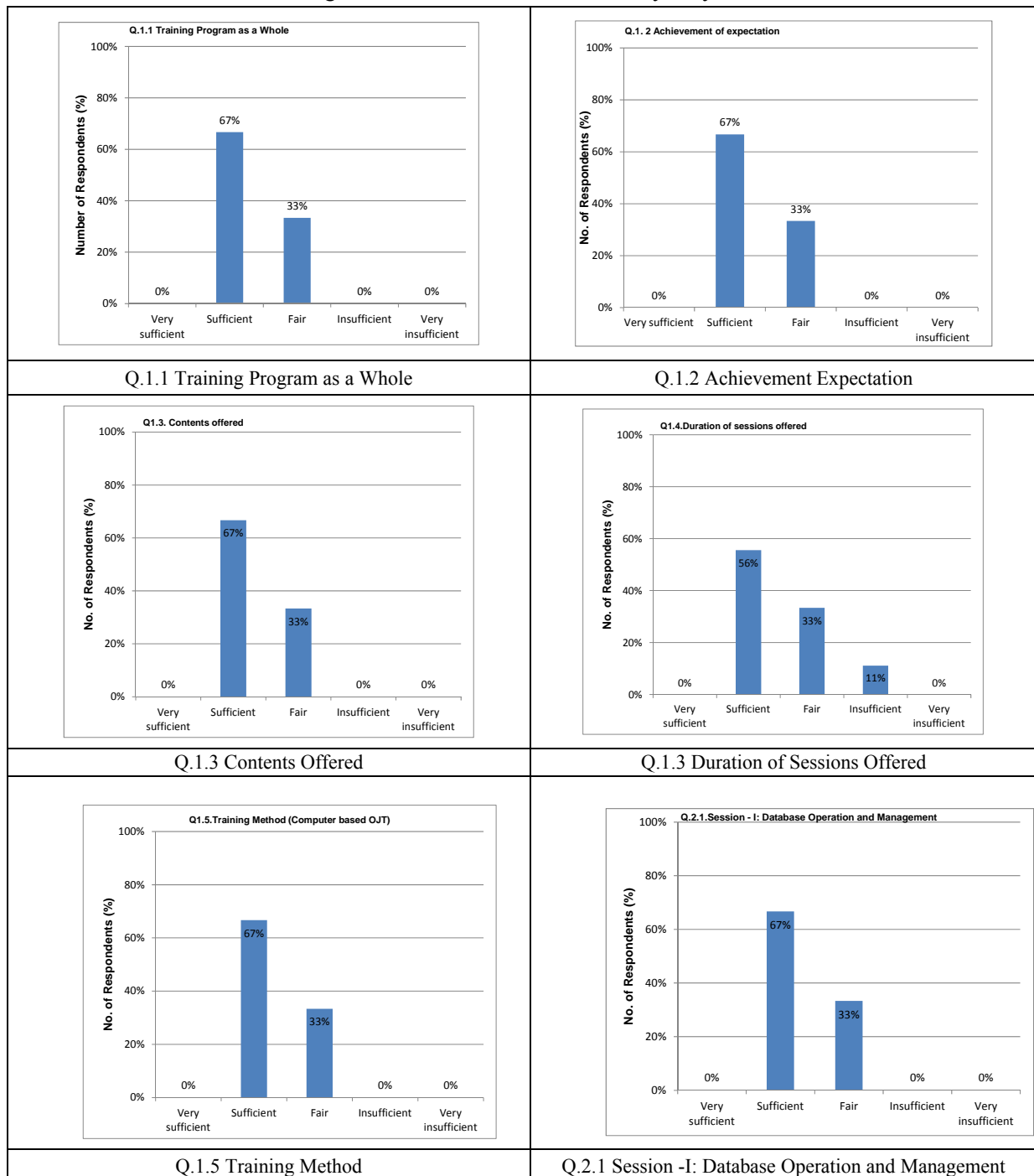
Q.1.1 Training Program as a Whole	Q.1.2 Achievement Expectation
Q.1.3 Contents Offered	Q.1.3 Duration of Sessions Offered
Q.1.5 Training Method	Q.2.1 Session -I: Database Operation and Management

Figure A1.9 The Results of Training Evaluation (1/2)

Q. 2.2 Session -II: Practicing on Database O&M on Computer	Q3.1. Knowledge on Data Inputting and Validation Check
Q.2.2 Session – II: Practicing on Database Operation and Management	Q.3.1 Knowledge on Data Inputting and Validation Check
Q3.2. Skills on Database Operation and Management	Q3.3. Overall Capacity Reinforced through Training
Q.3.2 Skills on Database Operation and Management	Q.3.3 Overall Capacity Reinforced through Training
Q3.4. Applicability to Tasks Assigned	Q4.1. Wish to have Follow up Activity after Training?
Q.3.4 Applicability to Tasks Assigned	Q.4.1 Wish to Have Follow up Activity after Training

Figure A1.10 Results of Post-Training Evaluation (2/2)

(7) Issues and Recommendations

The following recommendations are made by after implementing the third (the last) technical training.

- Proper attention shall be given when selecting the trainee (i.e. right person from right organization who practically is being involved in database operation and management.

- Follow-up training shall be provided timely as per the training plan prepared for "After the Project Training".

- Before taking the decision on updating the system, it is recommended to have discussion among the road database users to discuss the insufficiency in the system and find the common solution.

- It is recommended to organize the training by inviting trainees from all relevant organizations, explain the changes made in the system and circulate the revised system to all users if database system is revised.

- It is recommended to DRVN to conduct similar training by targeting to the organizations especially RRMU-2 Field Offices who could not send their staff in the trainings conducted by JICA Project Team.

- When this database system is distributed to other RRMUs, training shall also be conducted to all potential users of respective RRMUs.

APPENDIX - A2: ENHANCEMENT OF PLANNING CAPACITY FOR ROAD MAINTENANCE

A2.1 DATASET

The following types of dataset are used in PMS.

a. **Pavement Management System dataset (PMS Dataset)**

b. **Pavement Deterioration Evaluation Module Dataset**

c. **Dataset for Budget Planning Dataset**

d. **Repair Work Planning Module Dataset**

Table A2.2.1.1 PMS Dataset

Column No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Data Item	Road Asset Data														
	Road ID	Route Number	Road Name	Route Branch Number	RRMU	RRMU Field Office	Structure Type	Crossing Type	Overlap Section	Geo-graphical Area	Year / Month of Service Operation Open	Year / Month of Construction End	Road Section		
													From km	m	To km
Data Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Column No.	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD
Data Item	Road Asset Data												Pavement Condition Data		
	Road Section		Number of Lanes	Up or Down or Single	Pavement Type	Pavement Width	Pavement Thickness	Climate		Terrain Type	Road Class	Dummy	Latest Condition Survey		
	m	Section Length				m	cm	Annual Precipitation	Temperature	Flat/ Mountainous			Year/ month of survey	Lane position surveyed	Pavement type
Data Number	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Column No.	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR
Data Item	Pavement Condition Data													
	Latest Condition Survey							2nd latest Condition Survey						
	Crack Rate				Rut Depth		IRI	Year/ month of survey	Lane position surveyed	Pavement type	Crack Rate			
	Cracking %	Patching %	Pothole unrepaired %	Total %	Maximum mm	Average mm	mm/m				Cracking %	Patching %	Pothole unrepaired %	Total %
Data Number	31	32	33	34	35	36	37	38	39	40	41	42	43	44

Column No.	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG
Data Item	Pavement Condition Data					Maintenance History Data						Traffic Volume Data			
	2nd Latest Condition					Latest Year						Latest survey		2nd Latest survey	
	Rut Depth		IRI	MCI	Dummy	Year / Month of the latest repair	Repaired Lane	Repair Method	Repair Classification	Dummy	Dummy	Total traffic volume	Heavy traffic volume	Total traffic volume	Heavy traffic volume
	Maximum mm	Average mm	mm/m									AADT (24 hour data)	AADT (24 hr data)	AADT (24 hr data)	AADT (24 hr data)
Data Number	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59

Column No.	BH	BI
Data Item	Traffic Volume Data	
	Dummy	Dummy
Data Number	60	61

Table A2.2.1.2   Dataset for Pavement Deterioration Evaluation Module (PE)

Column No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Data Item	C-before	R-before	I-before	C-after	R-after	I-after	Interval	const	X1	X2	X3	X4	Separator 1	Separator 2	Separator 3
PMS Dataset Data Number	See Flowchart	See Flowchart	See Flowchart	34	36	37	See Flowchart	"1"	See Flowchart	See Flowchart	See Flowchart	See Flowchart	3	5	6

Column No.	P	Q	R
Data Item	Separator 4	Separator 5	Length
PMS Dataset Data Number	20	52	17

(Note)

C/R/I –before: 2nd latest pavement condition survey data

C/R/I –after: Latest pavement condition survey data

Table A2.2.1.3 Dataset for Budget Planning (BP)

Column No.	A	B	C	D	E	F	G	H	I
Data Item	Crack	Rut	IRI	Section Length (m)	Width (m)	Pave Type	Formula No. Cracking	Formula No. Rutting	Formula No. IRI
PMS Dataset Data Number	34	36	37	17	21	22	Computer use area (Prohibit data manual input)		

Table A2.2.1.4 Dataset for Repair Work Planning Module (RP)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
									Road inventory										
Column	A	B	C	D	E	F	G	H	Const riction Year	Kilo Post from km	from m	to km	to m	Length, m	Number of Lanes	Up or Down	Pavement Type	Width, m	<Dummy>	<Dummy>
	No	Route No	Route Name	Brunch No	RRMU	RRMU Field Office	Road Class													
	12	1	NATIONAL HIGHWAY 1	0	RRMU2	RRMC236	VI		0	100	0	200	100	2	U	AC	6		
	13	1	NATIONAL HIGHWAY 1	0	RRMU2	RRMC236	II		0	200	0	300	100	2	U	AC	6		
	14	1	NATIONAL HIGHWAY 1	0	RRMU2	RRMC236	IV		0	300	0	400	100	2	U	AC	6		

T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL
Latest Repair						Result of Pavement Condition Survey												
Year/Month of Latest Repair (yyyy/mm)	Repair Lane	Repair Method	Repair Classification (*)	<Dummy>	<Dummy>	Surveyed Year/Month	Surveyed Lane	Pavement Type	Cracking Ratio, % Crack, %	Patching, %	Pothole, %	Total, %	Rutting Depth, mm Max, mm	Average, mm	IRI, mm/m	MCI	<Dummy>	<Dummy>
1998/01	2	AsOL				2012/10	1	AC	43	7	5	55	31	8	6.9			
						2012/10	1	AC	15	4	3	22	48	39	7.9			
						2012/10	1	AC	69	4	4	77	59	2	7.8			

AM	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD	BE	BF	BG	H	BI
Benchmarking Evaluation						Site Investigation			Result of Structural Test						Analysis of Structural Test				Results			
Cracking	Rutting	IRI	Target for Structural Test	Dummy	Dummy	Judgment of Necessity	Repair Area, m2	Embankable	Date of FWD Test	D0 (mm)	D20 (mm)	D150 (mm)	Reliability (%)	Traffic Volume	Current CBR (%)	TA0	Required TA	Shortage TA	Repair Work Type	Repair Cost, 1000VND	FWD Cost, 1000VND	Total Cost, 1000VND
502940	502940	502940												679								
502940	502940	502940												1154								
502940	502940	502940												460								

A2.2 PAVEMENT PERFORMACE INDIXES

1) MCI: Maintenance Control Index

MCI is developed by MLIT Public Work Institutes.

2) PSI: Pavement Service Index

PCI: Pavement Condition Index

Upon brief evaluation, the Project recommends the tentative use of MCI index to the planning of road maintenance and repair plans. It should be noted here that final selection of the comprehensive index should be conducted based on the comparative analysis of pavement deterioration by using pavement condition data measured on national roads in Vietnam.

MCI (Maintenance Control Index) consists of four (4) formula. <u>The minimum outcome value produced by the following four formulas is selected as a representative of MCI index</u>. In case the evenness is not measured. The minimum value among 2), 3) and 4) is adopted.

$MCI = 10 - 1.48\, C^{0.3} - 0.29\, D^{0.7} - 0.47\, \sigma^{0.2}$ ---------------- 1)

$MCI_0 = 10 - 1.51\, C^{0.3} - 0.30\, D^{0.7}$ --------------------------- 2)

$MCI_1 = 10 - 2.23\, C^{0.3}$ --- 3)

$MCI_2 = 10 - 0.54\, D^{0.7}$ --- 4)

Where,

C: Cracking Ratio (%), D: Rutting Depth (mm), σ : Evenness (Vertical Roughness (mm))

Here, σ can be derived from IRIs by transforming the following formula;

$IRI = 1.33 \times \sigma + 0.24$ (Coefficient of Correlation=0.93)

$IRI = 1.96 \times \sigma - 1.37$ (Coefficient of Correlation=0.71)
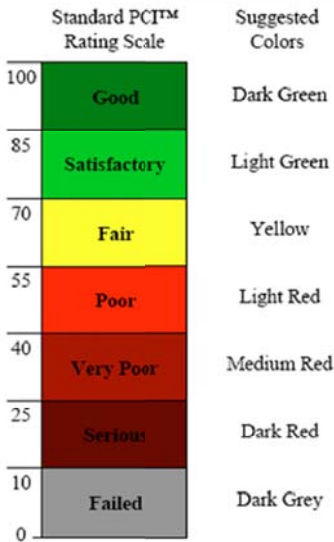
$IRI = 1.47 \times \sigma + 0.75$ (Coefficient of Correlation=0.94)

$IRI = 0.74 \times \sigma + 1.77$ (Coefficient of Correlation=0.83)

(Note) Equations are published by Japan Road Association

Table A2.2.2.1 Comparison of Road Pavement Deterioration Indexes

No.	Items	MCI (Maintenance Control Index)	PCI (Pavement Condition Index)	PSI (Present Serviceability Index)
1	Formulation	Developed and has been used in JAPAN	Developed by the U.S. Army Corps of Engineers	Developed by AASHTO at the AASHO Road Test
2	Significance and Use		The PCI is a numerical indicator that rates the surface condition of the pavement. The PCI provides a measure of the present condition of the pavement based on the distress observed on the surface of the pavement, which also indicates the structural integrity and surface operational condition (localized roughness and safety). The PCI cannot measure structural capacity nor does it provide direct measurement of skid resistance or roughness. It provides an objective and rational basis for determining maintenance and repair needs and priorities. Continuous monitoring of the PCI is used to establish the rate of pavement deterioration, which permits early identification of major rehabilitation needs. The PCI provides feedback on pavement performance for validation or improvement of current pavement design and maintenance procedures.	
3	Formula	There are four (4) formulas for MCI; the smallest value of MCI is applied as representative MCI value in the sections. $MCI = 10 - 1.48\,C^{0.3} - 0.29\,D^{0.7} - 0.47\,F^{0.2}$ (1) $MCI_0 = 10 - 1.51C^{0.3} - 0.30\,D^{0.7}$ (2) $MCI_1 = 10 - 2.23C^{0.3}$ (3) $MCI_2 = 10 - 0.54D^{0.7}$ (4) C: Cracking Ratio in % R: Rutting Depth in mm F: Judean Out Otsu Roy (Traverse Unevenness Volume =" Heian see" above) in mm F can be determined by following formulas (published by Japan Road Association 2013) 1. IRI = 1.33 X F + 0.24 (R=0.93) 2. IRI = 1.96 X F - 1.37 (R=0.71) 3. IRI = 1.47 X F + 0.75 (R=0.94) 4. IRI = 0.74 X F + 1.77 (R=0.83) "R" above means coefficient of correlation for each formula		$PSI = 5.02 - \log(1+SV) - 1.38(RD)^2 - 0.01(C+P)^{1/2}$ Where: PSI = Statistical estimate of the Mean PSR (Present Serviceability Rating) SV = Slope variance over section from CHLOE profilometer (slope variance was an early roughness measurement) RD = Mean Rut Depth (in.) C = Cracking (ft^2 / 1000 ft^2) P = Patching (ft^2 / 1000 ft^2)
4	Range of value	**MCI = [0; 10]** MCI=0 means the worst condition	**PCI = [0; 100]**	**PSI = [0; 5]** **PSR = [4 ; 5] = {VERY GOOD}**

No.	Items	MCI (Maintenance Control Index)	PCI (Pavement Condition Index)	PSI (Present Serviceability Index)
		MCI=10 means the best condition		Only new, superior (or nearly new) pavements are likely to be smooth enough and distress free (sufficiently free of cracks and patches) to qualify for this category. Most pavements constructed or resurfaced during the data year would normally be rated very good. **PSR = [3 ; 3.9] = {GOOD}** Pavements in this category, although not quite as smooth as those described above, give a first class ride and exhibit few, if any, visible signs of surface deterioration. Flexible pavements may be beginning to show evidence of rutting and fine random cracks. Rigid pavements may be beginning to show evidence of slight surface deterioration, such as minor cracks and Spalding. **PSR = [2 ; 2.9] = {FAIR}** The riding qualities of pavements in this category are noticeably inferior to those of new pavements, and may be barely tolerable for high speed traffic. Surface defects of flexible pavements may include rutting, map cracking and extensive patching. Rigid pavements in this group may have a few joint failures, faulting and cracking, and some pumping. **PSR = [1 ; 1.9] = {POOR}** Pavements in this category have deteriorated to such an extent that they affect the speed of free-flow traffic. Flexible pavement may have large potholes and deep cracks. Distress includes raveling, cracking, rutting, and occurs over 50 percent, or more, of the surface. Rigid pavement distress includes joint spalling, faulting, patching, cracking, scaling, and may include pumping and faulting. **PSR = [0 ; 0.9] = {VERY POOR}** Pavements in this category are in an extremely deteriorated condition. The facility is passable only at reduced speeds, and with considerable ride discomfort. Large potholes and deep cracks exist. Distress occurs over 75 percent or more of the surface.
5	Application			

APPENDIX - A3: CASE STUDY OF ORGANIZATION, SYSTEM AND PROCEDURE ON ROAD MAINTENANCE IN JAPAN AND OTHER COUNTRIES

A3.1 STRUCTURE OF ORGANIZATIONS ON ROAD MAINTENANCE OF NATIONAL HIGHWAY IN JAPAN

A3.1.1 System of Central Government in Japan

System of the central government follows on "National Government Organization Act" (10th July, 1948). The following ministries and agencies exist currently as per June 2009. Meanwhile, Cabinet Secretariat, Cabinet Legislation Bureau, Security Council of Japan, National Personnel Authority, Board of Audit of Japan and Cabinet Office is established based on the other separate acts since their duties are special.

- Ministry of Internal Affairs and Communications

  - Environmental Disputes Coordination Commission

  - Fire and Disaster Management Agency
- Ministry of Justice

  - Public Security Examination Commission

  - Public Security Intelligence Agency
- Ministry of Foreign Affairs
- Ministry of Finance

  - National Tax Agency
- Ministry of Education, Culture, Sports, Science and Technology

  - Agency for Cultural Affairs
- Ministry of Health, Labour and Welfare

  - Central Labour Relations Commission
- Ministry of Agriculture, Forestry and Fisheries

  - Forestry Agency

  - Fisheries Agency
- Ministry of Economy, Trade and Industry

  - Agency for Natural Resources and Energy

  - Japan Patent Office

  - Small and Medium Enterprise Agency

● Ministry of Land, Infrastructure, Transport and Tourism

- Central Labour Relations Commission for Seafarers

- Japan Meteorological Agency

- Japan Coast Guard

- Japan Marine Accident Inquiry Agency

● Ministry of the Environment

● Ministry of Defense

- Defense Facilities Administration Agency

The central government reform was implemented in January 2001 based on Basic Act on Central Government Reform. The basic idea of reform is to enhance cabinet's capacity and to decrease administration task and programs and make it efficient. Following it, previous system of one office and twenty-two ministries and agencies was shuffled and transferred to current system of one office and twelve ministries and agencies.

A3.1.2 System of Ministry of Land, Infrastructure, Transport and Tourism (MLIT)

MLIT was established in January 2000, merging two ministries and two agencies, namely Ministry of Transport, Ministry of Construction, National Land Agency and Hokkaido Development Agency. It is one of biggest governmental ministry which has total approximately 45,000 numbers of staff.

It is established based on the "Act for Establishment of the Ministry of Land, Infrastructure, Transport and Tourism". The organization system is as follows. Minister, Senior Vice-Ministers, Parliamentary Vice-Ministers are nominated by a ruling party, i.e. usually politicians. Other staff is civil servants.

Ministry

Described partly

- Minister
- Senior Vice-Minister (2)
- Parliamentary Vice-Minister (3)
- Private Secretary to Minister
- Vice-Minister
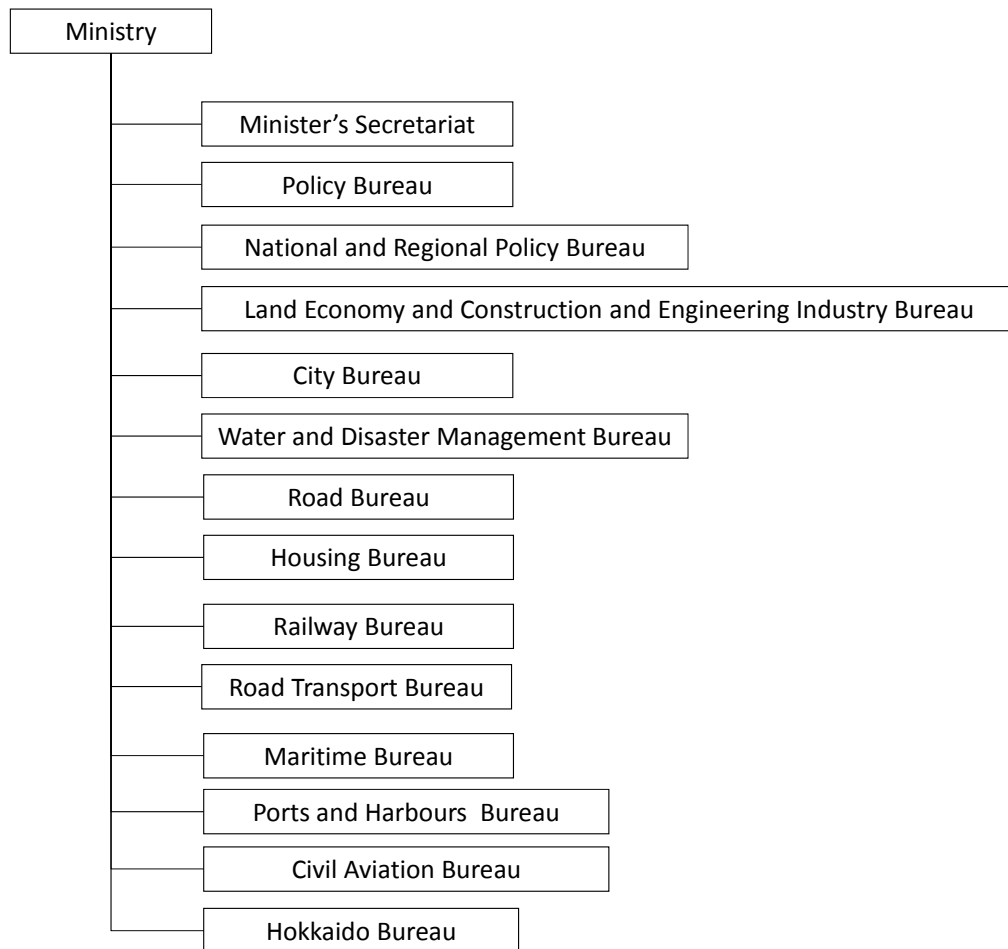- Vice-Minister for Engineering Affairs
- Vice-Minister for Infrastructure
- Vice-Minister for Land and Hokkaido Development
- Vice Minister for Transport, Tourism and International Affairs
- Internal Bureaus and Offices in Headquarters (14)
- Regional Development Bureau (8)
- Hokkaido Regional Development Bureau
- District Transport Bureaus
- Regional Civil Aviation Bureaus
- Air Traffic Control Centers
- Policy Research Institute for Land, Infrastructure, Transport and Tourism
- National Research Institute for Land and Infrastructure Management
- College of Land, Infrastructure, Transport and Tourism
- Aeronautical Safety College
- Geographical Survey Institute
- Japan Meteorological Agency
- Japan Coast Guard

(1)   High Rank Officials of MLIT

The high rank officials of MLIT are responsible for the following duties.

3) Minister
- All of Ministers are appointed by the Prime Minister based on Clause5 of National Government Organization Act as follows.
- The head of a ministry shall be a minister, and shall take charge of and manage the relevant administrative matters as the competent minister referred to in the Cabinet Act (Act No. 5 of 1947).
- A minister shall be appointed by the Prime Minister from among the Ministers of State; provided, however, that this shall not preclude the Prime Minister from assuming such a position himself/herself

4) Senior Vice-Minister
- This position is based on Clause16 of National Government Organization Act as follows.
- Each ministry shall establish senior vice-ministers.
- The fixed number of senior vice-ministers shall be prescribed respectively. (MLIT has Two.)
- A senior vice-minister shall take charge of policies and planning and deal with state affairs by the order of the minister who is the head of the ministry concerned, and by receiving the order of the Minister, who is the head of such ministry in advance, perform the duties of the minister in the absence of said minister.
- In a ministry where two senior vice-ministers are established, the scope of duties and the order in which to act for the minister as set forth in the preceding paragraph to be carried out by each senior vice-minister shall be as specified by the minister who is the head of the ministry concerned.
- Appointment or dismissal of a senior vice-minister shall be effected by the Cabinet based on a proposal made by the minister who is the head of the ministry concerned and the Emperor will certify it.
- The senior vice-ministers shall, in the case of the general resignation of the Cabinet, lose their positions at the same time as the Prime Minister and all other Ministers of State lose their positions.

5) Parliamentary Vice-Minister
- This position is based on Clause17 of National Government Organization Act as follows.
- Each ministry shall establish parliamentary vice-ministers.
- The fixed number of parliamentary vice-ministers shall be prescribed respectively. (MLIT has Three.)
- A parliamentary vice-minister shall assist the minister who is the head of the ministry concerned, participate in specified policies and planning, and deal with state affairs.

- The scope of the duties set forth in the preceding paragraph to be carried out by each parliamentary vice-minister shall be as specified by the minister who is the head of the ministry concerned.
- Appointment or dismissal of a parliamentary vice-minister shall be effected by the Cabinet based on a proposal made by the minister who is the head of the ministry concerned.
- The provisions of paragraph 6 of the preceding Article shall apply mutatis mutandis to parliamentary secretaries.

6) **Private Secretary**
- This position is based on Clause19 of National Government Organization Act as follows.
- Each ministry shall establish private secretaries.
- The fixed number of private secretaries shall be specified by a Cabinet Order.
- A private secretary shall take charge of the affairs concerning confidential matters by order of the minister of the ministry concerned or assist in the affairs of the relevant bureaus and departments by temporary order of the minister.

7) **Vice-Minister**
- This position is based on Clause18 of National Government Organization Act as follows.
- Each ministry shall establish one vice-minister.
- A vice-minister shall assist the minister who is the head of the ministry concerned, coordinate the affairs of the ministry, and supervise the affairs of the relevant bureaus, departments and organs.
- A ministry may, when particularly necessary, establish positions that collectively coordinate part of the affairs under its jurisdiction, and the establishment, the duties and the fixed number of such positions shall be specified by an Act.

8) **Vice-Minister for Engineering Affairs**
- This position is based on Clause5 of Act for Establishment of the Ministry of Land, Infrastructure, Transport and Tourism.
- The duty is to supervise whole engineering issues of MLIT.

9) **Vice-Minister for Infrastructure, Vice-Minister for Land and Hokkaido Development, Vice-Minister for Transport, Tourism and International Affairs**
- These positions are based on Clause5 of Act for Establishment of the Ministry of Land, Infrastructure, Transport and Tourism.
- The duty is to supervise administration of important issues of MLIT, which the covering filed by each position is described as the position title.

(2) **Internal Bureaus and Offices in Headquarters of MLIT**

The headquarters of MLIT is located at Tokyo and has following 14 internal bureaus and offices in it. These internal bureaus are established based on the Article7 "Internal Bureaus and

Departments" of "National Government Organization Act". Also the establishment of them and the scope of affairs under their jurisdiction shall be specified by a Cabinet Order.

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┌───────────┐
│  Ministry │
└───────────┘
      │
      ├──────┌─────────────────────────────────────────────────────┐
      │      │              Minister's Secretariat                 │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │                   Policy Bureau                     │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │          National and Regional Policy Bureau         │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │ Land Economy and Construction and Engineering Industry Bureau │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │                    City Bureau                      │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │         Water and Disaster Management Bureau         │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │                   Road Bureau                       │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │                  Housing Bureau                     │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │                  Railway Bureau                     │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │               Road Transport Bureau                 │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │                  Maritime Bureau                    │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │              Ports and Harbours  Bureau             │
      │      └─────────────────────────────────────────────────────┘
      ├──────┌─────────────────────────────────────────────────────┐
      │      │               Civil Aviation Bureau                 │
      │      └─────────────────────────────────────────────────────┘
      └──────┌─────────────────────────────────────────────────────┐
             │                  Hokkaido Bureau                    │
             └─────────────────────────────────────────────────────┘
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Road Bureau is in charge of state management of road sector in Japan. Its organization chart is as follows. In addition, Road Transport Bureau is mainly responsible for management of transport enterprises on road such as public bus, taxi, freight service; registration and safety issues of vehicles. Its official name in English is "Road Transport Bureau", however, its official name in Japanese is "JIDOUSHA KYOKU" which means "Vehicle Bureau" in English.

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┌─────────────────────────────────┐
│ Director General of Road Bureau │
└─────────────────────────────────┘
        │
        ├───┤ Vice Director General of Road Bureau │
        │
        ├───┤ Deputy Director General of Road Bureau │
        │
        ├───┤ General Affairs Div. │───┤ Road Policy Planning Office │
        │                             └──┤ Expressway Companies Affairs Office │
        │
        ├───┤ Road Legal
        │      Administration Div. │───┤ Road Use Coordination Office │
        │
        ├───┤ Road Traffic Control Div. │───┤ ITS Policy and Program Office │
        │
        ├───┤ Planning Div. │───┤ Economic Research, Traffic Survey and Census Office │
        │                     └──┤ Performance Management Office │
        │
        ├───┤ National HW and Risk Management Div. │───┤ Road Risk Management Office │
        │                                           └──┤ Road Management Office │
        │
        ├───┤ Environment and Safety Div. │───┤ Regional Road Coordination Office │
        │                                  ├──┤ Road Environment Planning Office │
        │                                  └──┤ Road Safety Management Office │
        │
        └───┤ Expressway Div. │───┤ Toll Road Coordination Office │
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(3)   Regional Development Bureau (RDB)

There are 8 regional development bureaus under the ministry. Each regional development bureau is located in the representing city of each area. In Hokkaido, northern island of Japan, Hokkaido Development Bureau is established under the ministry. Since it was under Hokkaido Development Agency until 2000, the function is slightly different from other development bureaus, however, it has same functions in terms of road administration. In Okinawa, southern islands of Japan, Okinawa General Bureau is established under the Cabinet Office. Similarly, it was under Okinawa Development Agency until 2000, the function is slightly different from other regional development bureaus. It is same in terms of road administration function although it is out of MLIT.

The number of staff and location of each RDB is as follows.

Name	Location	Number of Staff
Tohoku	Sendai City, Miyagi Pref.	3,000
Kanto	Saitama City, Saitama Pref.	4,000
Hokuriku	Niigata City, Niigata Pref.	2,000
Chubu	Nagoya City, Aichi Pref.	2,500
Kinki	Osaka City, Osaka Pref.	2,500
Chugoku	Hiroshima City, Hiroshima Pref.	2,000
Shikoku	Takamatsu City, Kagawa Pref.	1,000
Kyushu	Fukuoka City, Fukuoka Pref.	3,000
Hokkaido	Sapporo City, Hokkaido Pref.	5,500
Okinawa	Naha City, Okinawa Pref.	1,000

Hokkaido RDB
(5,500)

Tohoku RDB
(3,000)

Hokuriku RDB
(2,000)

Kanto RDB (4,000)

Chugoku RDB
(2,000)

Chubu RDB (2,500)

Kinki RDB (2,500)

Shikoku RDB
(1,000)

Kyushu RDB
(3,000)

Okinawa General Bureau
(Under Cabinet Office)
(1,000)

(　): Number of Staff
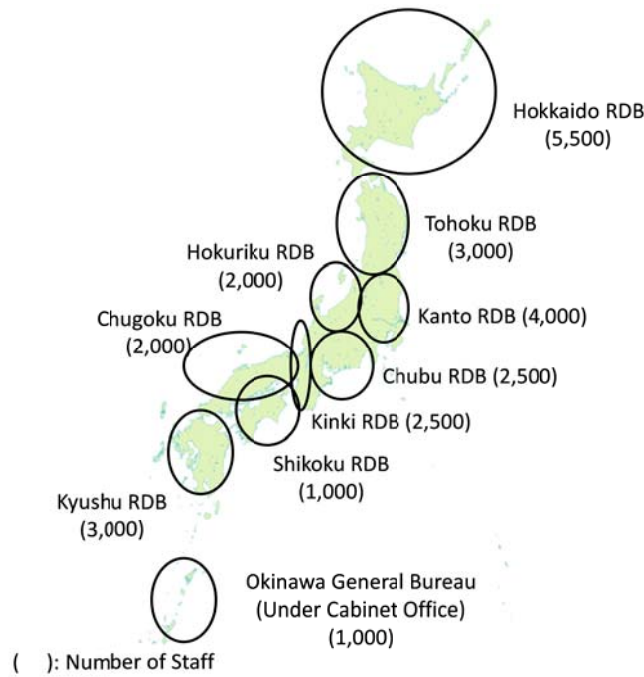
Structure of regional development bureau in case of Kanto RDB is shown as follows. Other regional development bureaus have almost same structure. It is established based on Article30 "Chapter 3 Post and Organization in head office" – "Clause 4 Regional Branch Organization" of the "Act for Establishment of the Ministry of Land, Infrastructure, Transport and Tourism".

Director General of RDB

Deputy Director General

General Affairs Department

Planning Department

Construction Industry, City and Housing Department

River Department

Road Department

Airport and Seaport Department

Government Buildings Department

Public Use Land Department
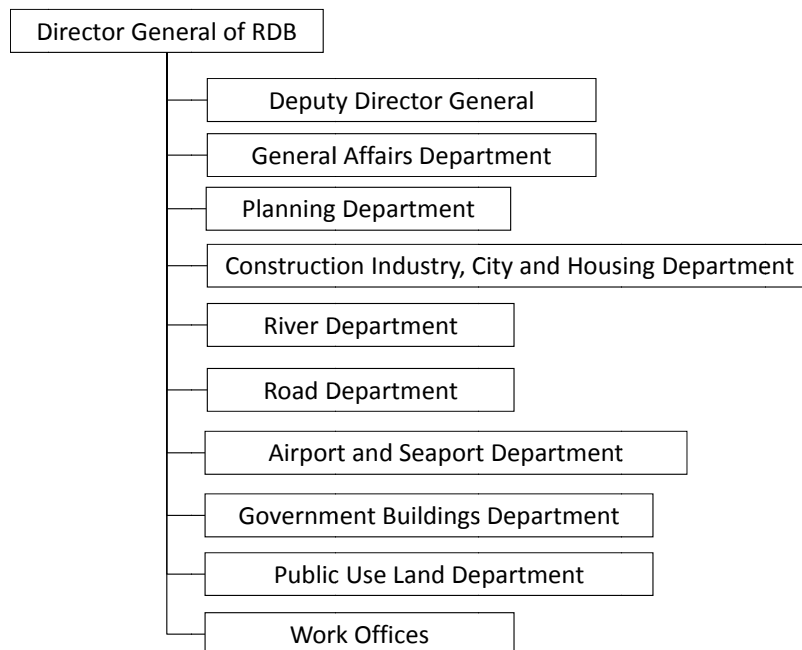
Work Offices

Road Department is in charge of road administration and it has several divisions under it. The following organization chart is shown in case of Road Department of Kanto RDB.

(4)   Work Office

Each regional development bureau has several work offices in the area of the bureau. Kanto RDB has 15 work offices in charge of road issues, of which 10 work offices are for both of road construction and road maintenance, other 5 work offices are for only road construction.
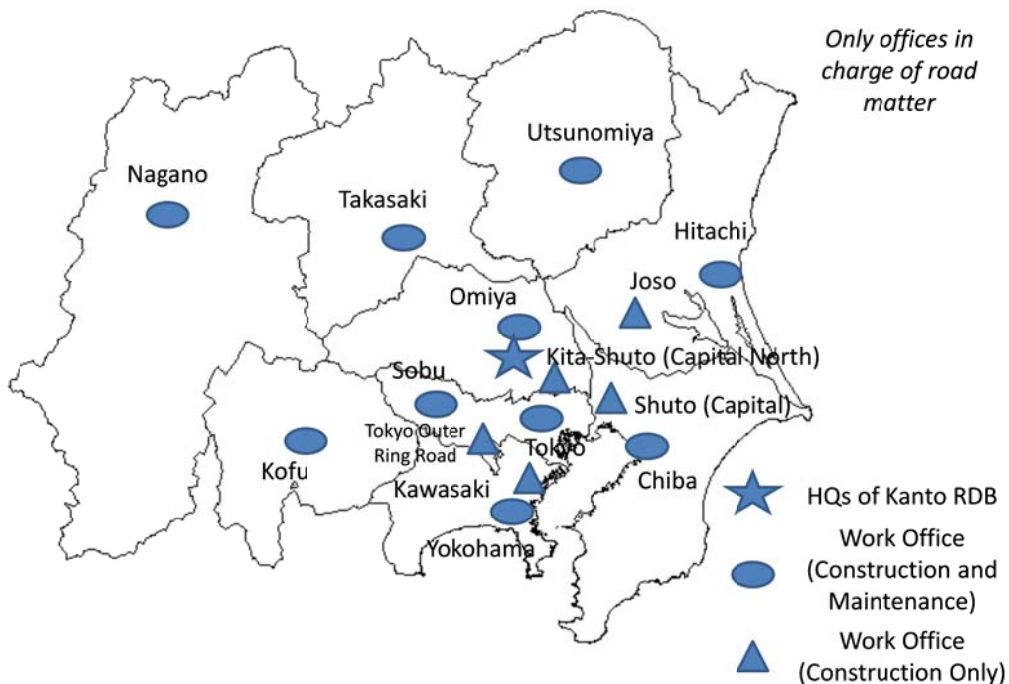
Work Offices are set up one number for one prefecture, Japanese upper-class-unit of local government. One example, organization chart of Hitachi River and National Highway Work Office under Kanto RDB is shown as follows.

```
Director General of WO
        ├── Deputy Director General (3)
        ├── Specialist in charge of special issues (9)
        ├── Dept. of General Affairs
        ├── Dept. of Account
        ├── Dept. of Land Acquisition for River Work
        ├── Dept. of Land Acquisition for  National Highway Work
        ├── Dept. of Construction for River Work
        ├── Dept. of Construction for National Highway Work
        ├── Dept. of Planning
        ├── Dept. of Quality Management
        ├── Dept. of Design and Survey for River Work
        ├── Dept. of Design and Survey for National Highway Work
        ├── Dept. of River Maintenance and Management
        ├── Dept. of Road Maintenance and Management (1) in charge of  Legal Administration issue
        ├── Dept. of Road Maintenance and Management (2) in charge of Technical issue including Traffic Safety issues
        ├── Dept. of Disaster Management
        ├── 5 Branch Offices in charge of River Maintenance and Management
        └── 5 Branch Offices in charge of National Highway Maintenance and Management
```

10) Branch Office

Further, Branch Office is established under each work office. The following is in case of Hitachi River and National Highway Work Office.

Branch Office	National HW No.	Length (km)
Mito	6	33.574
Tsuchiura	6	60.306
Hitachi	6	52.678
Iwase	50	57.914
Kashima	51	61.780
Total	-	308.356
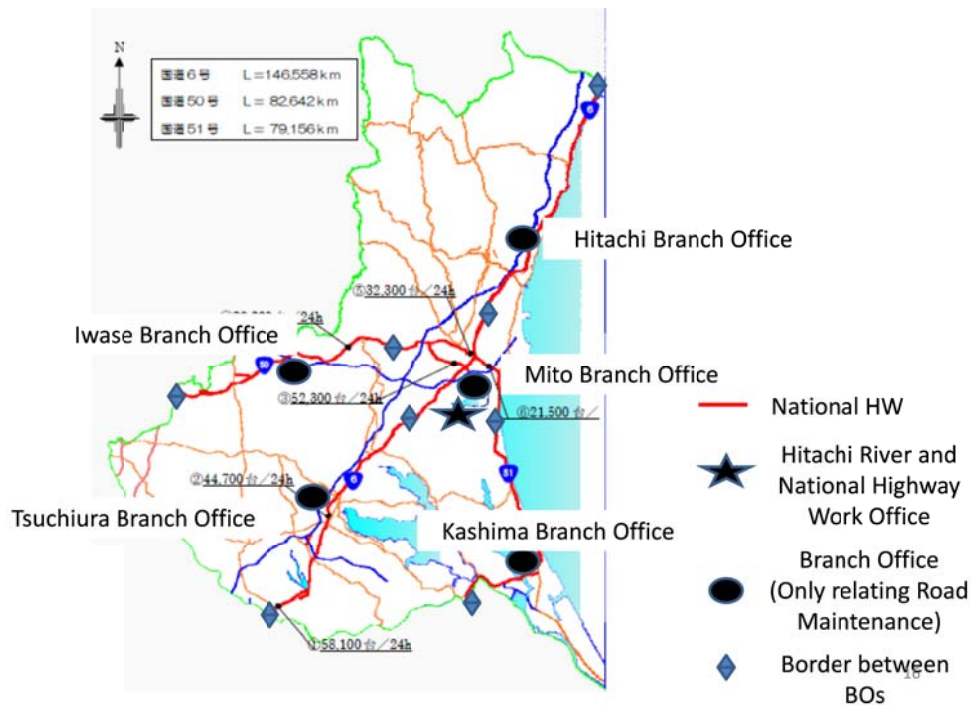
The following figure is an organization chart of a branch office in normal.
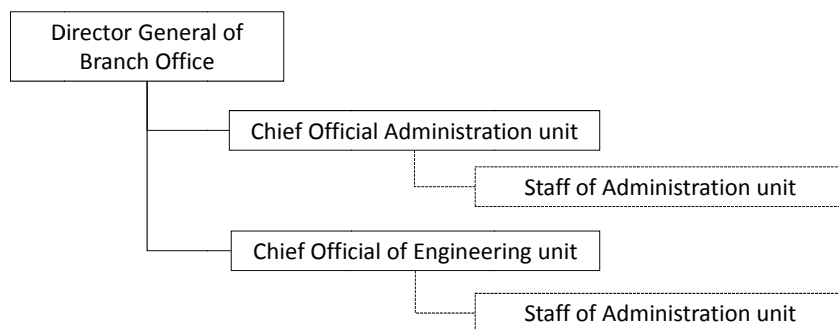
(REFERENCE) ORGANIZATION STRUCTURE OF TRAFFIC POLICE IN JAPAN

In Japan, there are two levels in police organization of Japan, namely central government level and local government level (prefectural level).

(1)   Central Government Level

There are two organizations in central governmental level police. One is National Public Security Commission, which is an administrative committee and established as an external bureau of Cabinet Office on the basis of Act for Establishment of Cabinet Office and Police Act. It consists of one chairperson and other five members.

Further under the commission, National Police Agency (NPA) is established as special organization of the commission, which its main duty is to supervise prefectural level police. Actual authority of implementation of police administration is given to NPA because National Public Security Commission exists in order to supervise police administration of being democratic and neutral from the macroscopic viewpoint.

NPA has internal bureaus including a commissioner-General's Secretariat, five internal bureaus and two departments; three affiliates. Also seven Regional Police Bureaus and two Departments of Info-Communication for Police are established by regions.

According to Clause23-2 of Police Act, Traffic Bureau is responsible for state management of Traffic Police.

According to Clause31 of Ordinance on Organization of National Police Agency, each division in Traffic Bureau is mainly responsible for following areas.

1)   Traffic Planning Division
- Planning of Institution and Operation
- General Issue on Traffic Accident Prevention
- General Arrangement inside Traffic Bureau
- Census of Road Traffic
- Traffic Safety Education and Awareness
- Supervision of Expressway Traffic Police Unit

2)   Traffic Enforcement Division
- Crackdown for Violation of Road Traffic Law
- Management of Traffic Accident and Investigation of Crime on Traffic Accident
- Restriction of Vehicles Use
- Management of Vehicles for Crackdown

3)   Traffic Management and Control Division
- Traffic Control
- Traffic Signal, Signboard, Marking and other Road Traffic Safety Facilities

● Traffic Safety Facilities Improvement Programme

● Act on Assurance of Car Parking Spaces and Other Matters

4) License Division

● Driving License and its Examination

● Driving License School

(2) Local Government Level

Every prefecture has Prefectural Public Security Commission which supervises Prefectural Police. Department of Traffic in it is in charge of traffic police. The following is a sample of organization structure of Department of Traffic in one prefectural police.

● Traffic Planning Division

● Traffic Enforcement Division

● Traffic Management and Control Division

● License Division

● Traffic Management Division

● Traffic Police Force

● Expressway Traffic Police Unit

(3) Relationship between Each Entity

The organizations in central level is responsible for drafting traffic act and other legal documents, management of census, state management of police activities, meanwhile organizations in local level is responsible for implementation of police administration.

Both of central level and local level, police organizations are supervised by the corresponding Public Security Commissions so that police which has very powerful authority should be kept in healthy condition by being supervised by stronger authority.

Also NPA has supervised Prefectural Police in terms of common framework shared with national level, coordination between plural prefectural police and so on.

In reality, some prefectural police in large city such as Metropolitan Police Department in Tokyo seems to be very powerful and the relationship between it and NPA is more equal than one in other sector.
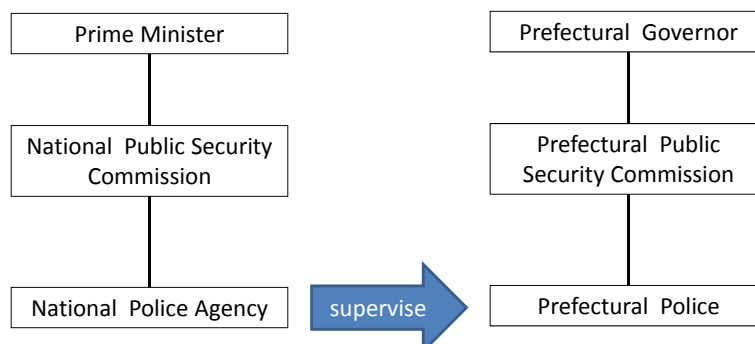
(REFERENCE) DISTRICT TRANSPORT BUREAU

(1) Outline

These bureaus are established based on Act for Establishment of the Ministry of Land, Infrastructure, Transport and Tourism as a regional level organization.

There are 10 District Transport Bureaus under MLIT nationwide and One District Transport Bureau under Okinawa General Bureau of Cabinet Office.

(2) Duty

Their duty is prescribed in relevant legal documents, however, actual main duty is as follows.

1) Road Transportation

a. Road Transportation in General
- Management of Public Bus Operators
- Subsidy for Public Bus Operators
- Measures for improvement of Public Bus Enterprises
- Management of Insurance for Vehicles
- Management of Rental Vehicle Enterprises
- Management of Taxi Enterprises
- Measures for improvement of Taxi Enterprises
- Management of Freight Transport
- Measures toward Efficient Freight Transport

b. Inspection of Road Transportation
- Inspection and Supervision of Public Bus and Taxi Enterprises
- Transportation Safety Management for Public Bus and Taxi Enterprises
- Inspection and Supervision of Freight Transport
- Transportation Safety Management for Freight Transport

c. Engineering and Safety Issues on Road Transportation
- Management of Registration of Vehicles
- Permission for Enterprises of Examination and Maintenance of Vehicles
- Measures against Illegal Remodeling
- Management of Examination and Maintenance of Vehicles
- Safety Standards for Vehicles
- Measures against Traffic Accident by Commercial Vehicles (Vehicle Operation Management, Vehicle Management)
- Environmental Measures for Exhausted Gas and Noise

2) Ship and Crew

a. Maritime Affairs
- Management of Passengers Boat Enterprises
- Management of Coastal Shipping Industries
- Management of Transportation in Port
- Permission for Shipbuilding Enterprises
- Management of Labor Issues on Crew

b. Maritime Safety and Environment
- Management of Registration on Ship
- Inspection of Facilities of Ship
- Management of Qualification for Crew
- Safety Inspection of Passengers Boat
- Transport Safety Management on Maritime Issue
- Safety Inspection of Ship
- Measurement of Weight of Ships
- Management of Foreign Ships

3) Rail Transport
- Management of Rail Transport Enterprises
- Survey for New Line and Improvement
- Inspection of Railway Facilities
- Inspection of Electric Facilities and Coaches
- Management of Operation
- Cooperation for Japan Transport Safety Board on Accident Investigation
- Safety Inspection of Rail Transport
- Transport Safety Management

4) Planning and General Issues

a. General Issues
- Budget Request, Contract, Implementation
- Asset Management
- Public Relations
- Risk and Disaster Management on Transport

b. Planning
- Transportation Policy Planning
- Promotion of Tourism
- Registration of Hotels
- Supervision of Tourism Enterprises

c. Transport Environment

- Promotion of Environmental Measures
- Management of Logistics Enterprises

(REFERENCE) PERSONNEL MANAGEMENT IN MLIT

Personnel Division is established under Minister's Secretariat as an official body to manage personnel issues in MLIT. However, in reality, several system exists with parallel manner.

(3)   High Rank Officials from Political Field

Minister is appointed by Prime Minister so that usually is a politician.

Senior Vice-Minister, Parliamentary Vice-Minister are appointed by the Cabinet with consideration of Minister's proposal so that usually are politicians.

(4)   Recruited by Head Office

In general, personnel in engineer field who were recruited by the head office tend to work for the same field (Road, River, Railway and so on) in both of head office and regional level offices. The representing division (In case of Road Bureau, it is Planning Division) is handling those personnel with close relationship with Engineering Affairs Division under Minister's Secretariat.

(5)   Recruited by Regional Development Bureaus

In general, personnel in engineer field who were recruited by regional development bureau tend to work for the same field inside the recruited development bureaus. The representing divisions (In case road field, it is Road Planning Division (1) under Road Department) is handling those personnel with close relationship with Planning Department of RDB.

A3.2 OVERVIEW OF ROAD MAINTENANCE OF NATIONAL HIGHWAY IN JAPAN

A3.2.1 Outline of Road Maintenance in Japan

(1) Levels of Road Network and Total Length

Total road length in Japan is approximately 1.2 million km as of April 2009, which are classified to different levels based on their roles and functions.

- Expressways: 7,642km (0.6%)
- National Highways: 54,790km (4.6%)
- Prefectural Roads: 129,337km (10.8%)
- Municipal Roads: 1,016,000km (84.0%)

Moreover, National Highways are divided into two classes. One is section managed by central government, which is recognized important from the viewpoint of transport served for wider area than each prefectural jurisdiction. Its total length is 22,900km. Another is section managed by prefectures, which total length is 31,900km.

It is designated by Cabinet Order on Designating Section of National Highways. In addition, all of National Highways in Hokkaido and Okinawa is managed by national government level because these regions are recognized less developed area compared with the other areas.

(2) Responsible Body for Road Maintenance in National Highways

Regarding national highways managed by central government, the following divisions / departments are mainly responsible body for road maintenance for each organization.

Level	Responsible Divisions/ Departments	Main Task on Road Maintenance
Ministry	National Highway and Risk Management Division under Road Bureau	- Drafting Legal Documents on Road Maintenance for Whole National Highways - Supervising RDBs - Drafting Budget Request for Whole National Highways
Regional Development Bureau	Road Maintenance and Management Division under Road Department	- Supervising Work Offices under their jurisdiction - Drafting Budget Request of their jurisdiction
Work Office	Department of Road Maintenance and Management	- Contract with Contractors - Drafting Budget Request of their jurisdiction
Branch Office	All staff	- Patrol by themselves - Supervision of Contractors

(3) Financial Demarcation between Central Government and Local Government

Even National Highways managed by Central Government, it is recognized that benefit of them is given not only national level but also corresponding local government jurisdiction. In that sense, cost for both of new construction and maintenance of National Highways is covered by corresponding local government. The following table is proportion of demarcation for some infrastructure projects.

Meanwhile, regarding National Highways managed by Local Government,

Each proportion is specified in Act of Road.

Table A2-2-1 Financial Demarcation between Central Government and Local Government in New Construction and Maintenance

Type of National Highway	New Construction	Maintenance
Central Government	- Central: 2/3 - Local: 1/3	Fully covered by Central Government
Local Government	- Central: 1/2 - Local: 1/2	(1) Maintenance except (2), (3) - Fully covered by Local Government (2) Rehabilitation - Subsidies from Central Government to Local Government up to 1/2 is possible. (3) Rehabilitation against damage by Natural Disaster - Central: 5.5/10 - Local: 4.5/10

Note: Herein, "Maintenance" means routine maintenance and minor repair. (Ex. Cleaning, Water Splaying, Grass Removal etc.) Meanwhile, "Rehabilitation" means major repair of damaged parts. (Ex. Overlay of Pavement etc.)

(4)   Difference of Management Level between Central Government Section and Local Government Section

The function of National Highways managed by Central Government is to formulate essential network to connect important places each other from the national viewpoint, which is apart from administrative jurisdiction of prefectures

Meanwhile, the function of National Highway managed by Local Government is to connect middle scale cities to the network of Central Government administrating National Highways, which is still a part of national level network.

The actual condition between two ones is usually different. For example, the frequency of patrol is i) Once per Two Days for Central Government administrating National Highways, ii) Once or Twice per One Week for Local Government administrating National Highways. Another example is that frequency of disaster occurrence in 2006 is i) 0.6 times per 1,000km for Central Government administrating National Highways, ii) 33.7 times per 1,000km for Local Government administrating National Highways.

(5)   Legal Documents

System of legal documents for maintenance of national highways in Japan is summarized as follows. For reference, legal documents for new construction of national highways are also shown.

Table A2.2-2 System of Legal Documents for Road Maintenance in Japan

Level of Document	Title of Document	Notes
Law	**Act of Road** **(Enacted in 1952)**	**[Regarding Maintenance]** **Chapter1, Clause42** **- Road Administrators shall maintain roads in good condition by daily maintenance and rehabilitation so as not to disturb traffic.** **Chapter2, Clause42** **- A technical guideline and other necessary issues on road maintenance and rehabilitation shall be enacted by cabinet orders.**
Cabinet Order	[For New Construction] Road Structure Ordinance (Enacted in 1970) **[For Maintenance]** **NONE**	
Ministerial Ordinance	[Accessories] Joint Ministerial Ordinance on Signboard, Carriageway Marking and Making by Cabinet office and MLIT (Enacted in 1960)	
Circular by Director General of Road Bureau of MLIT	[For New Construction] Many Circulars **[For Maintenance]** Circular stipulating **Managing Guideline for Road**	Basic policy on road maintenance and rehabilitation is described for

	Maintenance and Rehabilitation (Issued in 1958 and Amended in 1962)	2 pages.
Circular by Director of National Highway and Risk Management Division of Road Bureau, MLIT	[For New Construction] Many Circulars **[For Maintenance]** Circular stipulating **Guideline for Maintenance for National Highways managed by Central Government** (Issued in 2010, Amended in 2011)	Basic ideas on road maintenance for national highways managed by central government are described for 6 pages. Some numerical criteria such as frequency of patrol is also mentioned
Guideline published by Japan Road Association	[For New Construction] Many Guidelines by types of Structures **[For Maintenance] Guidelines of Road Maintenance and Rehabilitation** (Published in 1978)	Detailed Guideline for 361 Pages. Available in bookstores for Public.

In spite of mentioning in Road Act that a technical guideline on road maintenance and rehabilitation shall be enacted by cabinet orders, there is still none of such documents. The reasons are as follows according to the discussion in National Assembly.

- Problems technically unsolved on road maintenance are still much volume, therefore a detailed guideline with numerical criteria is difficult to make.
- Needs of people on road maintenance is always changing according to transforming of road use style, therefore it is suitable in case of dealing with upgrading it to take more flexible way by a circular by Director General of Road Bureau, MLIT than by a cabinet order.
- It is difficult to establish unified guideline for nationwide in order to consider various conditions of road, traffic, topography, climates and so on.

Not only the documents above mentioned but also many other documents on technical specific issues such as Guideline for Periodic Inspection Manual of Bridge are issued and have been used by road administrators.

A3.2.2 Actual Road Maintenance Work of National Highways

(1) Contents of Road Maintenance Work and Demarcation between Organizations

At present, Work Offices follow the Guideline for Maintenance for National Highways managed by Central Government which was issued in 2010 and amended in 2011 for implementing road maintenance work which has 17 work items. The guideline does not mention any ideas on the functional demarcation between the organizations so that the Work Offices can

decide how to implement these works by themselves, however, normal demarcation by work items is as follows.

a. Patrol

Both Branch Offices' Staff and Road Construction and Maintenance Companies

b. Road Cleaning

Road Construction and Maintenance Companies

c. Grass Removal

Road Construction and Maintenance Companies

d. Cutting Tree

Road Construction and Maintenance Companies

e. Checking Machinery

Machinery Maintenance Companies

f. Maintenance of Road Light

Machinery Maintenance Companies

g. Snow Removal

Road Construction and Maintenance Companies

h. Checking Bridges, Tunnels etc.

Construction Consultant Companies

i. Rehabilitation of Bridges

Road Construction and Maintenance Companies

j. Rehabilitation of Tunnels

Road Construction and Maintenance Companies

k. Rehabilitation of Pavement

Road Construction and Maintenance Companies

l. Countermeasure Works against Disaster

Road Construction and Maintenance Companies

m. Seismic Strengthening of Bridges

Road Construction and Maintenance Companies

n. Countermeasures against Snow (Replacement of Snow-Melting Machine)

Machinery Companies

o. Countermeasures against Freezing

Road Construction and Maintenance Companies

p. Countermeasures against Traffic Accidents etc.

Both Branch Offices' Staff and Road Construction and Maintenance Companies

q. Planning on Road Maintenance

Regional Development Bureaus

Method of contract can be chosen by each Work Office itself, however, in general item (a) to (d) and (p) tend to be merged into one contract for routine road maintenance. Other items except (q) are implemented by separate contracts.

(2) Procedure of Routine Road Maintenance

1) Contract

In normal, every Work Office makes an annual contract for routine road maintenance with one construction and maintenance company in the beginning of every fiscal year. Because it takes a couple of months to complete bidding process, preparation of bidding is started so as that contract is made in the first date of fiscal year, nevertheless budget is not officially available in the previous fiscal year. If the contract fails to begin in the first date of fiscal year due to some reasons, branch offices' staff is requested to do the works by themselves with their own vehicles and simple tools for routine road maintenance.

There is no special provision on contracts for routine road maintenance. Recently, open tendering has been applied for all of the contracts for routine road maintenance. In addition, in order to keep certain quality of works, a special method called "Comprehensive Evaluation Bidding Method" is introduced not only for routine road maintenance but also for other infrastructure construction works. By this method bidding price and technical assessment result are evaluated integrally using some formulas at the same time. According to Ordinance of Budget, Auditing and Accounting, there are three types of bidding/contract method, namely "Open tendering", "Limited Competitive bidding" and "Direct Appointment". This method is categorized in "Open- Tendering".

2) Reporting

There is no official framework between governmental agencies each other.

Meanwhile reporting from contractors to order in normal Work Offices, is a must following the contract documents. Types of reports are divided into two categories, namely one is reports on

routine reports etc. to supervising officials in Branch Office under Work Office during contract term; the another is reports on whole activities under the contract to Work Office. The detail is as follows.

- Patrol Diary must be submitted to supervising officials after doing patrol. Also it must be informed to supervising officials by telephone etc. immediately when very urgent issues happen during patrol.
- Certification of material or material tests must be submitted to supervising officials.
- Final report must be submitted to Work Office at the termination of the contract.

3) Payment

There is no special provision on payment for contracts of routine road maintenance. In general, payment for the contract is done at the termination of contract, namely the end of fiscal year, although pre-payment up to 4/10 and middle-payment up to 2/10 of total contract price is legally allowed. If some additional tasks are inserted to the contract by some reasons, payment amount can be more than the originally contracted price. Each work office has authorities to utilize the allocated budget for the expenditure which is less than certain amount (it depends on types of work) without any official permissions by the upper agencies so that they can manage to pay much more amount than original contract.

4) Qualification of Contractors

There are no official rules on qualifications of contractors, therefore its mandatory is decided by each Work Office. However, in reality, Regional Development Bureau controls how to describe it so as to be same inside their jurisdiction. The sample of main qualification for candidate contractors is shown as follows.

- To obtain Qualification of Open Tendering for Maintenance Works
- To have at least One Experience of Same Kind Works in Recent Ten Years (In this case, Road Maintenance Work with Traffic Enforcement on Operated Roads with more than Two Lanes and which continues more than 150days.)
- To be capable to assign a Qualified Engineer (described in 5))
- To obtain more than 65 Points in average on Works Records in Recent Two Years
- To have Main Office or Branch Offices in jurisdiction of the Work Office

5) Qualification of Staff of Contractors

a. Managing Engineer and Chief Engineer

Some common rules for all construction works determined by Construction Business Act are applied also for routine road maintenance work. This Act has requested construction firms to assign a Managing Engineer in case of construction works which are more than 30 million Japanese Yen OR a Chief Engineer for all construction works except the ones above mentioned. The assigned Managing Engineers and Chief Engineer are requested to dedicate themselves to the contract for full term basis.

Those who have concerning national qualifications such as "First Class Engineer for Civil Engineering" are possible to obtain a registration certificate of Managing Engineer from Construction Industry Engineering Centre. Meanwhile, those who have concerning national qualifications such as "Second Class Engineer for Civil Engineering" or certain operational experiences are possible to be a Chief Engineer.

b. Traffic Controller

If traffic control such as forcing drivers to detour at construction sites is required, traffic controllers are necessary to be assigned to keep safety. There are no official rules on qualifications of traffic controller for construction works, therefore its mandatory is described in each TOR of contracts. Some TOR for routine road maintenance requests that mandate of traffic controllers is to pass the examination on Guards by prefectural public security commissions based on Security Service Act.

6) Patroller

There are no official rules on qualifications of patroller, therefore its mandatory is described in each TOR of contracts. Some TOR for routine road maintenance requests any of the following qualifications for patrollers.

- Professional Engineer (National Qualification)
- First Class Engineer for Civil Engineering OR Second Class Engineer for Civil Engineering (National Qualification)
- Executive Professional Civil Engineers (Registered at Japan Society of Civil Engineers (JSCE)), Senior Professional Civil Engineers (JSCE), Professional Civil Engineers (JSCE)
- RCCM (Registered Civil Engineering Consulting Manager) (Registered at Japan Civil Engineering Consultants Association)
- More than One-Year Experiences in Road Watching Staff (appointed from Work Office staff)
- More than 25-Years Experiences in Road or River Engineering Administration
- More than One-Year Experiences in Patrol Work, Facility Inspection Work and Road Maintenance Work

7) Driver

Drivers are requested not only driving but also assisting the tasks of patrollers. There are no official rules on qualifications of drivers, therefore its mandatory is described in each TOR of contracts. Some TOR for routine road maintenance requests to satisfy both of the following two requirements.

- Obtain and Maintain Driving License for Normal Vehicles for more than 3 Years
- Less than 65 Years Old

A3.3 CASE STUDY ON INSTITUTIONAL ARRANGEMENT FOR COUNTERMEASURES OF DISASTER REHABILITATION IN JAPAN

A3.3.1 Outline

Many developing countries have faced difficulties on procurement and contract for disaster rehabilitation work, reportedly.

Many experts in Japan who have work experiences in developing countries have pointed out that two systems operated in Japan might be useful also for developing countries, namely i) Pre-arranged agreement between road administrators and private contractors, ii) Disaster Assessment System.

A3.3.2 Pre-Arranged Agreement between Road Administrators and Private Contractors on Urgent Countermeasures against Disaster

In Japan, some Work Offices for National Highways and private contractors (or association of contractors in the regional level) in their jurisdictions sign a contract on the cooperation for countermeasures of disaster rehabilitation in advance. Once something to be rehabilitated on national highway occurs, Work Offices immediately request the counterpart contractors to deal with it quickly based on the pre-signed agreement.

(1) Purpose of Agreement

The agreement is to prevent the spreading damage and affecting facilities under management by Work Offices in case a disaster occurs or may occur. The Work Offices call on private contractors in their jurisdiction in advance to ask cooperation in case emergent situation happens.

(2) Description of Tasks

[Depend on Work Office; The followings are just sample.]
- Emergency Patrol (Identification of damage and Reporting)
- Emergency Treatment (Installation of barricades to ensure safety of road users)
- Open Road (Removal and moving of obstacles to ensure passage of emergency vehicles)
- Restoration (Restoration to recover the function of important roads for emergent traffic)
- Emergency Drill (Drill of information transmission and operation of equipment for disaster measure)

(3) Sections of Agreement

[Depend on Work Office; The following is a just sample.]

Total number of sections is Eight. Out of them,
- National Highway No. X: Four sections
- National Highway No. Y: Two sections

● National Highway No. Z: Two sections

(4)   Number of Companies under Agreement

[Depend on Work Office; The following is a just sample.]

Three companies for each section (Total 24 companies)

(5)   Agreement Period

[Depend on Work Office; The following is a just sample.]

From 1st April, 2012 to 31st March, 2015 (Three years)

(6)   Conditions of Applicants

[Depend on Work Office; The followings are just sample.]

● To be a qualified contractor for general civil engineering work, maintenance work or asphalt pavement work
● To have its head office or branch office inside jurisdiction of the Work Office
● To have its material storage within 30km from the section of agreement
● To have contract experiences over Japanese Yen 60 million on general civil engineering work, maintenance work or asphalt pavement work in these 15years inside jurisdiction of the Work Office.

(7)   Schedule of Contractor's Selection

[Depend on Work Office]

● Terms of expressing interest: In February
● Notification of Result of Selection: Mid of March

(8)   Payment

After a disaster countermeasure is necessary to be implemented, contract with direct appointment is concluded immediately. The procedure of payment follows the ordinary contracts.

A3.3.3   Disaster Assessment System

(1)   Purpose of System

The system is introduced in order that public facilities which are damaged by natural disasters should be rehabilitated with quick and secure manner. Concretely, this system is to support local governments based on "Act on National Treasury's Sharing of Expenses for Project to Recover Public Civil Engineering Works Damaged by Disaster" because the cost for disaster rehabilitation is usually unexpected and huge for local governments.

(2)   Features of System

a. Covering Many Kind of Public Facilities

River, Coast, Erosion Control Facilities, Forest Deterioration Preventing Facilities, Landslide Preventing Facilities, Steep Slope Collapse Preventing Facilities, Road, Sea Port, Fishing Port, Sewage and Park

b. High Ratio Subsidies from Central Government

Central Government bears 2/3 of total cost.

c. Quick and Secure Budget Allocation
- The budget is immediately allocated. It is not necessary to wait the budget request procedure in the following year.
- The assessment of disaster can be implemented just after the local governments finish the preparation for the assessment. In addition, the assessment is done by the qualified engineers of central government.
- The budget for rehabilitation is securely allocated by the assessment of disaster.

d. Quick Implementation of Work
- Works can be commenced immediately after disasters and by the judge of local governments even before the assessment of disaster.

(3) Appropriate Countermeasures can be taken although recovery to the original form is in principle.

- Upgrading of shape, material, size, structure etc. is allowed in case recovery to the original form is not appropriate or difficult.

(Example)
- In case a road section was washed away or blockaded by landslide, the road section may be recovered as a new route by the allocated budget.
- In case a wooden bridge was washed away by flood, the new concrete bridge may be constructed at the same location by the allocated budget.

8) Budget Allocation
- Expenses for works damaged by disasters can be allocated at one time by year and by prefecture as for River, Coast, Erosion Control Facilities, Landslide Preventing Facilities, Steep Slope Collapse Preventing Facilities and Road.

A3.4 CASE STUDY OF ROAD ADMINISTRATION SYSTEM OVERSEAS

A3.4.1 Introductions

This document is to introduce the organization systems in road administration, particularly in road management and maintenance of overseas.

A3.4.2 Case Study

(1) Indonesia

Directorate for Highway belongs to Ministry of Public Works. The construction and maintenance of national highways in rural areas is conducted by the ten 10 Divisions of Roads and Bridges countrywide.
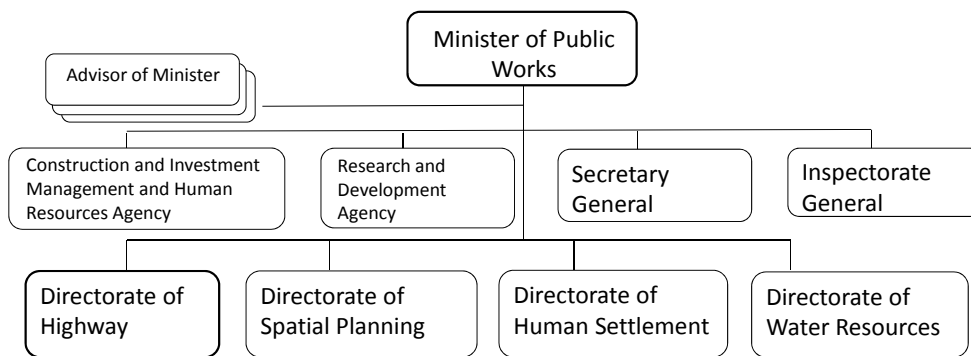
Figure A2.4-1 Organization Chart of Ministry of Public Works in Indonesia
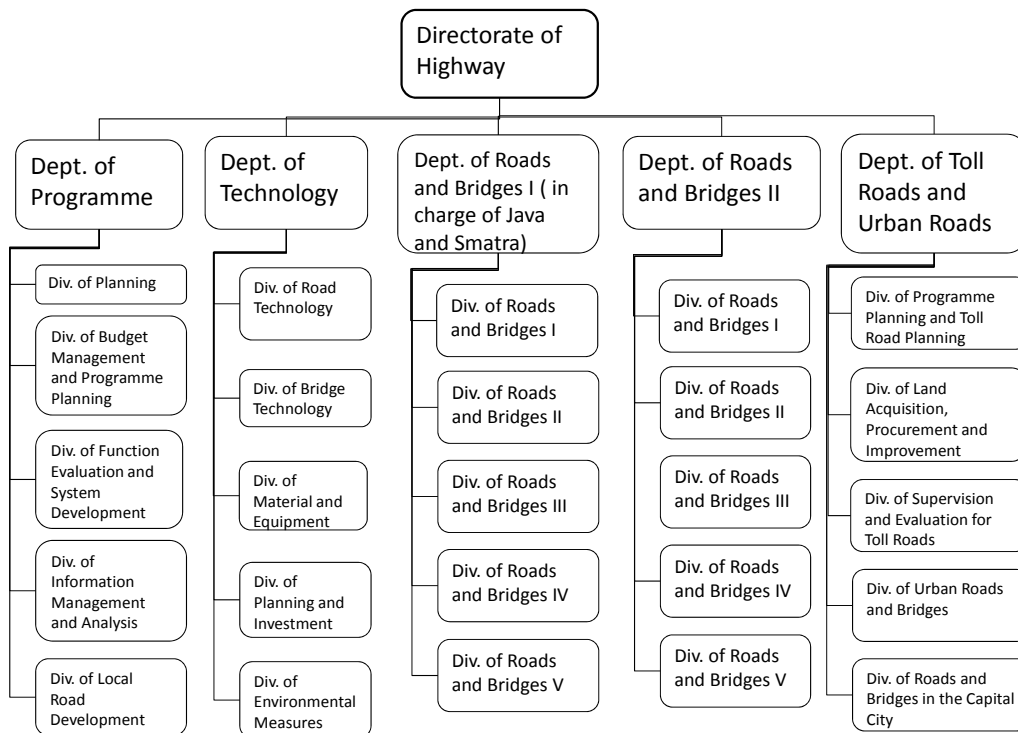
Figure A2.4-2 Organization Chart of Directorate of Highway in Indonesia

(2)   The Philippines

Department of Public Works and Highways is in charge of infrastructure development such as roads, sea ports, rivers, urban infrastructure etc. in the government.

The construction and maintenance of road is managed by 16 regional administration offices.
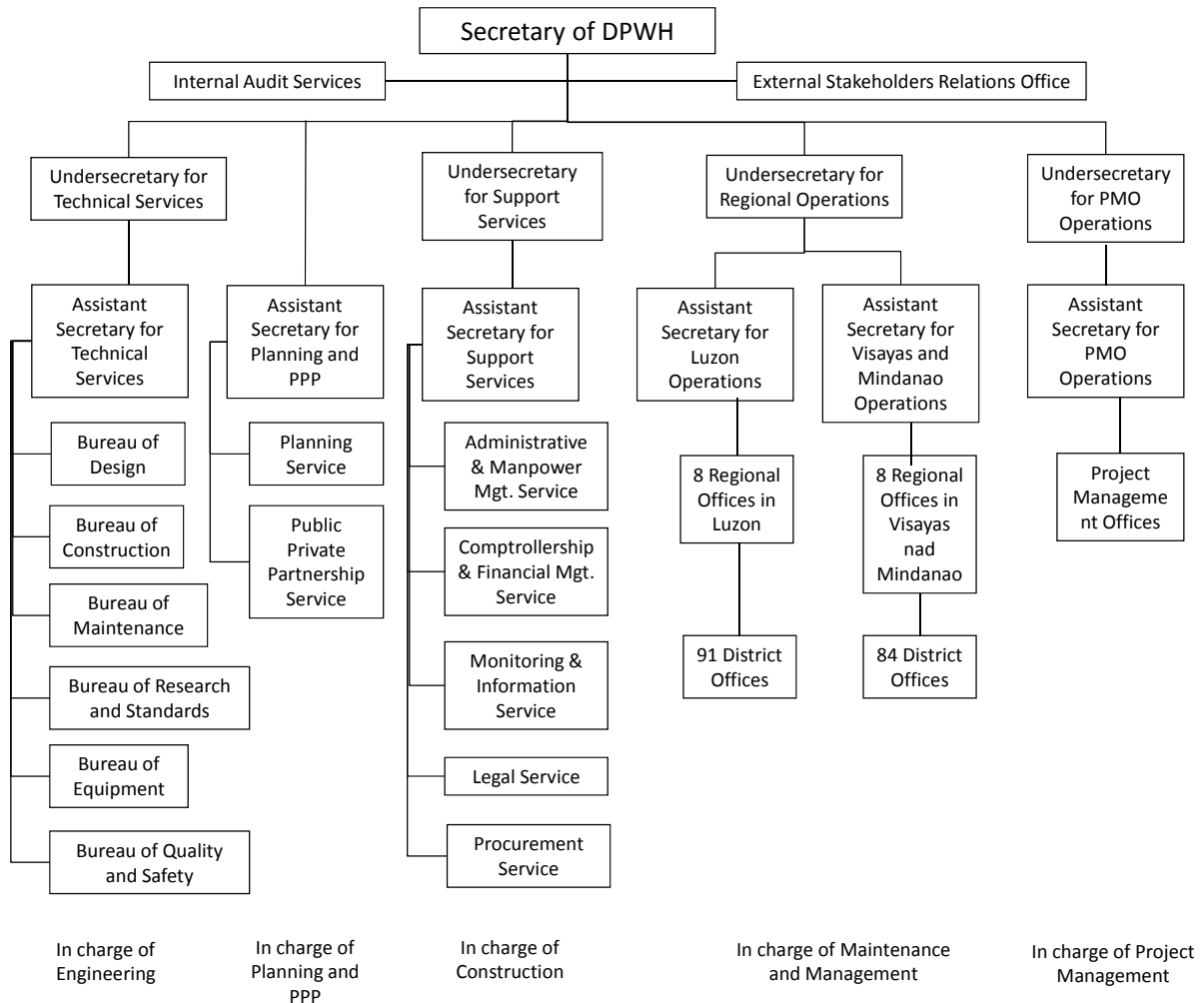
Figure A2.4-3 Organization Chart of Department of Public Works and Highways in the Philippines

(3)   India

Construction and maintenance of National Highway is done by National Highway Authority of India (NHAI), meanwhile construction and maintenance of the roads of state or lower level is done by the corresponding local government such as each state. Moreover, national highways in the frontier area are constructed and managed by Border Road Organization under Ministry of Defense.
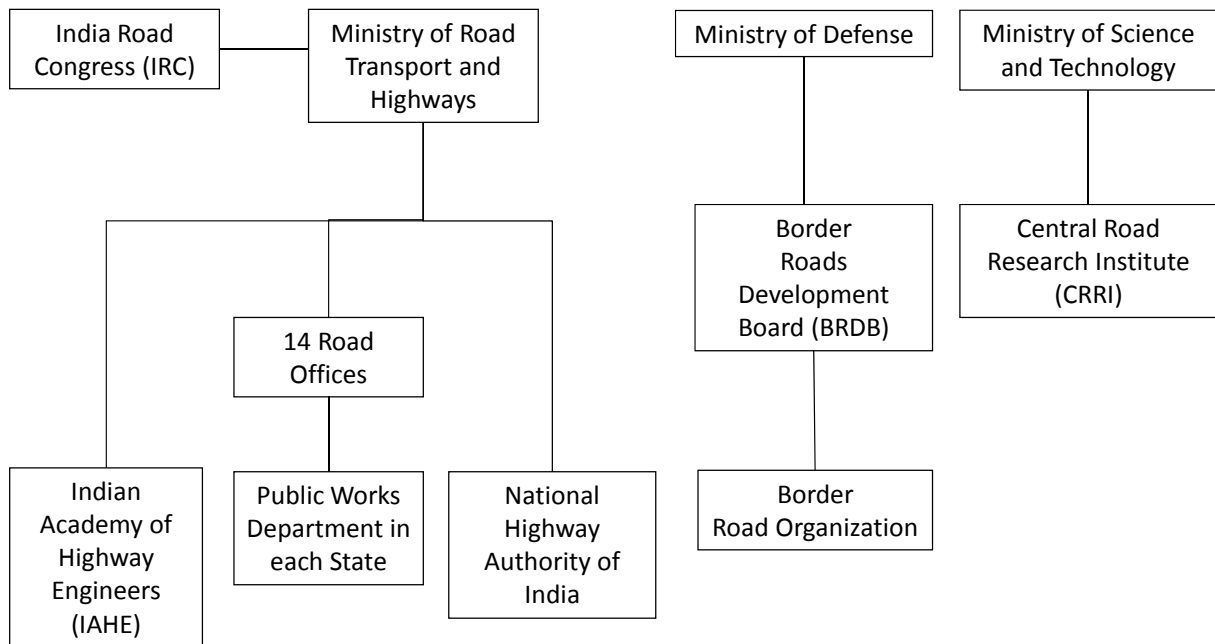
* IRC is in charge of issuing the standards concerning roads.

** IAHE is in charge of training on highway engineering for staff of central and local governments.

*** CRRI is in charge of research and development on road technology.

Figure A2.4-4 Organization Chart of Organizations in India

(4)   Thailand
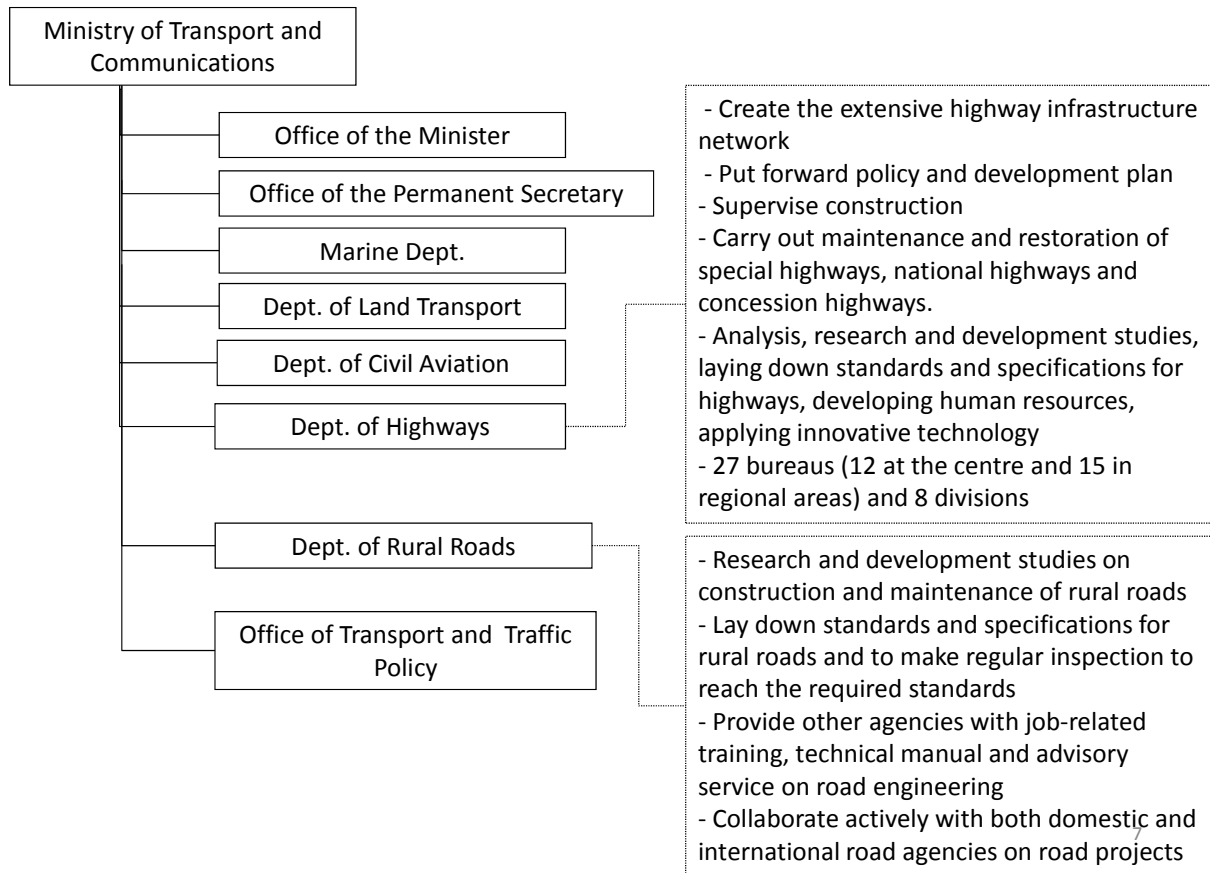
Figure A2.4-5 Organization Chart of Ministry of Transport and Communications in Thailand

(5)   UK

Highways Agency		
	Chief Executive	
	Network Delivery and Development Board	Network Delivery and Development Central Div.
		Yorkshire and North East Div.
		North West Div.
		East Div.
		East Midlands Div.
		West Midlands Div.
		South West Div.
		South East Div.
		Olympic and Planning Related Projects Div.
		Traffic Technology Div.
	Major Projects Board	Programme Services Group Div.
		Commercial Div.
		MP south Div.
		MP Midlands and South West Div.
		MP North Div.
		Strategy Implementation Div.
	Traffic Management Board	Yorkshire and North East Div.
		North West Div.
		East Div.
		East Midlands Div.
		West Midlands Div.
		South West Div.
		South East Div.
		Traffic Management Information and Training Div.
		Operations Support and Development Div.
	Network Services Board	Lean Div.
		Planning and Performance Management Div.
		Highways Agency Board Secretariat
		National Health and Safety Div.
		Network Planning and Performance Div.
		Research and Operational Guidance Div.
		Technical Services Div.
		Procurement Div.
	Business Services Board	Human Resource Div.
		Organizational Development Div.
		Communications Div.
		Customer Relations Group
		ICT Solutions Div.
		Strategy and Planning Div.
		Property and Facilities Management Div.
		Learning Chance Projects Div.
	Finance Services Board	Financial Control Div.
		Major Projects Div.
		Network Delivery and Development Finance Div.
		Strategic Directorate of Finance Management
		Audit Inspection and Consultancy Div.

Figure A2.4-6   Organization Chart of Highway Agency in UK

APPENDIX - A4: TRAINING IMPLEMENTED DURING PROJECT TERM

A4.1 CURRENT TRAINING AT ROAD MIANTENCE AGENCIES IN VIETNAM

Trainings provided to DRVN, RRMU II and RTC-Central are summarized in following tables.

- Table 4.1.1 Training at DRVN
- Table 4.1.2 Training at RRMU II
- Table 4.1.3 Training at RTC Central

Table 4.1.1 Training at DRVN

No	Name Of Course	Decision	Category	Type	Date	Duration	Frequency	Method	Target Org.	Target Dep.	Target Ranks	Participant No	Material	Qualification	Venue	Trainer	Implementing Org.	Responsible Org.	Funding Source
1	Training for RoSy				19-22 Sep. 2005	4 days			VRA, RRMUs, PMU			14			Ha Noi		ISDP ADB		ISDP ADB
2	Training for HDM4				22-23 Sep. 2005	1.5 days			VRA, RRMUs, PMU			14			Ha Noi		ISDP ADB		ISDP ADB
3	Training for RoSy				27 Nov.2006	1 day			MOT, VRA, RRMUs, PDOTs, RTCs, RRMCs, PRRMCs			129			Ha Noi		SAPI JBIC		SAPI JBIC
4	Training for HDM4				12 Feb.2009	1 day			MOT, VRA, RRMUs, PMU			39			Ha Noi		SAPI JBIC		SAPI JBIC
5	Road Traffic Safety Examiner Class I	Decision No.1291/QD-T CDBVN	Road safety	professional skill	Sep, Oct 2009 / Mar, Apr 2010		6 times total	lecture	ITST/DRVN/Road &Railway police administration/ Traffic safety PMU/ RTC/TDSI/PDOTs/R RMUs			103	Material prepared by Consia Consultant and approved by MOT	Road traffic safety examiner Class I	Ha Noi, Hai Phong Da Nang- HCM city, Can Tho	Professor Phan Vi Thuy Consia Consultant Ma. Vu Sy Quy	Cooperation among Traffic safety project, Consia Consultant and DRVN (Infrastructure& Traffic Safety Dept)		WB
6	Road Traffic Safety Examiner Class II	Decision No. 103/QD-TCDB VN	Road safety	professional skill	16-27 Aug. 2010 (Course 1) 06-17 Sep.2010 (Course 2)		2 times total	lecture	RRTPA, RRMUs, PDOTs, RTCs, DRVN,			27 in course 1 and 26 in course 2	Material prepared by Consia Consultant and approved by MOT	Road traffic safety examiner Class 3	Ha Noi, HCM city	Professor Phan Vi Thuy Consia Consultant Ma. Vu Sy Quy	Cooperation among Traffic safety project, Consia Consultant and DRVN (Infrastructure& Traffic Safety Dept)		WB
7	Road traffic safety propaganda	No. 2910/TCDBVN -TCCB	Road traffic safety		Aug. 2011	2 days	1 time	Skill training	DRVN and other	Infrastructure and Road safety Dept (DRVN)	Official	1	Provided by implementing organization		Ha Noi	International trainer	National traffic safety committee	National traffic safety committee	WB loan
8	Cost appraisal (audit), supervision Consultant and Project management training	1021/ QT-TSPMU dated October 2011	Project management and appraisal		15Oct. to Nov.15th 2011	1 months in the evening	1 time for each course	lecture	DRVN and other	TSPMU, Planning and investment Dept- MOT, NTSC, RRTPA, TCQM- MOT, DRVN	Director, Deputy Director and officials/ Engineers	21 in cost appraisal course 21 in Supervision consultant course 31 in project management course	Provided by implementing organization	Certificate	Ha Noi	Vietnamese trainer (Training Consultant)	National traffic safety committee	National traffic safety committee	WB loan
9	Training program and technology transfer of Can Tho Bridge	Decision No. 2768/QD-BGT VT dated September 11th 2007 Decision No. 1659/QD-TCD BVN Decision No. 1660/QD-TCD BVN	Maintenance of cable strayed bridge	professional skill	Oct 2010 – Dec 2010		1 time	Seminar	DRVN/My Thuan PMU /ITST/TEDI/UTC/TC QM	Science & Technology Dept/ Planning & Investment Road management and maintenance Dept and other	Engineer	Total 30 (DRVN: 4)	Standard, manuals giving guidance on management, maintenance and operation	Certificate	Vietnam and Japan	CTI Engineering, Chodai, Professors from Universities in Japan, Central Nippon Expressway Co., Ltd	My Thuan PMU / CTIE-NEXCO Central CHODAI and others , Please refer to attachment	PMU	JICA loan
10	Workshop on pavement recycling	1.Sakai: Recommendation from leader of DRVN	New technology and material	professional skill	1.Sakai-VIETRACO/ 2008		1 time	Workshops	DRVN, RRMUs, RRMCs under RRMU 2&4, ITST, some PDOTs	No information	No information	50	Handout	No certification	DRVN office (Sakai)	Sakai- Experts of Sakai	Cooperation between DRVN (Road Management and Maintenance Dep-DRVN)	No information	Sakai
		2. Hall Brother/ 2009: MOT organized workshop			2.Hall Brother/ 2009		1 time								MOT (Hall brother)	Hall Brother experts	Coperation between Hall Brother and MOT	No information	Hall Brothers

No	Name Of Course	Decision	Category	Type	Date	Duration	Frequency	Method	Target Org.	Target Dep.	Target Ranks	Participant No	Material	Qualification	Venue	Trainer	Implementing Org.	Responsible Org.	Funding Source
11	Application of material and construction technology, installation of countersunk expansion joint for road bridge	Application on workshop organization	New material and technology		23Jun. 2011	1/2 day	1 time	Workshop	MOT, DRVN	No information	No information	90 (tentative)	Handout	No certification	DRVN	ASIA Pacific PTE LTD	DRVN and ASIA Pacific PTE LTD	DRVN	ASIA Pacific PTE LTD
12	Introduction of carbon asphalt material and construction technology in construction and repair of road pavement structure	Application No. 130/TTr=KHCN, MT, HTQT	New material and technology		23 Aug. 2011	1/2 day	1 time	Workshop	DRVN, ITST, Road and Bridge Association	DRVN (bureau, departments, PMUs, RRMUs, RTCs, schools, RRMCs), ITST, Road and Bridge Association	No information	130 (tentative)	Handout	No qualification	DRVN	CARBON Vietnam JSC	DRVN and CARBON Vietnam JSC	DRVN	CARBON Vietnam JSC
13	Professional skill on bidding			Course							Relevant staff			Certificate			Foreign trade university		
14	advanced political theory		political theory				Annual depending on demand and budget							Consideration of demand, standard on staff and budget			HCM national academy of politics and public administration		
15	Training on upgrading professional grade																		
16	Professional skill on bidding			Course							Relevant staff			Certificate			Foreign trade university		
17	Development of national implementation plan	Decision No. 1198/QD-TCD BVN , August 05th 2011	Planning		28 Aug. to 23 Sep. 2011	1 month	1 time	lectures	DRVN and other (unknown)	Science & Technology & International Cooperation and Environment Dept	Official	1	Provided by implementing organization	No information	Japan	Japanese	JICA and MPI	JICA and MPI	JICA
18	Comprehensive Bridge engineering	Decision 2034/QD-BGT VT dated September 14th 2011	Road and bridge construction	professional skill	25 Sep. to 29 Oct. 2011		1 time	Seminars	DRVN and other (unknown)	Road construction management bureau	Deputy Director	1	Provided by implementing organization	No information	Japan	Japanese	JICA and MPI	JICA and MPI	JICA
19	Pavement repair technology	Decision No. 1639/QD-TCD BVN	Road management and maintenance		Oct. 2011 (3 days)	3 days	1 time	Study	DRVN and other (unknown)	Road management and maintenance Dept	Official	1	Provided by implementing organization	No certification	Shanghai, china	Hall Brother international company	Hall Brother international company	Hall Brother international company	Hall Brother international company

No	Name Of Course	Decision	Category	Type	Date	Duration	Frequency	Method	Target Org.	Target Dep.	Target Ranks	Participant No	Material	Qualification	Venue	Trainer	Implementing Org.	Responsible Org.	Funding Source
20	Traffic safety	Decision No. 1364/QD-TCDBVN dated August 04th 2010	Road transport safety		25 Sep. to 2 Oct. 2010		1 time	Seminars	DRVN and other (unknown)	Infrastructure and Road safety Dept (DRVN) and other (unkown)	Official	1	Provided by implementing organization	No information	England, Denmark	English, Denmark	TSPMU, National traffic safety committee (VN side)	TSPMU, National traffic safety committee (VN side)	JICA loan
21	Administration reform and public service	Correspondence No. 3404/TCDBVN – TCCB dated November 18th 2010	Administration management		29 Nov. 2010 to 10 Dec. 2010		1 time	Seminars	DRVN and other (unknown)	Organization and Personnel Dept	Director	1	Provided by the trainer	Certificate	Korea	Korean	Vietnam side: MOT	Vietnam side: MOT and Program 165	Budget for training 2010
22	Transport planning and development	Correspondence No. 2275/TCDBVN -TCCB dated September 06th 2010	Road transport development		16 Oct. 2010 to 31 Oct. 2010		1 time	Study	DRVN and other (unknown)	Road management and maintenance Dept	Director	1	Provided by the trainer	No information	France	French	Vietnam side: MOT and Program 165	Vietnam side: MOT and Program 165	State budget
23	Urban management	Correspondence No. 3272/ TCDBVN-TCCB dated November 11th 2010	Road traffic safety		04 Dec. 2010 to 18 Dec. 2010		1 time	Study	DRVN and other (unknown)	Infrastructure and Road safety Dept (DRVN)	Director	1	Provided by the trainer	No information	Dresden city – Federal Republic of Germany	German	Ministry of Construction and German couterparts	MOC	State budget
24	English Course	Decision No. 776/QD-BGTVT	English	administration/management	04Apr. 2011 to 03 Jul. 2011	3 months	1 time	Class	DRVN, Traffic Safety PMU	Road construction management bureau, Project management dept- TSPMU	Deputy Director	2	Textbook	qualification	Hai Phong	No information	Program 165 , training center (unknown)	Program 165 , training center	State budget
25	English Course	Decision 2690/QD-BGTVT	English	administration/management	16 Sep. to 20 Dec. 2010	3 months	1 time	Class	DRVN, MOT	Financing Dept (DRVN), Inspection Dept (MOT)	Director and Deputy Director	2	Textbook	qualification	Hai Phong	No information	Program 165 , training center (unknown)	Program 165 , training center	State budget
26	State Administration Management		State Administration	administration/management		2-4 months	Annual depending on demand and budget				Expert to senior experts	Consideration of demand, standard on staff and budget					Institute for Transport administration and management cadres (belong to MOT)		

Table 4.1.2 Training at RRMU II

No	Name Of Course	Decision	Category	Type	Date	Duration	Frequency	Method	Target Org.	Target Dep.	Target Ranks	Participant No	Material	Qualification	Venue	Trainer	Implementing Org.	Responsible Org.	Funding Source
1	Training for RoSy				19-22 Sep. 2005	4 days			VRA, RRMUs, PMU			14			Ha Noi		ISDP ADB		ISDP ADB
2	Training for HDM4				22-23 Sep. 2005	1.5 days			VRA, RRMUs, PMU			14			Ha Noi		ISDP ADB		ISDP ADB
3	Training for RoSy				27 Nov.2006	1 day			MOT, VRA, RRMUs, PDOTs, RTCs, RRMCs, PRRMCs			129			Ha Noi		SAPI JBIC		SAPI JBIC
4	Training for HDM4				12 Feb.2009	1 day			MOT, VRA, RRMUs, PMU			39			Ha Noi		SAPI JBIC		SAPI JBIC
5	Professional skill training on construction investment project	Decision of MOEC - HN	construction investment	Course	19-31 May 2008		Demand base	OJT	RRMU-2		Engineer on bidding +supervision+ construction (at least 3 years of experience and staff preparing bidding document	32	MOC	Project management certificate	Hanoi , Office of RRMU 2	UCE,, Vietnam construction association, MPI	Organization and personnel department of RRMU-2 / VBRA	Organization and personnel dep.of RRMU-2	VBRA
6	Professional skill training on construction bidding	Decision of MOEC - HN	construction bidding	Course	19-31 May 2008		Depending demand, not periodic	OJT	RRMU-2			32	MOC	Construction project bidding certificate	Hanoi , Office of RRMU 2	UCE, Vietnam construction association MPI	Organization and personnel dep.t of RRMU-2 / VBRA	Organization and personnel dep. of RRMU-2	VBRA
7	Construction Quantity survey (appraisal Engineer)	Decision of MOEC - HN	quantity survey	Course	22Jul. -02 Aug 2010		Depending demand, not periodic	OJT	RRMU-2/RRMCs		QS and Engineer on bidding price of 13 RRMCs and other external organization	84	MOC	Construction cost appraisal Engineer certificate	Hanoi , Office of RRMU 2	UCE, Vietnam construction association MPI	Organization and personnel dep.of RRMU-2 / VBRA	Organization and personnel dep.t of RRMU-2	VBRA funded for RRMU 2, RRMCs paid by themselves
8	Road safety Audit		Road safety Audit		2006-2007		2 times (north and south)	guidance	RRMU-2, RTC, PDOTs,	Staff in related to traffic safety, in traffic management dept, traffic inspection and supervision	Engineer on road and bridge in RRMUs, RTCs, PDOTs	80 in north and 80 in south	international traffic safety association	Certificate with international value	On the road under management of RRMU 2	International Traffic Safety Association	International Traffic Safety Association	International Traffic Safety Association	SIDA
9	Training follow up Bridge man project		Foster and train management staff on road maintenance	Professional guidance	2006	1-2 days	After the project, as necessary	Seminars/guidance	RRMU-2 and RRMCs			30	Provided by the project	NO	Ha Noi	Experts of RRMU 2 and DRVN	DRVN and RRMU 2	DRVN and RRMU 2	RRMU 2
10	Competition		Organization of exam for Good manager and experience exchange	Regular competition		8 days	once/ 2 years	Competition	Road maintenance units		Chief, technician	35	RRMU 2 according to guidance of DRVN	No	Office of RRMU 2	Board of examiner	DRVN, Branch labor union and RRMU 2	RRMU 2	Contributed by companies and units
11	Same to 7		Road safety Audit		2007-2008	8 days		Others	RRMU-2			32	Guidance material	NO		Guider of RRMU 2	DRVN, Branch labor union and RRMU 2		Contributed by companies and units
12	Regular workshop on road maintenance and ROW		Road maintenance and ROW	Regular workshop			once/ 2-3 years	Workshop	RRMU 2	Staff related to road maintenance			equipment from DRVN or reference to project and contractor (new technology)				RRMU 2 and some involved contractors (or DRVN in case of necessary)	RRMU 2	RRMU 2

Table 4.1.3 Training at RTC Central

No	Name Of Course	Decision	Category	Type Of Training	Date	Duration	Frequency	Method	Target Org	Target Dep.	Target Ranks	Participant No	Material	Qualification	Venue	Trainer	Implementing Org.	Responsible Org.	Funding Source
1	Laboratory management	1013/QD-TCDBVN	Management	NA	01. Jul. 2010					Laboratory staff		3					DRVN		
2	Quantity survey professional skill refresher training class	04/QD-TTKTDB	Proffesional skill	NA	22.Jan. 2011					Related department		4					MOEC		
3	State management for senior official	68/TB-TCNVCD	Management	NA	06 Jun. 2011					Related department		1					HCM national Academy of Politics and Public administration		RTC
4	Short-term refresher training on assayer professional skill	1012/QD-TCDBVN	Proffesional skill	NA	01Jul2010					Related department		10					DRVN		DRVN
6	Refresher training class on state management for official	NA	Management	NA	19 Sep. 2011					Related department		10					MOT		
7	Refresher training for management staff of road and bridge maintenance	NA	Refresher training	NA	2006-2015					Related department		5					DRVN		
8	ISO quality management	NA	Management	Short term	01Oct 2011			OJT		Related department		30					RTC		
9	Training for Central branch of institute of building science and technology on bridge checking	NA	Training	Short term	07Aug. 2010					Engineer, bridge checking units, Design consultant		10		No	Da Nang	RTC	RTC		Central branch of institure of building science and technology on bridge checking

A4.2 WORKSHOPS

Table 4.2.1 List of workshops implemented during the project term

	Title of Workshop	Date
1	Workshop on Project for Capacity Enhancement in Road Maintenance	26th September 2012
2	Workshop on Pavement Repair Technology (Activity 3.2b)	15th May 2013
3	Workshop on Pavement Repair Technology (Activity 3.2b)	11th October 2013
4	Workshop on Road Maintenance Institution and Procedure (Activity 4)	28th June 2013
5	Workshop on Road Maintenance Institution and Procedure (Activity 4)	8th October 2013
6	Workshop on Pavement Management System	20th June 2012
7	Workshop on Project for Capacity Enhancement in Road Maintenance	7th March 2014

A4.2.1   Workshop on Capacity Enhancement in Road Maintenance

  (1)   1st Workshop (26th Sep 2012)

     a. Participant list

Table 4.2.2 Japanese Participants Workshop 2012

		Name	Title	Organization
1	Mr.	Shigeru KISHIDA	Second Secretory	Embassy of Japan
2	Ms.	Maki TOMURO		JICA Vietnam
3	Mr.	Vu Thi Thai Ha		JICA Vietnam
4	Mr.	Nguyen Dieu Linh		JICA Vietnam
5	Dr.	Kiyoshi KOBAYASHI		University of Kyoto
6	Mr.	Gaku SAITO		JICA Project Team (PASCO)
7	Mr.	Joel F. Cruz		JICA Project Team (PASCO)
8	Mr.	Tsuneo KATO	Team Leader	JICA Project Team
9	Mr.	Yasushi AOKI	Deputy Team Leader	JICA Project Team
10	Mr.	Motoi OKUDA	Project Expert	JICA Project Team
11	Mr.	Toshiya MATSUDA	Project Expert	JICA Project Team
12	Dr.	Bhoj Raj PANTHA	Project Expert	JICA Project Team
13	Ms.	Akiko MIYAKAWA	Project Expert	JICA Project Team
14	Mr.	Hideyuki KANOSHIMA	Project Long-term Expert	JICA Project Team
15	Mr.	Shigeo MURATA	Project Long-term Expert	JICA Project Team
16	Mr.	Nguyen Dinh THAO	Project team assistant	JICA Project Team
17	Ms.	Dinh Huyen Trang	Secretary	JICA Project Team
18	Ms.	Quynhanh Nguyen	Translator	JICA Project Team
19	Ms.	Nguyen Hoang Dieu Tam	Interpreter	JICA Project Team
20	Mr.	Pham Van Doan	Assistant IT engineer	JICA Project Team
21	Mr.	Bui Cong Do	Assistant IT engineer	JICA Project Team
Japanese side participants Sub Total no. 21				

Table 4.2.3 Vietnamese Participants Workshop 2012

		Name	Title	Organization
DRVN				
1		Quách Văn Khoa	Director	Road Infrastructure and Traffic Safety Dept.
2		Nguyễn Thị Minh Châu	Deputy Director	
3		Nguyễn Khánh Toàn	Staff	

	Name	Title	Organization	
4	Trần Quốc Thành	Staff		
5	Vũ Ngọc Lăng	Director	Road Maintenance & Management Dept.	
6	Nguyễn Đức Cường	Deputy Director		
7	Lương Văn Minh	Staff		
8	Tô Nam Toàn	Director	Science, Technology and International Cooperation Dept.	
9	Thiều Đức Long	Deputy Director		
10	Nguyễn Việt Tuấn	Staff		
11	Phạm Thị Minh Thư	Staff		
12	Đặng Công Chiến	Director	Road Information Technology Center	
13	Bùi Duy Tiến	Deputy Director		
14	Phạm Thanh Bình	Director	Planning and Investment Dept.	
15	Nguyễn Văn Kinh	Deputy Director		
16	Nguyễn Văn Minh	Staff		
17	Trịnh Xuân Sinh	Staff		
18	Tạ Thị Thủy	Staff		
19	Nguyễn Thị Hải Hà	Staff		
20	Đoàn Quốc Bảo	Staff		
21	Nguyễn Duy Lâm	Director	Organization & Personnel Dept.	
22	Nguyễn Thị Nhật	Deputy Director		
23	Trần Đức Toàn	Staff		
24	Nguyễn Hải Vinh	Staff		
25	Vũ Anh Tuấn	Office Manager	Expressway Dept.	
26	Cao Hoàng Cẩn	Staff		
27	Trịnh Đình Nghi	Office Manager	Administration Office	
28	Vũ Hải Tùng	Deputy Director	Construction Management Dept.	
29	Triệu Khắc Dũng	Staff		
30	Lê Khắc Ánh	Director	RTC-Central	
31	Vũ Tuấn	Deputy Director		
32		Staff		
33		Staff		
34	Bùi Xuân Trường	Deputy Director	RRMU II (including RTC 2)	
35	Nguyễn Anh Tú	Director		
36	Phương Thị Hồng	Director		
37	Hoàng Ngọc Nhị	Director		
38	Nguyễn Trí Dũng	Director		
39	Mầu Trường Thành	Cty 238	RRMCs	
40	Ngô Quang Vinh	Cty 248		
41	Nguyễn Anh Đức			
42	Trần Đình Trọng	Cty 240		
43	Nguyễn Công Oanh			
44	Phạm Đức Anh			
45	Ngô Quang Lai	Deputy Director	Science and Technology	RRMU IV (including RTC VI)
46	Phan Trần Anh	Deputy Director	Design Dept.	
47	Mai Xuân Sơn	Deputy Director	(RTC4)	
48	Nguyễn Thanh Hoài	Staff	Planning Dept. (RTC4)	
49	Võ Đình Dũng	General Director		RRMU V (including RTC V)
50	Đỗ Huy Thành	Director	Traffic Management	
51	Lê Khả Mậu		RTC 5	

	Name	Title	Organization	
52		Trịnh Đức Liêm		RTC 5	
53		Nguyễn Thuận Phương	General Director		
54		Nguyễn Văn Thành	Deputy Director	Science and Technology	RRMU VII (RTC VII)
55		Nguyễn Quế Hải	Director	RTC 7	
56		Lê Ngô Thành Nhân	Director	Administrative Dept.	
57		Trần Hữu Hải	Director	PMU4	
58		Nguyễn Đăng Hưng	Staff		
59		Hoàng Văn Hải	Deputy Director	PMU5	
60		Nguyễn Đình Bách	Director		
61		Nguyễn Thanh Long	Director	PMU7	
62		Nguyễn Thiện Hùng	Deputy Director	Science and Technology Dept. of PMU7	
63		Lâm Văn Hoàng	Deputy Director	PMU 2	
64		Lê Xuân Sinh	Director	PMU 6	
65		Cao Văn Hùng	Deputy Director		
66		Nguyễn Trọng Phú	Director	TA PMU	
67		Nguyễn Thị Nguyệt Nga	Deputy Director		
68		Đinh Thị Thanh Huyền	Staff		
69		Hoàng Việt Hà	Staff		
70		Dương Danh Hiển	Editorial director	Road Magazine	
71		Dương Danh Hiển	Editorial director	Road Magazine	
MOT					
72				Science and Technology Dept.	
73				Infrastructure Dept.	
74				Planning and Investment Dept.	
75				Finance Dept.	
Other					
76				UTC	
77				ITST	
78				TDSI	
79				UTT	
Vietnamese side participants Sub Total no. 79					

b. Photos

Opening speech by Mr Nguyen Ngoc Dong
(Vice Minister of MOT CUM General Director of DRVN)

Dr Kiyoshi Kobayashi
(University of Kyoto)

Presentation for Activity Groups

Facilitated by Dr Nguyen Trong Phu

Participants

Participants

c. Evaluation results

Evaluation of Workshop 26th September 2012

Q1.1 Please evaluate suffciency on trianing program as a Whole.

Very Sufficier	5	14%
Sufficient	21	57%
Fair	11	30%
Insufficient	0	0%
Very Insuffici	0	0%
Total	37	
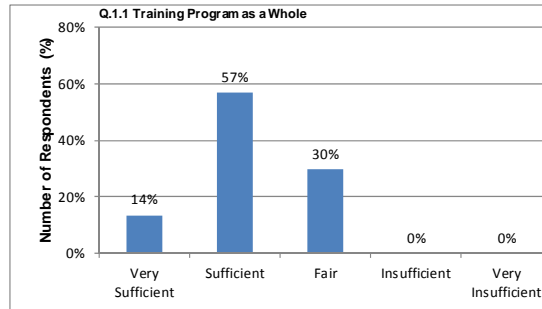
Q1.2.Please evaluate suffciency on Achivement of expectation on workshop.

Very Sufficier	2	6%
Sufficient	15	42%
Fair	19	53%
Insufficient	0	0%
Very Insuffici	0	0%
Total	36	
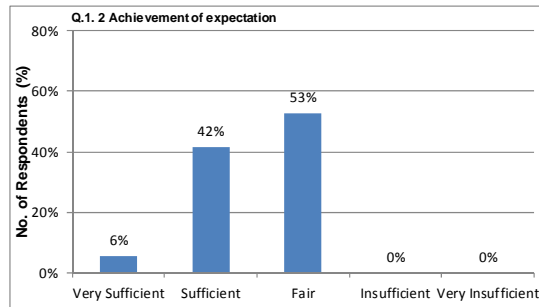
Q1.3.Please evaluate suffciency on Contents offered.

Very Sufficier	2	6%
Sufficient	17	49%
Fair	16	46%
Insufficient	0	0%
Very Insuffici	0	0%
Total	35	
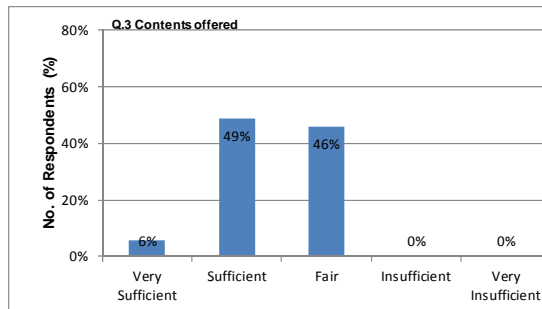
Q2.1. Please evaluate contentss of Lecture on "Kyoto model Pavement Management System"

Very Sufficier	5	14%
Sufficient	24	65%
Fair	7	19%
Insufficient	1	3%
Very Insuffici	0	0%
Total	37	
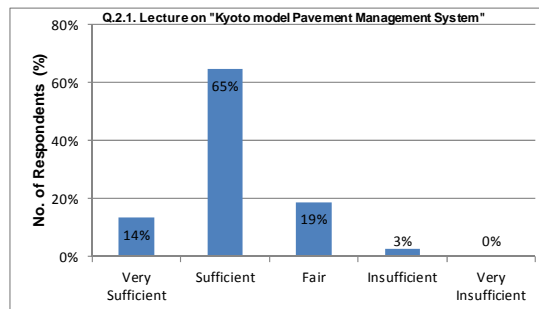
Q2.2. Please evaluate contentss of Lecture on "Introduction of Road Maintenance of National highway in Japan"

Very Sufficier	5	14%
Sufficient	22	59%
Fair	8	22%
Insufficient	1	3%
Very Insuffici	1	3%
Total	37	
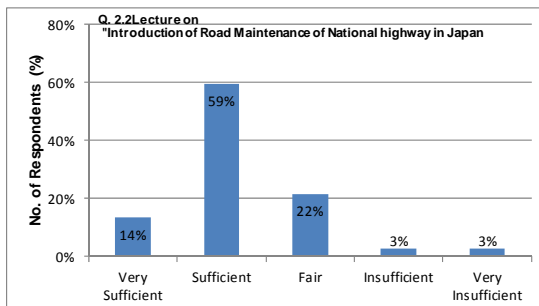
Q2.3. Please evaluate contentss of presentation on "Activity 1"

Very Sufficient	3	9%
Sufficient	18	51%
Fair	12	34%
Insufficient	2	6%
Very Insufficient	0	0%
Total	35	
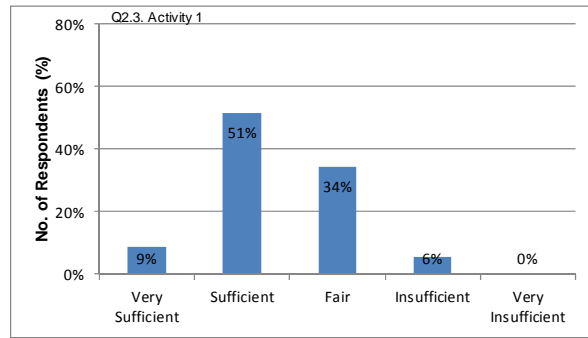
Q2.4. Please evaluate contentss of presentation on "Activity 2"

Very Sufficient	4	11%
Sufficient	19	53%
Fair	12	33%
Insufficient	1	3%
Very Insufficient	0	0%
Total	36	
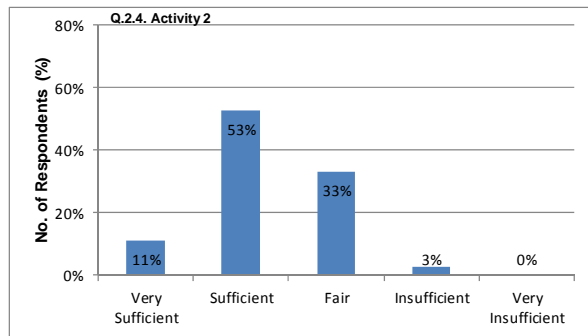
Q2.5. Please evaluate contentss of presentation on "Activity 3"

Very Sufficient	3	9%
Sufficient	17	49%
Fair	14	40%
Insufficient	1	3%
Very Insufficient	0	0%
Total	35	
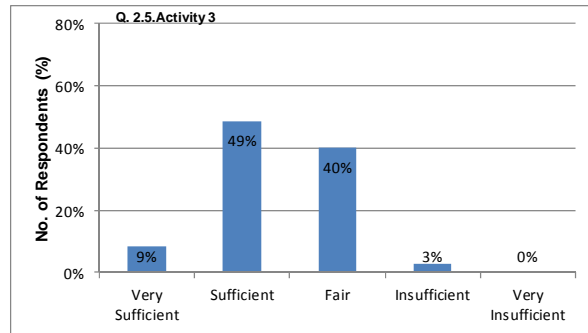
Q2.6. Please evaluate contentss of presentation on "Activity 4"

Very Sufficient	2	6%
Sufficient	19	56%
Fair	11	32%
Insufficient	2	6%
Very Insufficient	0	0%
Total	34	
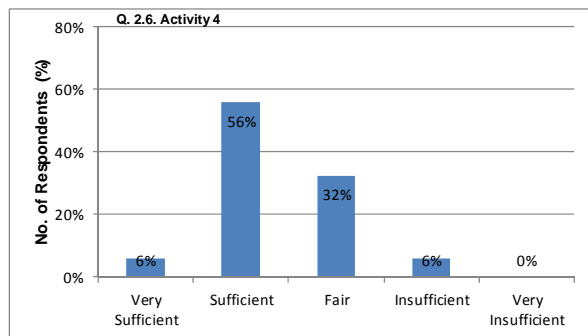
Q3.1. Please evaluate contentss provided in workshop invitation.

Very Sufficient	10	27%
Sufficient	21	57%
Fair	6	16%
Insufficient	0	0%
Very Insufficient	0	0%
Total	37	
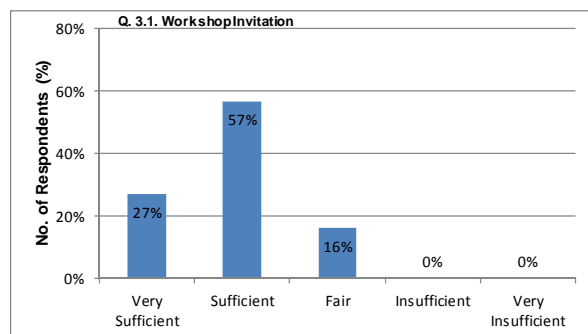
Q3.2. Please evaluate Workshop Duration.

Very Sufficier	9	24%
Sufficient	22	59%
Fair	6	16%
Insufficient	0	0%
Very Insuffici	0	0%
Total	37	
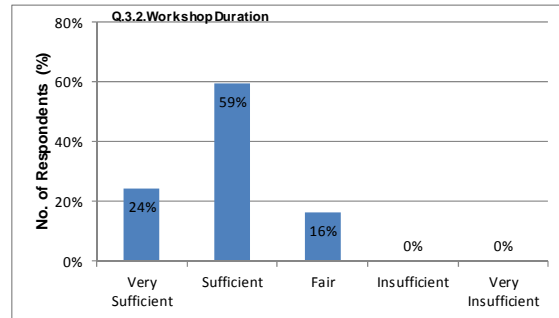
Q3.3. Please evaluate Number of Participants.

Very Sufficier	3	8%
Sufficient	20	54%
Fair	12	32%
Insufficient	0	0%
Very Insuffici	0	0%
Total	35	
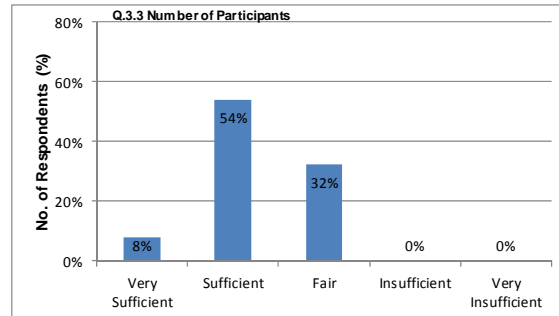
Q4.1. Do you wish to have a following up activity after this workshop?

Yes	31	84%
No	2	5%
Total	12	
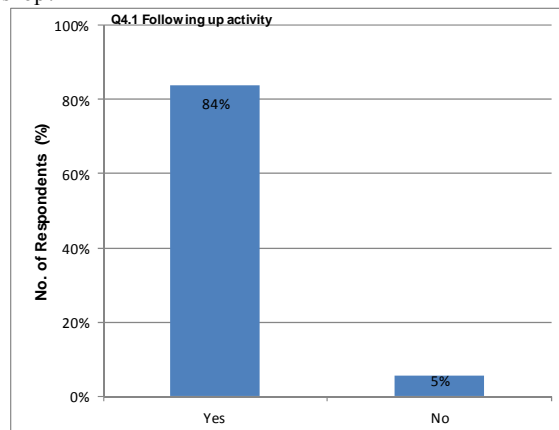
Q4.2.Please provide suggestionon topic or subject to be covered in road maitenance and management in next available occasion.

1 Please give us specific examples on outputs of the project

2 Develop fund plans for the road maintenance of the countries in the Asia region and specifically in Vietnam

3 Conformity assessment is required to apply to the case of Viet Nam or the regions.

4 Capacity enhancement in road management

5 If possible, can you supplement examples of similar contents of other advanced countries for comparing?

6 Comparison and analysis of road maintenance and management model of Japan and Vietnam. Evaluation and selection of road maintenance and management model in Vietnam

7 Maximum automation of the transfer and analysis process of the received data to put into processing software (especially data on images should be digitized automatically)

8 Provide more detailed content on Activity 2, with specific examples of planned maintenance for one highway

9 Develop clearly Kyoto Model: customized for Vietnam conditions, for different regions of Vietnam, the accuracy of the forecasts used Kyoto model

10 Can the special vehicle provide the specific data such as: station location, size, damage level of each location?

11 Identify, classify and assess the damage level of the road

12 Determine the cause and solution for the damaged pavement

13 Do you have email or contact information likely the information channel between researchers and participants in the workshop

14 Currently the project is focusing mainly to collect updated data on road payment, not to mention other factors related to routes such as drainage channels, the protection works, traffic safety works etc.... It should be studied more fully updated in order to the road management and maintenance is more efficient.

15 Focus on introducing more detail database and maintenance planning

16 Capacity enhancement in road maintenance at RRMUs (Department of road management at the regions)

17 Updating data on the web and managing database on MS-SQL

18 The data required predicting the deterioration should be supplemented the weather factors and the overload which are not under control.

19 The bidding for routine road maintenance and repair work

20 Organization Chart of road maintenance and management system in Vietnam

21 The Lecture No. 2 "maintenance work in Japan" should be upgraded to 1 workshop with the full contents on management, exploitation and maintenance of road with speakers from the Japanese maintenance and management teams, MLIT, Road Administration, road offices at the regions and contractors

22 For the maintenance plan: Consider supplementing priority assessed parts for some National Highways which is not the Expressway but it is exploited with high speed such as Phap Van - Cau Gie Highway.

Q5. Please provide any comments on workshop.

1 It is necessary for the maintenance of road

2 JICA is requested to receive comments of the participants in the workshop to adjust the project suitably with Vietnam road.

3 The road maintenance technologies should be considered economic factors to technology is feasible

4 The handling of data after collection using a lot of people (such as determine the rate of pavement cracks etc ....) Do we have any software make data processing after collection? to reduce human resources as well as errors in data processing.

5 Workload is large and requires on specific information in a short time. In order to have more effects, it necessary to enhance the exchange, information collection and agreement.

6 Activity 5 is a activity through 5 activities of the project but not reported. It must have the following documents for long-term training after finishing the project.

7 Are the images of the date processed automation or manual before transferring to processing software?

8 What kind of technology does measure instrument system use? How does errors in data? If you use the device with other technologies (such as Haxieyes technology of ARRB company etc ...), Does the collected data meet the requirements of the Kyoto Model?

9 Enthusiastic, dynamic and useful

10 The seminar is significant; the workshop gave the information about the road maintenance and management, methods to collect some basic data. However, in order to satisfy the road management and maintenance, research should study further and fully all the relevant factors to the work of road maintenance and management in Vietnam

11 Workshop have good effects when the project put use in the current traffic condition in Vietnam

12 For recommendations of Activity 4 " Strengthening of road maintenance Institutes", recommendations on making "Management Manual" is a good suggestion. However, in order to match the conditions of Vietnam, the JICA Team should turn into a propose " Decree Draft " + management manual. I will send detailed email to exchange with you on this issue

(2) 2nd Workshop (7th Mar 2014)

    a.Participant list

Table 4.2.4 Japanese Participants

Name	Organization	Title
Ms. Maki TOMURO	JICA Vietnam Office	Representative
Ms. Vu Thi Thai Ha	JICA Vietnam Office	Program Coordinator
Mr. Hideyuki KANOSHIMA	JICA Project team	Advisor
Mr. Tsuneo KATO	JICA Project team	Team leader
Mr. Bhoj Raj PANTHA	JICA Project team	Project expert
Ms. Akiko MIYAKAWA	JICA Project team	Project expert
Mr. Yoshiro KUNIMASA	JICA Project team	Project expert
Ms. Đào Lan Hương	JICA Project team	Project Assistant
Mr. Nguyễn Đình Thạo	JICA Project team	Project Assistant
Ms. Nguyễn Quỳnh Anh	JICA Project team	Translator
Mr. Bùi Công Độ	JICA Project team	Project Assistant
Mr. P. V. Doan	JICA Project team	Project Assistant
Mr. Kazuya AOKI	PASCO Corporation	PASCO team leader
Mr. Kensuke KIMURA	PASCO Corporation	Admin
Mr. Kohei SAKAI	PASCO Corporation	Engineer
Mr. Gaku SAITO	PASCO Corporation	Engineer
Ms. Nguyen Thi Thuy Dung	PASCO Corporation	Secretary
Mr. Do Hong Phong	PASCO Corporation	Engineer
Mr. Pham Danh Son	PASCO Corporation	Engineer
Japanese side participants Sub Total no. 19		

Table 4.2.5 Vietnamese Participants

Name		Organization	Division	Position
MOT				
	Nguyễn Quốc Hùng	MOT	Department of Personnel	Official
DRVN				
	Nguyễn Hải Vinh	DRVN	Road Magazine	Deputy
	Nguyễn Khánh Hồng	DRVN	Road Magazine	Reporter
	Cao Tiến Hào	DRVN	Legal Affairs	
	Lê Trung Khê	DRVN	Department of Personnel	Official
	Nguyễn Trọng Tuệ	DRVN	Road Construction Management Bureau	
	Tạ Thị Thủy	DRVN	DPI	
	Nguyễn Anh Thi	DRVN	DPI	
	Trịnh Xuân Sinh	DRVN	DPI	
	Nguyễn Tuấn Linh	TCĐBVN	DPI	
	Đào Mạnh Cường	TCĐBVN	Transportation Dept.	
	Nguyễn Thị Nhật	DRVN	Department of Personnel	Deputy DG
	Trần Đức Toàn	TCĐBVN	Department of Personnel	
	Nguyễn Thị Hải Hà	DRVN	DPI	Official
	Nguyễn Việt Tuấn	DRVN	Science and Tech. Dept.	Official
	Đinh Thanh Huyền	DRVN	Science and Tech. Dept.	Official
	Trần Minh Thu	DRVN	Expressway Management office	Official
	Vũ Anh Tuấn	DRVN	Expressway Management office	Official
	Nguyễn Xuân Hưng	DRVN	Expressway Management office	Official
	KimJoung Dae		Expressway Management office	
	Trần Quốc Thành	TCĐBVN	Road Management & Maintenance Dept.	
	Trần Quốc Toàn	TCĐBVN		
	Nguyễn Duy Dũng	TCĐBVN	Vehicles and Drivers Management Dept.	
	Nguyễn Lan Anh	Hoa Phong E&C	TIE	Phó GĐ
	Trần Bá Đạt	DRVN	Traffic Safety Dept.	
	Phạm Văn Toàn	DRVN	Traffic Safety Dept.	
	Nguyễn Văn Nhân	DRVN	Association of Road-Bridge	

Nguyễn Khánh Toàn	DRVN	Road Management & Maintenance Dept.	Official
Cao Hoàng Cẩn	DRVN	Road Management & Maintenance Dept.	Official
Nguyễn Trọng Phú	TCĐBVN	PMU TA	
Hoàng Việt Hà	TCĐBVN	PMU TA	
Trịnh Thị Tuyết	TCĐBVN	PMU TA	
Chu Thị Thanh Loan	TCĐBVN	PMU TA	
Phan Văn Cường	TCĐBVN	PMU TA	
Lê Thị Vân Thanh	TCĐBVN	PMU TA	
Nguyễn Mạnh Tuấn	TCĐBVN	PMU TA	
Lại Thu Hương	TCĐBVN	PMU TA	
Lê Ngọ Giang	TCĐBVN	PMU TA	
RTCs				
Bùi Văn Kiên	RTC I		
Ngô Quang Lai	RTC II	Design Division	TP
Nguyễn Đại Nghĩa	RTC II	Design Division	Official
Nguyễn Văn Phương	RTC III	Design Division	Official
Lê Ngô Thành Nhân	RTC IV	Design Division	Manager
Nguyễn Việt Hưng	RTC IV		Official
Lưu Quang Tuấn	DRVN	RTC central	Official
Đặng Văn Quỳnh	DRVN	RTC central	Official
RRMBs				
Nguyễn Anh Tú	RRMB I	Road Management & Maintenance Div.	Manager
Phương Thị Hồng	RRMB I	Technical Div.	Manager
Hoàng Ngọc Nhị	RRMB I		Official
Bùi Xuân Trường	Cục QLĐB I		Deputy DG
Đào Văn Minh	RRMB II		Deputy DG
Hoàng Nghĩa Phú	RRMB II		
Lê Phan Duy	RRMB III	Road Management & Maintenance Div.	Deputy Manager
Bùi Hùng Mẫn	RRMB III	Technical Div.	Manager
Nguyễn Văn Thành	RRMB IV		Deputy DG
Nguyễn Đình Dũng	RRMB IV	Technical Div.	Manager
DOT				
Nguyễn Đình Đông	Hoa Binh DOT	Infrastructure Management Div.	Official
Bùi Văn Bình	Hoa Binh DOT	Infrastructure Management Div.	Official
Nguyễn Tiến Hùng	Phu Tho DOT		
Dương Thế Quyền	Vinh Phuc DOT		Deputy DG
Lê Mạnh Tuyền	Vinh Phuc DOT	Planning Dept.	Manager
Bùi Thế Sơn	Bac Giang DOT		DG
Nguyễn Văn Thắng	Bac Giang DOT	Traffic Management Dept.	D.Manager
Đàm Văn Cường	Bac Giang DOT	RMU	D. Director
Trịnh Văn Sáng	Quang Ninh DOT	Infrastructure Management Div.	D.Manager
Vũ Thế Anh	Quang Ninh DOT	Infrastructure Management Div.	Official
Phạm Xuân Đức	Quang Ninh DOT	PMU	Official
Thiệu Ngọc Hảo	Ha Nam DOT	Infrastructure Management Div.	D.Manager
Đỗ Thanh Hải	Hung Yen DOT	Infrastructure Management Div.	
Lê Ngọc Hưng	Hung Yen DOT		
Vũ Đại Phong	Hung Yen DOT		
Trần Đức Huấn	Nam Dinh DOT	Traffic Management dept.	D.Manager
Phạm Công Thuân	Nam Dinh DOT		Official
Mai Văn Dũng	Nam Dinh DOT		Deputy DG
Trần Bá Hùng	Nam Dinh DOT		Deputy DG
Nguyễn Đức Thành	Nam Dinh DOT	Road-bridge management Company	
Nguyễn Thị Loan	Nam Dinh DOT	Road-bridge management Company	
Nguyễn Tuấn Anh	Nam Dinh DOT	Road-bridge management Company	
Phạm Ngọc Tập	Ninh Binh DOT		
Bùi Toàn Thắng	Lai Chau DOT		Deputy DG
Vũ Trung Tuấn	Lai Chau DOT	PMU	Deputy

			Director
	Hà Ngọc Công	Lao Cai DOT	Infrastructure Management Div.	Official
	Phạm Thị Kim Oanh	Lao Cai DOT	Lao Cai Road Company	Phó GĐ
	Hồ Đức Đạo	Hai Duong DOT	Traffic Management dept.	Official
	Hoàng Thành Trung	Son La DOT	PMU	Official
	Thái Văn Hùng	Nghe An DOT	Infrastructure Management Div.	Official
	Phan Hải Châu	Nghe An DOT	PMU	Official
	Bùi Đức Đại	Ha Tinh DOT		Deputy DG
	Nguyễn Văn Mai	Ha Tinh DOT	Transportation Dept.	Manager
	Trần Phi Được	Ha Tinh DOT	Transportation Dept.	Official
	Phan Văn Trung	Ha Tinh DOT	PMU	Director
	Trần Văn Sử	Ha Tinh DOT	PMU	Official
	Đào Ngọc Hùng	Yen Bai DOT		Official
	Lê Quang Tuấn	Yen Bai DOT		Official
	Nguyễn Tiến Hiệu	Thanh Hoa DOT		Deputy DG
	Lý Văn Thích	Thanh Hoa DOT		
	Lưu Vũ Linh	Thanh Hoa DOT		
	Nông Đức Thái	Cao Bang DOT	Infrastructure Management Div.	Deputy Manager
	Hoàng Văn Hảo	Cao Bang DOT		
	Đỗ Văn Lai	Tuyen Quang DOT	Infrastructure Management Div.	Deputy Manager
	Hoàng Văn Khải	Bac Kan DOT		
	Nguyễn Trung Hậu	Bac Kan DOT		
	Vũ Đức Thuận	Thai Binh DOT		Deputy DG
	Vũ Duy Tùng	Hai Phong DOT		Deputy DG
	Vũ Thái Bình	Hai Phong DOT		
UTC				
	Trần Thị Kim Đăng		Faculty of Engineering	
	Trịnh Thị Hiếu		Road-Airport	Lecturer
	Nguyễn Duy Tiến		Bridge Faculty	
	Ngô Thu Trang		Internship	
University of Civil Engineering				
	Trần Đình Bình			
Mass media				
	Lưu Thoan			
	P.thực			
	H.Việt			
Vietnamese side participants Sub Total no. 113				

b. Photos

Opening speech by Mr Thang
(General Director of DRVN)

Participants

Presentation by Mr Kato (Team Leader)

Keynote by Mr Kanoshima (Advisor)

A4.2.2   Workshop on Pavement Maintenance Technology (Act 3.2b)

**(1)   1st Workshop (15th May 2013)**

a. Participant list

Table 4.2.6 Participants list (Act 3.2b _1st Training)

No.	Name	WG	Org.	Department	Position
1	Nguyễn Xuân		DRVN		Dep. Director
2	Nguyễn Thị Nhật	W5	DRVN	Organization & Personnel Dep.	Dep. Director
3	Thiều Đức Long		DRVN	Science, tech, environment & Int'l	Dep. Director
4	Nguyễn Đức Cường		DRVN	Road Maintenance and Management	Dep. Director
5	Trần Tuấn Anh		DRVN	Road Maintenance and Management	
6	Nguyễn Anh Tú	WG3	RRMU 2	Traffic Management Dep.	Director
7	Nguyễn Công Hải		RRMU 4		
8	Võ Tuấn Ngọc		RRMU 4		
9	Võ Đình Thanh		RRMU 5		
10	Nguyễn Văn Cường		Cabonco Company		
11	Nguyễn Quốc		Transmeco Company		
12	Hồ Quang Thắng		Transmeco Company		
13	Nguyễn Đình Bách		Director of Hai Van Road Tunnel		
14	Võ Văn Lương		Hai Van Road Tunnel		
15	Tạ Đức Hạnh		Hai Van Road Tunnel		
16	Nguyễn Thị Thanh		DRVN	PMU	
17	Lê Trung Khê		DRVN	PMU	
18	Nguyễn Đăng Minh		DRVN	PMU	
19	Mai Văn Hồng		MOT	Infrastructure Dep.	Deputy Director
20	Ngô Thị Thùy		DRVN	Vietnam Road Magazine	
21	Nguyễn Trọng Phú		DRVN	PMUTA	

b. Photos

Mr Tatsushita

Participants

(2)   2nd workshop (11th Oct, 2013)

a. Participant list

Table 4.2.7 Participants list (Act 3.2b _2nd Training)

No.	Name	WG	Org.	Department	Position
1	Nguyen Viet Tuan	WG3	DRVN	Science, tech, environment & Int'l Dep.	Expert
2	Nguyen Thi Hai Ha	WG2/5	DRVN	Planning and Investment Dep.	Expert
3	Quach Van Khoa	WG1	DRVN	Road Infrastructure and Traffic Safety Dep.	Director
4	Thieu Duc Long	WG3	DRVN	Science, tech, environment & Int'l Dep.	Dep. Director
5	Ta Thi Thuy	WG2/3	DRVN	Planning and Investment Dep.	Expert
6	Trinh Xuan Sinh	WG1	DRVN	Planning and Investment Dep.	Expert
7	Tran Ba Dat		DRVN	Road Infrastructure and Traffic Safety Dep.	
8	To Nam Toan		DRVN	Science, tech, environment & Int'l Dep.	
9	Tran Duy		DRVN	Road Magazine	
10	Tran Nam Duong		RRMU 2	Field Office 3	
11	Pham Thi Ngoc Lan		RRMU 2	Field Office 5	
12	Nguyen Ngoc Anh		RRMU 2	Field Office 1	
13	Nguyen Vu Tuan	WG3/4/5	RTC-C		Dep. Director
14	Hoang Anh Tuan		RTC		
15	TranThi My Ha		RTC-2		

b. Photos

Samples presented

A4.2.3   Workshop on Routine Maintenance Institution (Act 4)

(1)   1st Workshop (28th June, 2013)

a.   Participant list

Table 4.2.8 Participants list (Act 4 _1ˢᵗ Training)

No.	Name	WG	Org.	Department	Position
1	Luong Van Minh	WG1/2/4/5	DRVN	Road management and maintenance Dep.	Expert
2	Tran Quoc Toan	WG1/2/4/5	DRVN	Road management and maintenance Dep.	Expert
3	Tran Quoc Thanh	WG2/4	DRVN	Road Infrastructure and Traffic Safety Dep.	Expert
4	Nguyen Khanh Toan	WG1	DRVN	Road Infrastructure and Traffic Safety Dep.	Expert
5	Cao Hoang Can	WG3	DRVN	Vietnam Expressway Management Office	Expert
6	Trinh Xuan Sinh	WG1	DRVN	Planning and investment Dep.	Expert
7	Nguyen Thi Hai Ha	WG2/5	DRVN	Planning and Investment Dep.	Expert
8	Nguyen Thi Minh Chau	WG2	DRVN	Road Infrastructure and Traffic Safety Dep.	Expert
9	Cao Tien Hao	WG4	DRVN	Transport and Legislation Dep.	Expert
10	Doan Thi Hong Tham		MOT		
11	Tran Quoc Thang		MOT	Infrastructure Dep	
12	Nguyen Van Tuan		DRVN		
13	Bui Duy Tien		DRVN		
14	Trinh Huu Trung		DRVN		
15	Le Hoang Long		DRVN		
16	Nguyen Thi Xuan Hong		DRVN		
17	Nguyen Duc Hoai		DRVN		
18	Tran Duy		DRVN		
19	Vu Anh Tuan		DRVN		
20	Nguyen Xuan Hung		DRVN		
21	Ngo The Thong		DRVN		
22	Quach Van Kha		DRVN		
23	Tran Nguyen Huy		DRVN		
24	Trinh Thi Tuyet		DRVN		
25	Le Hoang Anh Van		DRVN		
26	Nguyen Ngoc Nga		DRVN		
27	Ngo Thu Huong		DRVN		
28	Phan Van Cuong		DRVN		
29	Hoang Viet Ha		DRVN		
30	Chu Thi Thanh Loan		DRVN		
31	Nguyen Nam Ha		DRVN		
32	Nguyen Anh Tu	W3/4/5	RRMU 2	Traffic Management Dep.	Director
33	Phuong Thi Hong	WG2	RRMU 2	Economic and Planning Dep.	Director
34	Pham Thi Ngoc Lan		RRMU 2		
35	Duong Dinh Hung		RRMU 2	Traffic management Div	staff
36	Tran Nam Duong		RRMU 2		
37	Le Quang Vinh		RRMU 4		
38	Vu Tuan Long		RRMU4		
39	Le Phan Duy		RRMU 5		
40	Vu Hoai Nam		UTT		
41	Nguyen Tuyen Tam		UTT		
42	Dang Minh Tam		UTC		
43	Nguyen Ngoc Lan		UTC		

| 44 | Pham Duy Huu | | UTC | | |
| 45 | Trinh Hoang Son | | UTC | | |

b. Photos

Mr Kanoshima (Advisor)

Participants

(2)   2nd Workshop (8th October, 2013)

a. Participant list

Table 4.2.9 Participants list (Act 4 _2ⁿᵈ Training)

No.	Name	WG	Org.	Department	Position
1	Dang Cong Chien	WG1/2/3/4/5	DRVN	Science, tech, environment and Int'l Dep.	Dep. Director
2	Thieu Duc Long	WG3	DRVN	Science, tech, environment & Int'l Dep.	Dep. Director
3	Nguyen Viet Tuan	WG3	DRVN	Science, tech, environment & Int'l Dep.	Expert
4	Ta Thi Thuy	WG2/3	DRVN	Planning and Investment Dep.	Experts
5	Nguyen Thi Hai Ha	WG2/5	DRVN	Planning and Investment Dep.	Expert
6	Cao Hoang Can	W3	DRVN	Vietnam Expressway Management Office	Expert
7	Nguyen Trong Phu	WG3	DRVN	PMU TA	Director
8	Mai Van Hong		MOT	Infrastructure Dep	Dep. Director
9	Trinh Huu Trung		DRVN	Information Center	
10	Le Hoang Long		DRVN	Information Center	
11	Bui Duy Tien		DRVN	Information Center	
12	Chu Thi Hong Nhan		DRVN	Institute of Science and Technology	
13	Ngo The Thong		DRVN	Office for Road Maintenance Fund	
14	Nguyen Manh		DRVN	Bridge and Road Association	
15	Tran Ba Dat		DRVN	Infrastructure and Safety Dep.	Expert
16	Khuc Nguyet Hao		DRVN	Office for Road Maintenance Fund	
17	Vu Quoc Hieu		DRVN	Construction Management Dep.	Expert
18	Nguyen Dinh Toan		DRVN	Construction Management Dep.	Expert
19	Hoang Ngoc Nhi	WG1	RRMU	Technical and Construction Management	Expert
20	Nguyen Ngoc Anh		RRMU		
21	Nguyen Dai Nghia		RRMU	Field Office 4	
22	Vu Van Duy		RRMU	Field Office.5	
23	Nguyen Dinh Phuc		RRMU	Field Office 7	Expert
24	Nguyen Van Dan		RTC-C		
25	Hoang Anh Tuan		RTC-C		
26	Tran Thi My Ha		RTC-2		
27	Vu Ngoc Khue		VIBRA		

28	La Van Cham		UTC		Lecturer
29	Tran Duy		DRVN	Road magazine	
30	Tran Minh Thu		DRVN	PMU	Expert

b. Photos

Participants

Mr Kanoshima (Advisor)

A4.3 TECHNICAL TRAINING 2013

Table 4.3.1 List of Technical trainings implemented during the project term

Training		Date
Road database system(Act 1)	1st	06.06.2013
	2nd	20.06.2013
	3rd	28.08.2013
Pavement Condition Survey (Act 2.1)	1st	25/26 02.3014
PMS/PMoS dataset CS development (Act 2.2a)	1st	27.08.2013
Road maintenance planning (Act 2.2b)	1st	27.08.2013
	2nd	24-28.02.2014
Inspection Method (Act 3.1)	1st	18.07.2013
	2nd	28.11. 2013
		29.11. 2013
Revised routine maintenance standard (Act 3.2a)	1st	24.07.2013
	2nd	25.09.2013
Operation of PMoS (Act 3.3)	1st	02.08.2013
	2nd	18.09.2013

A4.3.1 Training on Road database system (Act 1)

(1) 1st Training (6th June 2013)

a. Training Program

Table 4.3.2 Training Program (Act 1_1st Training)

Time	Contents	Trainer
	Registration and Opening	
9:15 – 9:30	Registration	
9:30 – 9:40	Opening Remarks	WG-1 TL , DRVN
	Self-Introduction	All participants

9:40 – 9:45	Explanation of the Outline of the Training	Dr. B. R. Pantha
	Session -I: Introduction of Road Database System	
9:45 – 10:45	Overview of Road Database System	Dr. B.R. Pantha & Mr. P. V. Doan
	Road Database Structure	
	Database System Algorithm	
	Database System Configuration	
	Data Items	
	Data Input Format	
10:4-11:00	Break	
	Session -II: Road Database System Functions and Operation &	
11:00–12:15	Database System Functions	Dr. B.R. Pantha & Mr. P. V. Doan
	Data Input	
	Data Validation Check	
	Data Storage	
	Utilization of Road Database User Manual	
12:15-13:30	Lunch Break	
	Session -III: Practicing on Database Operation and Management	
	Trainee will be divided into 5 groups and data input practices will be conducted in turn.	
13:30–14:00	Orientation on data inputting of Priority -1 data	Dr. B. R. Pantha &
14:00–14:30	Data Input Practice in computer	Dr. B.R. Pantha & Mr. P. V. Doan
14:30–15:00	(Group 2)-ditto-	
15:00–15:30	(Group 3)-ditto-	
15:30–16:00	(Group 4)-ditto-	
16:00–16:30	(Group 5)-ditto-	
16:30	The End	

b. Participant list

Table 4.3.3 Participants list (Act 1_1st Training)

No	Name	WG	Org.	Department	Position
1	Quach Van Khoa	WG1	DRVN	Road Infrastructure and Traffic Safety	Director
2	Dang Cong Chien	WG1/2/3/4/5	DRVN	Science, tech, environment and Int'l Dep.	Dep.Director
3	Luong Van Minh	WG1/2/4/5	DRVN	Road management and maintenance Dep.	Expert
4	Tran Quoc Toan	WG1/2/4/5	DRVN	Road management and maintenance Dep.	Expert
5	Trinh Xuan Sinh	WG1	DRVN	Planning and investment Dep.	Expert
6	Nguyen Khanh Toan	WG1	DRVN	Road Infrastructure and Traffic Safety	Expert
7	Nguyen Hai Vinh	WG5	DRVN	Personnel and organization Dep.	Expert
8	Nguyen Viet Tuan	WG3	DRVN	Science, tech, environment & Int'l Dep.	Expert
9	Tran Duy		DRVN	Road magazine	
10	Ha Viet Tung		DRVN	Information center	Expert
11	Tu Minh Phuong		RRMU	Field Office 6	Expert
12	Duong Dinh Hung		RRMU	Traffic management Div	Expert
13	Pham My Hanhj		RRMU		Expert
14	Nguyen Dinh Phuc		RRMU	Field Office.7	Expert
15	Dang Dinh Quang		RRMU	Field Office 5	Expert
16	Pham Duc Hung		RRMU	Cost Appraisal Div	Expert
17	Nguyen Quang Hung		RRMU	Field Office 3	Expert

18	Le Khac Anh		RTC-C		Director
19	Hoang Anh Tuan		RTC-C		Expert
20	Luong Xuan Ngoc		RTC-C		Expert
21	Nguyen Thanh Sang		RTC-2	Design Division	Expert
22	Nguyen Van Huy		RTC-2	Design Division	Expert
23	Tran My Ha		RTC-2	Design Division	Expert
24	Nguyen Quang Huy		RTC-2	Design Division	Expert

c. Photos
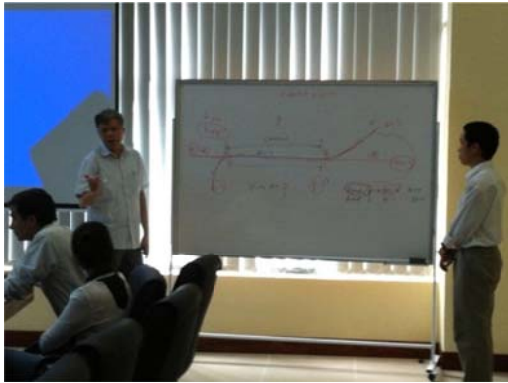
Mr. Khoa, (WG1 learder)

Computer practice

(2) 2nd Training (20th June 2013)

a. Training Program

Table 4.3.4 Training Program (Act 1_2nd Training)

Time	Contents	Trainer
	Registration and Opening	
9:15 – 9:30	Registration	
9:30 – 9:40	Opening Remarks	WG-1 TL , DRVN
	Self-Introduction	All participants
9:40 – 9:45	Explanation of the Outline of the Training Program	Dr. B. R. Pantha
	Session -I: Database Operation and Management	
9:45 – 10:00	An Overview of Vietnam National Road Network	Mr. Khoa, TL, WG-1 (DRVN)
10:00–11:00	System Installation and Environment Setting	
	New Data Input and Validation Check with	
	Resumption of Data Input Task with Demonstration	
11:00-11:15	Break	Dr. B.R. Pantha & Mr. P. V. Doan
11:15–12:00	Data Search, Display and Print with Demonstration	
	Data Editing with Demonstration	
	VBMS Interface with Demonstration	
	Discussion	
12:00-13:30	Lunch Break	
	Session -II: Practicing on Database Operation and Management	
Trainee will be divided into 4 groups and data input practices will be conducted in turn.		

13:30 – 14:00	Orientation on Data Input, Editing, Validation Check, Resumption of Data Input Task, etc. in the database	Dr. B. R. Pantha & Mr. **P**. V. Doan
14:00–14:30	(Group 1)Practice in computer	Dr. B. R. Pantha, Mr. P. V. Doan, Mr. B. C. Do
14:30–15:00	(Group 2)-ditto-	
15:00–15:30	(Group 3)-ditto-	
15:30–16:00	(Group 4)-ditto-	
16:00	Closing Remarks	

b.   Participant list

Table 4.3.5 Participants list (Act 1_2nd Training)

No.	Name	WG	Org.	Department	Position
1	Nguyen Khanh Toan	WG1	DRVN	Road Infrastructure and Traffic Safety Dep.	Expert
2	Quach Van Khoa	WG1	DRVN	Road Infrastructure and Traffic Safety Dep.	Director
3	Trinh Xuan Sinh	WG1	DRVN	Planning and investment Dep.	Expert
4	Ha Viet Tung		DRVN	Information Center	Expert
5	Nguyen Thi Thu Hang		DRVN	Information Center	
6	Trinh Huu Trung		DRVN	Information Center	
7	Le Hoang Long		DRVN	Information Center	
8	Nguyen Dinh Phuc		RRMU 2	Field Office 7	
9	Nguyen Quang Hung		RRMU 2	Field Office 3	Expert
10	Duong Dinh Hung		RRMU 2	Traffic Management Division	Expert
11	Le Van Tan		RRMU 2	Field Office 2	
12	Hoang Anh Tuan		RTC-C		Expert
13	Nguyen Van Hoan		RTC-C		
14	Nguyen Huu Hieu		RTC-C	Science, Technology and Environment	
15	Nguyen Huu Son		RTC-C	Science, Technology and Environment	
16	Nguyen Thanh Sang		RTC-2	Design Division	Expert
17	Tran Thi My Ha		RTC-2	Design Division	Staff
18	Nguyen Quang Huy		RTC-2	Design Division	Staff

c.Photos

Computer Practice

Presentation by Act 1

(3)   3rd Training   (28th Aug 2013)

a.Training Program

Table 4.3.6 Training Program (Act 1_3rd Training)

Time	Contents	Trainer
	Registration and Opening	
9:00 – 9:20	Registration	
9:20 – 9:25	Opening Remarks	WG-1 TL , DRVN
9:25 – 9:30	Explanation of the Outline of the Training	Dr. B. R. Pantha
	Session -I: Database Operation and Management	
9:30 – 9:40	Necessity of Database in DRVN	Mr. Toan Nguyen Khanh
	Current Status of Database in DRVN and its	
9:40 – 10:30	New Data Input, Validation Check and	Dr. B.R. Pantha & Mr. P. V. Doan
	Data Editing with Demonstration	
	Data Exporting from Database (Create Report	
	Data Importing (Data Assembling from various	
	Storing Pavement Condition and Traffic Volume	
10:30-10:45	Break	
10:45–11:30	Database System Updating / Editing	
	System Back-up	
	Discussion	
11:3013:20	Lunch Break	
	Session -II: Practicing on Database Operation and Management	
	Trainee will be divided into 4 groups and data input practices will be conducted in turn.	
13:20–13:30	Orientation on Computer Practice for database	Dr. B. R. Pantha & Mr. P. V. D
13:30–14:00	(Group 1) Practice in computer	Dr. B. R. Pantha and Mr. P. V. Doan
14:00–14:30	(Group 2) - ditto-	
14:30–15:00	(Group 3)-ditto-	
15:00–15:30	(Group 4) -ditto-	
15:30	The End!	

b.   Participant list

Table 4.3.7 Participants list (Act 1_3rd Training)

No.	Name	WG	Org.	Department	Position
1	Nguyen Khanh Toan	WG1	DRVN	Road Infrastructure and Traffic Safety Dep.	Expert
2	Quach Van Khoa	WG1	DRVN	Road Infrastructure and Traffic Safety Dep.	Director
3	Trinh Xuan Sinh	WG1	DRVN	Planning and investment Dep.	Expert
4	Nguyen Thi Thu Hang		DRVN	Information Center	-
5	Le Hoang Long		DRVN	Information Center	-
6	Nguyen Dinh Phuc		RRMU 2	Field Office 7	-
7	Tu Minh Phuong		RRMU 2	Field Office 6	Staff
8	Duong Dinh Hung		RRMU 2	Traffic Management Division	Staff
9	Hoang Ngoc Huy		RRMU 2	Technical and construction Man Div	Staff

10	Tran Thanh Tung		RRMU 2	Field Office 2	Staff
11	Pham Thi Ngoc Lan		RRMU 2	Field Office 5	Staff
12	Nguyen Van Tuyen		RRMU 2	Field Office 1	Staff
13	Nguyen Viet Anh		RRMU 2		Staff
14	Luong Xuan Ngoc		RTC- C	-	Specialist
15	Tran Thi My Ha		RTC - 2	Design Division	Staff
16	Nguyen Quang Huy		RTC - 2	Design Division	Staff
17	Nguyen Thi Huong		RTC 2	Design Division	Staff
18	Nguyen Hong Ha		Telsoft Com		Staff
19	Pham Thi Thang		Telsoft Com-		Staff

c. Photos

Explanation by Dr Pantha

Computer Practice

A4.3.2   Training on pavement condition survey (Activity 2.1)

(1)   Training (25-26th Feb 2014)

a. Training Program

Table 4.3.8 Training Schedule

1st day of training (Tuesday, 25th February 2014)		
Time	Contents	Trainer
9:00	Pick up at hotel by micro bus	
9:30	Registration at DRVN	Mr. Yoshiyasu TSUCHIYA (PASCO)
AM	Travel to starting point	
	Carrying out of field reconnaissance and survey	
12:00 - 13:00	Lunch	
PM	Continue carrying out of field reconnaissance and	
	Data check	
	Travel to DRVN	
17:00	End of 1st day training	
17:30	Arriving to hotel by micro bus	

2nd day training (Wednesday, 26th February 2014)		
Time	Contents	Trainer
9:30	Registration at Road Technical Canter Central	Mr. Kohei SAKAI (PASCO) Mr. Gaku SAITO (PASCO)
AM	Guidance of outline	
	Data conversion	
	Data analysis	
12:00 - 13:00	Lunch	
PM	Continue data analysis	
	Data output	
	Data processing	
17:00	End of 2nd day training	

b.   Participant list

Table 4.3.9 Participants list (Act 2.1_Training)

No.	Name	Organization	Department	Position
1	Từ Minh Phương	RRMB 1	Sub-bureau 6	Staff
2	Lê Văn Nam	RRMB 1	Road Maintenance & Management Dept.	Staff
3	Nguyễn Quang Huy	RTC I	Design Dept.	Staff
4	Trần Thị Mỹ Hà	RTC I	Design Dept.	Staff
5	Võ Sỹ Trung	RRMB II	Road Maintenance & Management Dept.	Staff
6	Nguyễn Công Hải	RRMB II	Traffic Safety Dept.	Staff
7	Nguyễn Đại Nghĩa	RTC	Science Technology Dept.	Deputy Director
8	Nguyễn Xuân Huy	RTC 2	Design Dept.	Staff
9	Hồ Như Ninh	RRMB III	Road Maintenance & Management Dept.	Deputy Director

10	Bùi Xuân Phú	RRMB III	Road Maintenance & Management Dept.	Staff
11	Nguyễn Văn Phương	RTC III	Technology Environment Dept.	Staff
12	Hoàng Ngọc Lựu	RTC III	Laboratory	Staff
13	Nguyễn Văn Thành	RRMB IV	Leader of RRMB IV	Deputy Director
14	Huỳnh Anh Tuấn	RRMB IV	Technical Planning Dept.	Staff
15	Trịnh Đông Phương	RTC 4	Design Dept.	Deputy Director
16	Lê Anh Tuấn	RTC 4	Design Dept.	Deputy Director

A4.3.3 Training on PMS and Road Maintenance Planning (Activity 2.2)

(1) 1st Training (27th Aug 2013)

a. Training Program

Table 4.3.10 Training Program (Act 2.2_1st Training)

Time	Contents	Trainer
	Registration and Opening	
9:00 – 9:10	Registration	
9:10 – 9:15	Opening Remarks	DRVN
	Section-1 Pavement Management System (PMS)	
9:15 – 10:00	Analysis on Pavement Condition Survey for RRMU2 Road Network	Mr. Tsuneo KATO
	Software Functions for Pavement Maintenance Planning	
	PMS Database Structure	
10:00–10:10	Discussion	
10:10–10:20	Break	
	Section-2 Data Conversion System (CS)	
10:20–11:05	Explanation about CS	Mr. Toshiya MATSUDA
	Basic Operation Using Sample Data	
11:00–11:20	Discussion	
11:20	End	

b. Participant list

Table 4.3.11 Participants list (Act 2.2_1st Training)

SN	Name	WG	Org.	Department	Position
1	Dang Cong Chien	WG1/2/3/4/5	DRVN	Science, tech, environment and Int'l Dep. & IC	Dep. Director
2	Ta Thi Thuy	WG2/3	DRVN	Planning and Investment Dep.	Expert
3	Nguyen Thi Hai Ha	WG2/5	DRVN	Planning and Investment Dep.	Expert
4	Trinh Xuan Sinh	WG1	DRVN	Planning and Investment Dep.	Expert
5	Nguyen Minh Chau	WG2	DRVN	Road Infrastructure & Traffic Safety Dep.	Expert
6	Tran Quoc Thanh	WG2/4	DRVN	Road Infrastructure & Traffic Safety Dep.	Expert
7	Nguyen Viet Tuan	WG3	DRVN	Science, tech, environment & Int'l Dep.	Expert
8	Trinh Huu Trung		DRVN	Information Center	Expert
9	Le Hoang Long		DRVN	Information Center	Expert

10	Nguyen Thi Thu Hang		DRVN	Information Center	Expert
11	Vu Quoc Hieu		DRVN	Construction Management Dep.	Expert
12	Nguyen Van Viet		DRVN	Construction Management Dep.	Expert
13	Duong The Anh		DRVN	Construction Management Dep.	Expert
14	Nguyen Khanh Hong		DRVN	Road Magazine	Expert
15	Ngo The Thong		DRVN	Central Road Maintenance Fund	Expert
16	Ngo Bich Thuy		DRVN	Central Road Maintenance Fund	Dep. Director
17	Nguyen Manh Cuong		DRVN	Information Center	Expert
18	Nguyen Thai Hung		DRVN	Construction Management Dep.	Expert
19	Dang Van Dung		RRMU 2	Field Office 3	Expert
20	Duong Dinh Hung		RRMU 2	Traffic Management Dep.	Expert
21	Nguyen Dai Nghia		RRMU 2	Field Office 4	Expert
22	Nguyen Dinh Phuc		RRMU 2	Field Office 2,7	Expert
23	Nguyen Van Tuyen		RRMU 2	Field Office 1	Expert
24	Pham Thi Ngoc Lan		RRMU 2	Field Office 5	Expert
25	Tran Thi My Ha		RTC-2	Design Division	Expert
26	Nguyen Quang Huy		RTC-2	Design Division	Expert
27	La Van Cham		UTC		Teacher
28	Truong Tuan Anh		UTC		Teacher
29	Mai Van Hong		MOT	Infrastructure Dep.	Dep.Director
30	Nguyen Hong Ha		TelSoft Co.		Staff
31	Pham Thi Thang		TelSoft Co.		Staff

c. Photos

Explanation on Computer

Explanation on Computer

A4.3.4   Training on Inspection Method (Activity 3.1)

(1)   1st Training (24th Jul 2013)

a. Training Program

Table 4.3.12 Training Program (Act 3.1 _1st Training)

Time	Contents	Trainer/Speaker
8:00 – 8:10	Registration	
8:10 – 8:15	Opening Remarks	DRVN
8:15 – 8:45	Background, objectives of project activity	JICA expert, Mr. Okuda
	Methodology	
8:45 – 9:30	Road Inspection Concept	JICA expert, Mr. Okuda
	Inspection Practices in Japan	
9:30 – 10:00	Current situation of Road Inspection in Vietnam & Orientation for Development Road Inspection Document	JICA expert, Mr. Okuda
10:00–10:15	Tea Break	
10:15–11:15	Case study of Japanese Inspection Practices - Bridge Inspection	JICA expert, Mr. Okuda
11:15-11:30	Discussion	
11:30	END	

b.   Participant list

Table 4.3.13 Participants list (Act 3.1 _1st Training)

SN	Name	WG	Org.	Department	Position
1	Ta Thị Thuỷ	W3	DRVN	Planning and investment Dep.	Expert
2	Cao Hoàng Cẩn	W3	DRVN	Vietnam Expressway Management Office	Expert
3	Trần quốc Toàn		DRVN	Road M&M	Expert
4	Nguyễn Ngọc Đàn		DRVN	Infrastructure and Road safety Dep.	Expert
5	Thiều Đức Long		DRVN	Science, tech, environment & Int'l Dep.	Dep. Director
6	Nguyễn Khánh Toàn		DRVN	Infrastructure and Road safety Dep.	Expert
7	Phạm Thị Ngọc Lan		RRMU 2	Site Office 5	Expert
8	Phạm Văn Tuấn		RRMU 2	Site Office 7	Expert
9	Nguyễn Anh Tú	W3	RRMU 2	Traffic Management Division	Director
10	Nguyễn Đại Nghĩa		RRMU 2	Traffic management Division	Expert
11	Nguyễn Vũ Tuấn	W3	RTC-C		Dep. Director
12	Nguyễn Thị Hường		RTC-2	Technical division	Staff
13	Trần thị Mỹ Hà		RTC-2	Design Division	Staff
14	Trần Ngọc Hưng		UTT		Staff

(2)   2nd Training 1st day (28 November, 2013)

a. Training Program

Table 4.3.14 Training Program (Act 3.1 _2ⁿᵈ Training 1ˢᵗ day)

Time	Contents	Trainer
	Registration Opening	
9:00 – 9:10	Registration	
9:10 – 9:15	Opening Remarks	DRVN
	Section-1 Lecture	
9:15–10:30	Introduction of schedule for OJT in the sites on 29ᵗʰ November 2013	Mr. Okuda Mr. Thao
	Introduction of the sites and targeted structures for inspection	
	Introduction of Inspection Method	
	Introduction of Inspection Diagnosis Samples	
	Introduction of Inspection Sheet Samples for Bridges	
	Introduction of Inspection Guidelines for Slopes & Lightings.	
	Introduction of Standard Samples for Structure Inspection & Evaluation	
	Section-2 Discussion	
10:30–11:00	Discussion	
11:00	End	

b.   Participant list

Table 4.3.15 Participants list (Act 3.1 _2ⁿᵈ Training 1ˢᵗ day)

SN	Name	WG	Org.	Department	Position
1	Đinh Tuấn Tú		DRVN	Science, tech, environment & Int'l Dep.	
2	Nguyễn Văn Khôi		RRMU 2	Field Office 5	
3	Từ Minh Phương		RRMU 2	Field Office 6	
4	Nguyễn Danh Anh		RRMU 2	Field Office 8	
5	Nguyễn Tiến Đạt		RTC		
6	Đỗ Trường Quân		RTC		
7	Nguyễn Quang Huy		RTC-2		

(3)   2nd Training 2nd day (29th November, 2013)

a.Training Program

Time	Contents	Trainer/Speaker
AM	Other Bridge structures on National Road No.1 Visit the first site: National Road No.1 (Phap Van-Cau Gie Section): around Km183+500 to Km187. Conduct inspection and measurements on the targeted facilities including information collection for report preparation;	JICA expert, Mr. Okuda
	Lunch Break	
PM	Bridge structures Visit the second site:National Road No.6 (Luong Son District Area): Km45+280m (Rồng Dài Bridge). Conduct inspection and measurement on the targeted bridge facilities including information collection for report preparation;	JICA expert, Mr. Okuda
	END	

b. **Participant list**

Table 4.3.16 Participants list (Act 3.1 _2nd Training 2nd day)

No.	Name	WG	Org.	Department	Position
1	Phạm Văn Toản		RRMU 2	Field Office 1	
2	Trần Nam Dương		RRMU 2	Field Office 3	
3	Vũ Hồng Hải		RRMU 2	Field Office 3	
4	Phạm Văn Phóng		RRMU 2	Field Office 4	
5	Nguyễn Trung Hiệu		RRMU 2	Field Office 4	
6	Nguyễn Văn Khôi		RRMU 2	Field Office 5	
7	Phạn Văn Duy		RRMU 2	Field Office 5	
8	Từ Minh Phương		RRMU 2	Field Office 6	
9	Nguyễn Văn Dinh		RRMU 2	Field Office 7	
10	Lương Văn Hưng		RRMU 2	Field Office 7	
11	Nguyễn Danh Anh		RRMU 2	Field Office 8	
12	Nguyễn Thành Anh		RRMU 2	Field Office 8	
13	Nguyễn Tiến Đạt		RTC-C		
14	Đỗ Trường Quân		RTC-C		
15	Trần Thị Mỹ Hà		RTC2		
16	Nguyễn Quang Huy		RTC2		
17	Nguyễn Mạnh Duy		DRVN	Road Magazine	

c.Photos

On the Job Training

On the Job Training

A4.3.5   Training on Routine Maintenance Standard (Activity 3.2a)

(1)   1st Training (18th July, 2013)

a. Training Program

Table 4.3.17 Training Program (Act 3.2a _1st Training)

Time	Contents	Trainer
	Registration and Opening	
8:00 – 8:10	Registration	
8:10 – 8:15	Opening Remarks	DRVN
	Session -I: Project Enhancement Activity for Road Inspection and Maintenance Technology	
8:15 – 8:30	Background, objectives of project	Dr.Kusano JICA Expert
	Methodology	
	Session -II: Development and Structure of New Routine Maintenance Standard by JICA Team	
8:30 – 9:15	Current Status of DRVN Standard of Road Routine Maintenance	Dr. Tran Thi Kim Dang
	Idea of New Standard and Methodology to develop the New Standard of Road Routine Maintenance	
	Structure of New Standard of Road Routine Maintenance	
9:15 – 9:45	Discussion	
9:45 – 10:00	Tea Break	
10:00–10:30	Remarkable Points of Improvement of the New Standard of Road Routine Maintenance by JICA Team	Dr. Tran Thi Kim Dang
	Potential disadvantages and constrains of New Standard application in Vietnam condition	
	Session - III: Japanese Practices on Road Routine Maintenance	
10:30–11:30	Concept	Dr.Kusano JICA Expert
	Inspection	
	Maintenance	
11:30-11:50	Discussion	
11:50	END	

b.   Participant list

Table 4.3.18 Participants list (Act 3.2a _1st Training)

No.	Name	WG	Org.	Department	Position
1	Nguyen Viet Tuan	WG3	DRVN	Science, tech, environment & Int'l Dep.	Expert
2	Cao Hoang Can	WG3	DRVN	Vietnam Expressway Management Office	Expert
3	Nguyen Minh Chau	WG2	DRVN	Road Infrastructure & Traffic Safety Dep.	Expert
4	Nguyen Van Minh	WG2/4	DRVN	Planning and Investment Dep.	Expert
5	Thieu Duc Long	WG3	DRVN	Science, tech, environment & Int'l Dep.	Dep.
6	Tran Ba Dat		DRVN	Road Infrastructure & Traffic Safety Dep.	Expert
7	Le Hong Diep		DRVN	Road Maintenance Management Dep.	Expert
8	Nguyen Van Thach		DRVN	Road Maintenance Management Dep.	Expert
9	Nguyen Duc Tuong		DRVN	Road Maintenance Management Dep..	Expert
10	Vu Xuan Mai		DRVN	Road Maintenance Management Dep.	Expert
11	Nguyen Khanh		DRVN	Road Magazine	Expert
12	Nguyen Thi Thu		DRVN	Information Center	Expert
13	Bui Duy Tien		DRVN	Information Center	Expert

14	Le Hoang Long		DRVN	Information Center	Expert
15	Trinh Huu Chung		DRVN	Information Center	Expert
16	Dang Dinh Ha		DRVN	Construction Management Dep.	Expert
17	Tran Hieu		DRVN	Construction Management Dep.	Expert
18	Nguyen Ngoc Son		RRMU		Dep.
19	Nguyen Anh Tu	WG3/4/5	RRMU	Traffic Management Dep.	Director
20	Pham Thi Ngoc Lan		RRMU	Field Office No.5	Expert
21	Nguyen Van Dan		RTC-C		Dep.
22	Nguyen Vu Tuan	WG3/4/5	RTC-C		Dep.
23	Dinh Van Hiep		NUCE	Institute of Transportation Engineering Planning	Director
24	Bui Phu Doanh		NUCE	Road faculty	Lecturer
25	Tran Ngoc Huy			Institute of Science & Technology	Expert
26	Doan Minh Tam		VRBA	Road Association	Expert
27	Vu Ngoc Khue		VRBA	Road Association	Expert
28	Nguyen Hoang Van		UTC		Lecture
29	Mai Van Hong		MOT	Infrastructure Dep.	Dep.
30	Ho Anh Cuong		UTC		Lecture
31	Vu Phuong Thao		UTC		Lecture

(2)   2nd Training (27TH September, 2013)

a.Training Program

Table 4.3.19 Training Program (Act 3.2a _2nd Training)

Time	Contents		Lecturer
Registration and Opening			
8:00 – 8:20	Registration		
8:20 – 8:25	Opening Remarks		DRVN
Session -I: New Routine Maintenance Standard (Asphalt Pavement)			
8:25 – 8:55	Types and Causes of Failure		Dr. Tran Thi Kim Dang
	Selection of Maintenance Methods		
	Maintenance Methods		
8:55 – 9:10	Discussion		
Session -II: New Routine Maintenance Standard (Concrete Pavement)			
9:10 – 9:50	Types and Causes of Failure		Dr.Kusano JICA Expert
	Selection of Maintenance Methods		
	Maintenance Methods		
9:50–10:05	Discussion		
10:05-10:20	Break		
Session -III: New Routine Maintenance Standard (Other Items)			
10:20–10:50	Bridge		Dr. Tran Thi Kim Dang
	Drainage		
	Slopes and others		
10:5011:05	Discussion		
Session –IV: New Routine Maintenance Standard (Acceptance Procedure)			
11:05–	Inspection		

11:40	Work Performance	Dr.Kusano JICA Expert
	Acceptance Criteria	
11:40-11:55	Discussion	
11:55-12:00	Ending Remark	DRVN

b. **Participant list**

Table 4.3.20 Participants list (Act 3.2a _2ⁿᵈ Training)

No.	Name	WG	Org.	Department	Position
1	Tran Xuan Cuong		MOT	Infrastructure Dep.	
2	Ta Thi Thuy	WG2/3	DRVN	Planning and Investment Dep.	Expert
3	Dang Cong Chien	WG1/2/3/4/5	DRVN	Science, tech, environment and Int'l Dep.	Dep. Director
4	Nguyen Viet Tuan	WG3	DRVN	Science, tech, environment & Int'l Dep.	Expert
5	Tran Quoc Thanh	WG2/4	DRVN	Road Infrastructure & Traffic Safety	Expert
6	Nguyen Thi Lanh		DRVN	Infrastructure Dep.	
7	Trinh Huu Trung		DRVN	Information Technology Center	
8	Nguyen Khanh		DRVN	Road Magazine	
9	Vu Minh Thuan		DRVN	PMU3	
10	Trinh Tuan Nghia		DRVN	PMU3	
11	Nguyen Van Son		RRMU 2		
12	Nguyen Ngoc		RRMU 2	Field Office -1	
13	Vu Van Duy		RRMU 2	Field Office -5	
14	Nguyen Viet Anh		RRMU 2		
15	Tu Minh Phuong		RRMU 2	Field Office -6	Expert
16	Nguyen Manh		VRBA	(Vietnam Road and Bridge Association)	
17	Doan Minh Tam		VRBA	(Vietnam Road and Bridge Association)	
18	Lam Huu Quang		ITST		
19	Tran Trung Dung		ITST		
20	Nguyen Thanh		ITST		
21	Bui Phu Doanh		NUCE		
22	Cao Phu Cuong		NUCE		
23	Vu Hoai Nam		UTT		
24	Hoang Thanh		UTC		
25	Nguyen Dinh		UTC		
26	Vu Phuong Thao		UTC		

A4.3.6 Training on PMoS (Act 3.3)

(1) 1st Training (2nd Aug, 2013)

a.Training Program

Table 4.3.21 Training Program (Act 3.3 _1ˢᵗ Training)

Time	Contents	Trainer
	Registration Opening	
9:00 – 9:10	Registration	
9:10 – 9:15	Opening Remarks	DRVN
	Section-1 Lecture	
9:15–10:00	Summary	Mr. Toshinori Kanazawa
	Function and Operation	
	Data format	
	Arrange and Maintenance	
10:00–10:10	Discussion	
10:10–10:20	Tea Time	
	Section-2 Computer Practice	
10:20–11:00	Basic Operation Using Sample Data	Mr. Toshinori Kanazawa
	Application of the PMoS Output	
11:00–11:20	Discussion	
11:20	End	

b.   Participant list

Table 4.3.22 Participants list (Act 3.3 _1ˢᵗ Training)

No.	Name	WG	Org.	Department	Position
	Nguyen Viet Tuan	WG3	DRVN	Science, tech, environment & Int'l Dep.	Expert
	Tạ Thị Thuỷ	WG2/3	DRVN	Planning & Investment Dep.	Expert
	Nguyen Dac Nam		DRVN	Road Maintenance & Management Dep.	Expert
	Tran Tuan Anh		DRVN	Road Maintenance & Management Dep.	Expert
	Bui Duy Tien		DRVN	Information Technology Center	Expert
	Le Hoang Long		DRVN	Information Technology Center	Expert
	Nguyen Thu Hang		DRVN	Information Technology Center	Expert
	Nguyen Thi Tham		DRVN	Information Technology Center	Expert
	Nguyen Anh Tu	WG3/4/5	RRMU 2	Traffic Management Dep.	Director
	Vu Van Duy		RRMU 2	Field Office 5	
	Tu Minh Phuong		RRMU 2	Field Office 6	Expert
	Nguyen Gia Tuan		RTC-C		Expert
	Nguyen Vu Tuan	WG3/4/5	RTC-C		Dep. Director

c. Photos

Explanation by Mr Kanazawa

Computer Practice

(2)   2nd Training (18th Sep, 2013)

    a. Training Program

Table 4.3.23 Training Program (Act 3.3 _2nd Training)

Time	Contents	Trainer
	Registration Opening	
9:00 – 9:10	Registration	
9:10 – 9:15	Opening Remarks	DRVN
	Section-1 Lecture	
9:15– 10:00	Summary of Activity 3.3	Mr. Toshinori Kanazawa
	Development of the PMoS	
	Report of OJT for the PMoS	
	Issues in the Future	
	Section-2 PMoS Demonstration	
10:00–10:20	Demonstration of the PMoS	Mr. Toshinori K
10:20-10:30	Discussion	
10:30	End	

    b.   Participant list

Table 4.3.24 Participants list (Act 3.3 _2nd Training)

No.	Name	WG	Org.	Department	Position
	Cao Hoang Can	WG3	DRVN	Vietnam Expressway Management Office	Expert
	Ta Thi Thuy	WG2/3	DRVN	Planning and Investment Dep.	Expert
	Nguyen Trong Phu	WG3	DRVN	PMU TA	Director
	Nguyen Viet Tuan	WG3	DRVN	Science, tech, environment & Int'l Dep.	Expert
	Nguyen Thi Nhat	WG5	DRVN	Organization & Personnel Dep.	Dep. Director
	Thieu Duc Long	WG3	DRVN	Science, tech, environment & Int'l Dep.	Dep. Director
	Tran Ngoc Duy		DRVN		
	Trinh Huu Trung		DRVN	Information Technology Center	
	Nguyen Thi Thu Hong		DRVN	Information Technology Center	

Le Hoang Long		DRVN	Information Technology Center	
Nguyen Anh Tu	WG3/4/5	RRMU 2	Traffic Management Dep.	Director
Pham Thi Ngoc Lan		RRMU 2	Field Office 5	
Nguyen Ngoc Anh		RRMU 2		
Le Huu Khanh		RRMU 2	Field Office 2	
Nguyen Vu Tuan	WG3/4/5	RTC-C		Deputy Director
Nguyen Tri Dung	WG3	RTC-2		
Luu Quang Tuan		RTC		

A4.3.7 Evaluation Result

Survey Resutls for Trainings 2013

PROFILE
Organization of respondents

DRVN	18	90%
RRMU-2	1	5%
RTC-Central	1	5%
N/A	0	0%
Total	20	100%
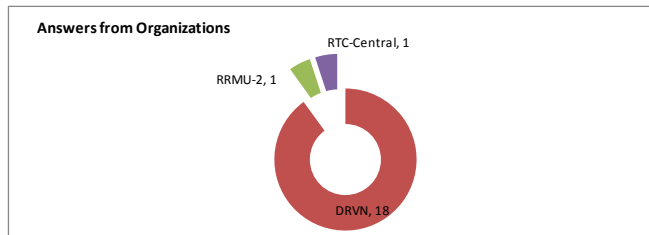
WGs of respondents

		total member	
WG1	5	7	71%
WG2	8	8	100%
WG3	7	11	64%
WG4	8	12	67%
WG5	6	8	75%
Total	34	46	74%
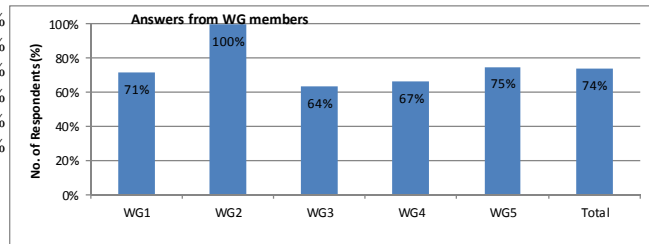
Q1. Training/Workshop participated
Please be noted that there is descrepancies in Panticipant list and this survey data.

Act1_1st	4	80%
Act1_2nd	4	80%
Act1_3rd	4	80%
Act2.2a_1st	3	38%
Act2.2b_1st	5	71%
Act3.1_1st	4	57%
Act3.1_2nd First day	1	14%
Act3.1_2nd Second day	1	14%
Act3.2a_1st	5	71%
Act3.2a_2nd	3	43%
Act3.2b_1st	5	71%
Act3.2b_2nd	3	43%
Act3.3_1st	5	71%
Act3.3_2nd	5	71%
Act4_1st	4	50%
Act4_2nd	4	50%
Workshop	4	20%
N/A	1	2%
Total	65	100%
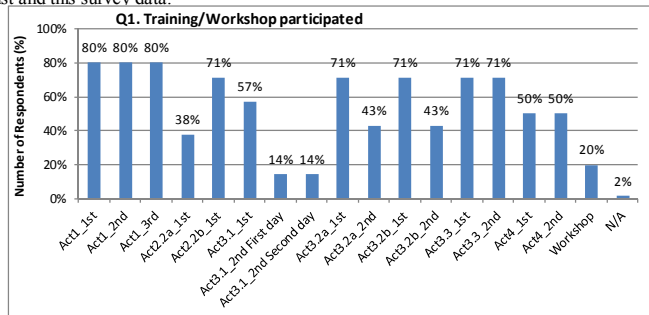
Q2.Utilization of knowledge and skill gained at trainings (Multi answers)

Further research	1	4%
Share w colleague	14	61%
Apply to work	2	9%
None	3	13%
Others	3	13%
N/A	1	4%
Total	23	100%
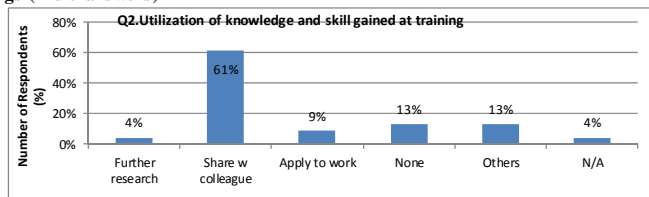
Others
Not suitable with assigned work

Q3. Reason for not attending trainings (Multi Answer)

Too busy	9	45%
Not interested	0	0%
Not invited	2	10%
Sufficient knowledge	0	0%
Financial constraints	0	0%
Not allowed	1	5%
No training	0	0%
Others	1	5%
N/A	7	35%
Total	20	100%
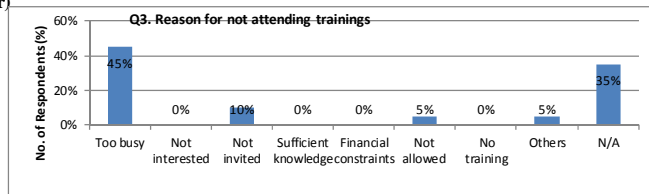
Q4.Evaluation of Training program 2013

Q4.1.Type of training course offered

Very satisfied	0	0%
Satisfied	5	25%
Fair	10	50%
Dissatisfied	1	5%
Very dissatisfied	0	0%
N/A	4	20%
Total	20	
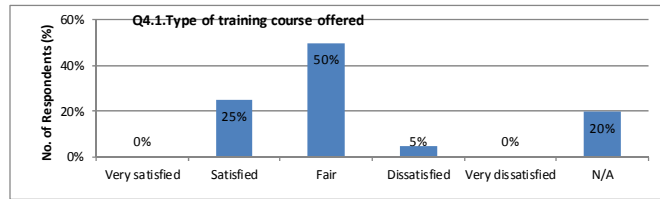
Q4.2.Contents covered at training

Very satisfied	0	0%
Satisfied	5	25%
Fair	7	35%
Dissatisfied	4	20%
Very dissatisfied	0	0%
N/A	4	20%
Total	20	
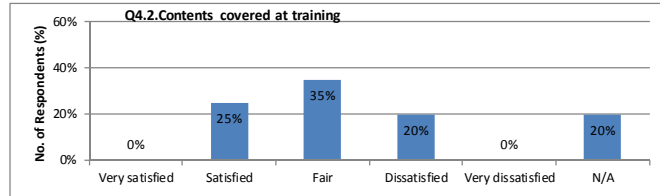
Q4.3.Level of training contents offered

Very satisfied	0	0%
Satisfied	3	15%
Fair	10	50%
Dissatisfied	3	15%
Very dissatisfied	0	0%
N/A	4	20%
Total	20	
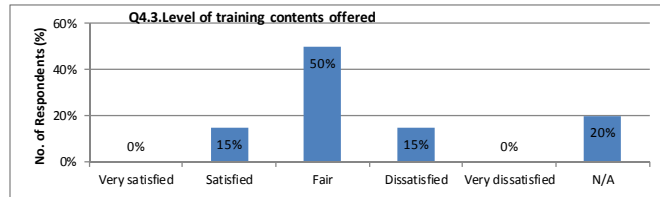
Q4.4.Number of training offered

Very satisfied	0	0%
Satisfied	6	30%
Fair	9	45%
Dissatisfied	1	5%
Very dissatisfied	0	0%
N/A	4	20%
Total	20	
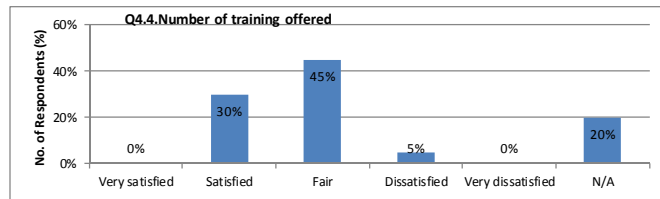
Q4.5.Number of trainees participated

Very satisfied	0	0%
Satisfied	4	20%
Fair	8	40%
Dissatisfied	3	15%
Very dissatisfied	1	5%
N/A	4	20%
Total	20	
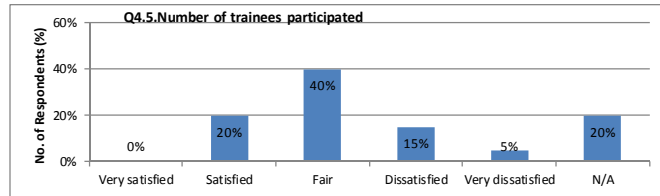
Q4.6.Selection of targeted trainees

Very satisfied	0	0%
Satisfied	7	35%
Fair	8	40%
Dissatisfied	1	5%
Very dissatisfied	0	0%
N/A	4	20%
Total	20	
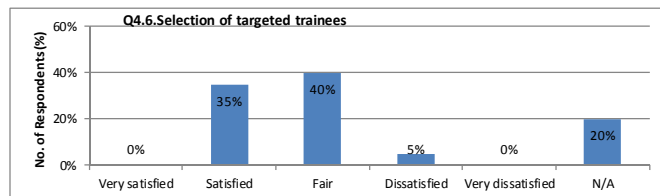
Q4.7. Quality and Capacity of Trainers

Very satisfied	0	0%
Satisfied	6	30%
Fair	10	50%
Dissatisfied	0	0%
Very dissatisfied	0	0%
N/A	4	20%
Total	20	
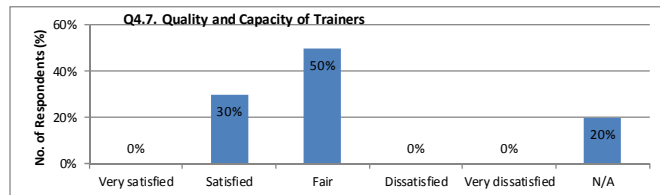
Q4.8. Training Method applied

Very satisfied	0	0%
Satisfied	6	30%
Fair	10	50%
Dissatisfied	0	0%
Very dissatisfied	0	0%
N/A	4	20%
Total	20	
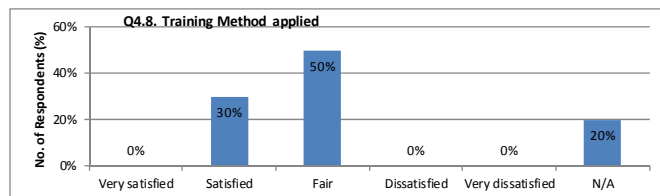
Q4.9. Training Material offered

Very satisfied	0	0%
Satisfied	7	35%
Fair	7	35%
Dissatisfied	2	10%
Very dissatisfied	0	0%
N/A	4	20%
Total	20	
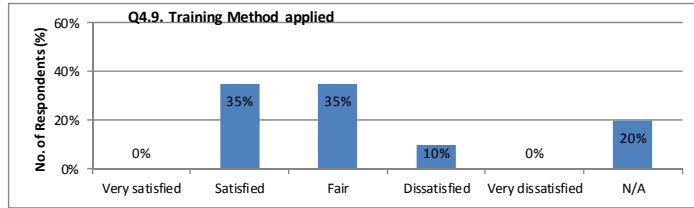
Q4.10. Knowledge and skill developed

Very satisfied	0	0%
Satisfied	4	20%
Fair	10	50%
Dissatisfied	2	10%
Very dissatisfied	0	0%
N/A	4	20%
Total	20	
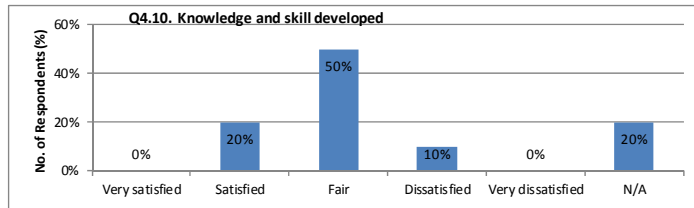
Q5.Contribution of Trainings to Project Activities and Aim

Q5.1. Validity of training

Very much	0	0%
very	8	40%
Fair	7	35%
Less	2	10%
Not at all	0	0%
N/A	3	15%
Total	20	100%
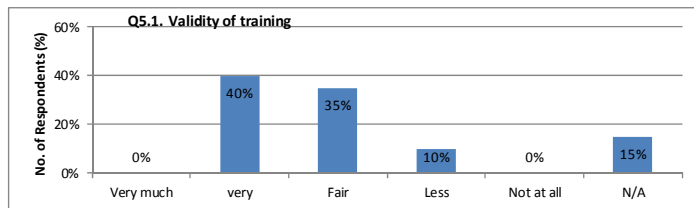
Others

-Trainings/Workshops on project activities are not so effective

-Trainings/Workshops are in general and not focused on training issues

-Through trainings, workshops, the Consultants has proposed good training methods to spread-out project outcomes

-Interaction between two sides is not high, comments are recorded by are not been incorporated into project studies

Q5.2. Contribution of training

Very much	0	0%
very	8	40%
Fair	7	35%
Less	2	10%
Not at all	0	0%
N/A	3	15%
Total	20	100%
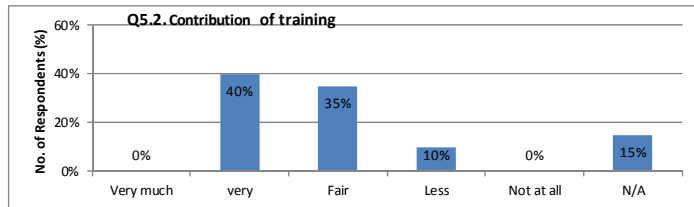
Others

-The workshop/Training impacted on the operation and development results of project activities but the overall effect is not clear

-Consultant is requested to modify to suit with current maintenance situation in Vietnam through comments of meeting participants

-The workshop/Training impacted on the operation and development results of project activities but the overall effect is not clear

Q5.3. Efficiency of training

Very much	0	0%
very	8	40%
Fair	9	45%
Less	0	0%
Not at all	0	0%
N/A	3	15%
Total	20	100%
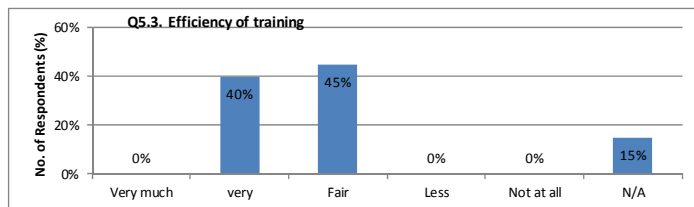
Others

-The workshop/Training impacted on the operation and development results of project activities but the overall effect is not clear

-Consultant is requested to modify to suit with current maintenance situation in Vietnam through comments of meeting participants

-There is the recognition and promotion of the efficiency of the two sides but it is not fully completed and results

Q5.4. Impacts of training

Very much	0	0%
very	11	55%
Fair	6	30%
Less	0	0%
Not at all	0	0%
N/A	3	15%
Total	20	100%
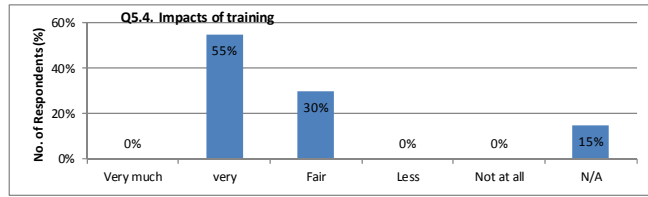
Others

-Training brings to the positive impact of the project activities

-Trainings/Workshops are in general and not focused on training issues

-Trainings bring positive impacts to project activities. For example, it's not convenient for end-users, Consultant is requested to modify.

-Training brings to the positive impact of the project activities

Q5.5. Benefit of training

Very much	0	0%
very	4	20%
Fair	11	55%
Less	2	10%
Not at all	0	0%
N/A	3	15%
Total	20	100%
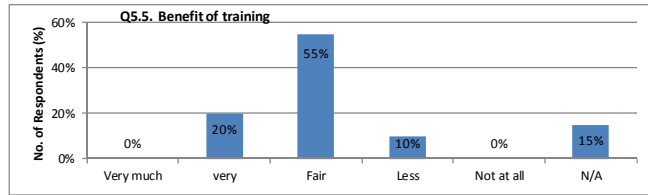
Others

-Training brings the benefits for road maintenance activities in Vietnam, but efficiency is not high

-Through trainings, end-users can approach automation technologies in pavement survey, data diagnosis, planning of annual and mid-term maintenance plan

-There are benefits for Vietnam road maintenance activities and contribution after completion of the project. If not remain especially during completion of the project, the project will

Q6.1. Involvement on Training implementation

Q6.1. Discuss demand and needs

Very much	0	0%
Very	8	40%
Fair	7	35%
Less	2	10%
Not at all	0	0%
N/A	3	15%
Total	20	100%
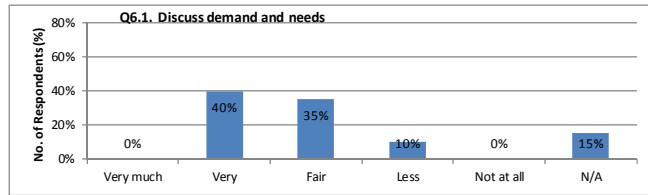
Q6.2. Discuss training plan

Very much	1	5%
Very	6	30%
Fair	8	40%
Less	2	10%
Not at all	0	0%
N/A	3	15%
Total	20	100%
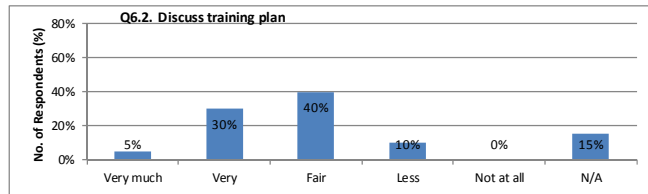
Q6.3. Develop training detail

Very much	1	5%
Very	5	25%
Fair	11	55%
Less	0	0%
Not at all	0	0%
N/A	3	15%
Total	20	100%
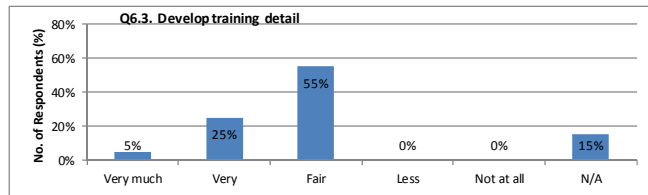
Q6.4. Assist implementation of training

Very much	1	5%
Very	6	30%
Fair	9	45%
Less	1	5%
Not at all	0	0%
N/A	3	15%
Total	20	100%
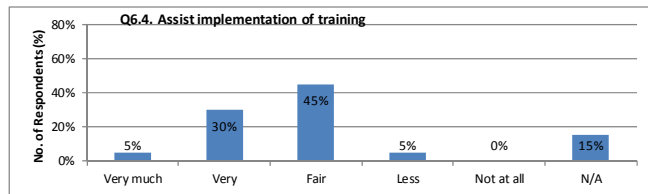
Q6.5. Monitor and evaluate training

Very much	0	0%
Very	3	15%
Fair	12	60%
Less	1	5%
Not at all	0	0%
N/A	4	20%
Total	20	100%
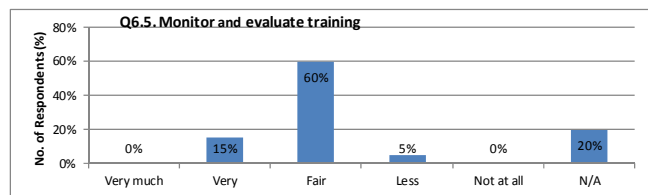
Q6.6. Disseminate information and technology

Very much	0	0%
Very	4	20%
Fair	13	65%
Less	0	0%
Not at all	0	0%
N/A	3	15%
Total	20	100%
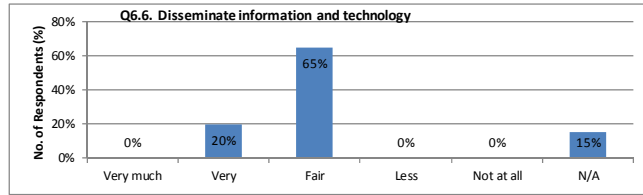
Q6.7. Review training

Very much	0	0%
Very	3	15%
Fair	12	60%
Less	1	5%
Not at all	1	5%
N/A	3	15%
Total	20	100%
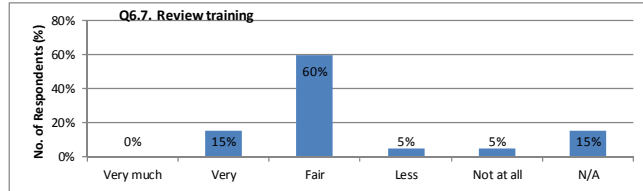
Q6.8. Discuss future training demand

Very much	1	5%
Very	4	20%
Fair	10	50%
Less	2	10%
Not at all	0	0%
N/A	3	15%
Total	20	100%
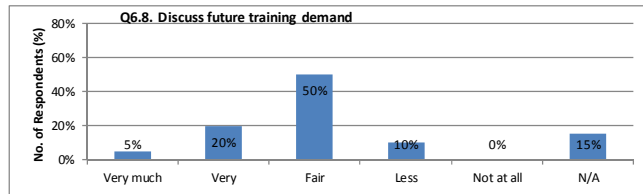
Q7. Reasons for not participating implementation of trainings

Too busy	9	45%
No interest	0	0%
Not invited	1	5%
Not allowed	0	0%
Not responsible	0	0%
Others	3	15%
N/A	7	35%
Total	20	100%
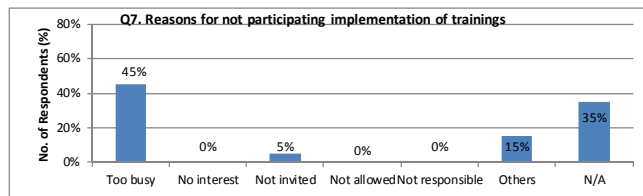
Q8.Factors required for improvement of training
Comparison of total of " Very important and Important of all items.

Training Program	18	75%
Training facility and equipment	12	50%
Trainers	17	71%
Leading person and Department	15	63%
Allocation of staff	11	46%
Support by training agencies	16	67%
Support by experts	15	63%
Clarification of authority and resp	11	46%
Training procedure and system	16	67%
Policy, Plan and Strategy	16	67%
Legal framework	14	58%
Current Staff Capacity	17	71%
Understanding on importance of	15	63%
Internal and External Communica	15	63%
Securing Budget	16	67%
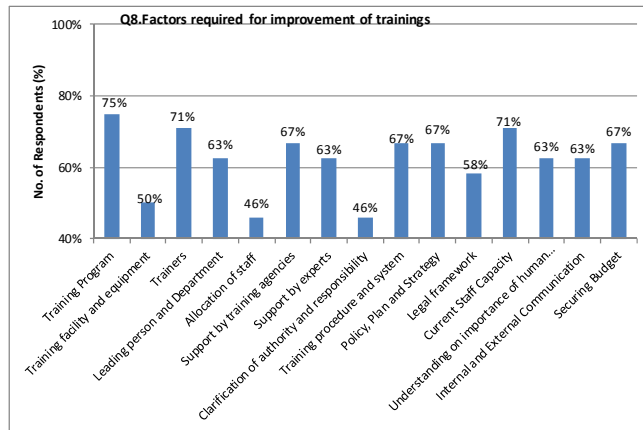
Q8.1. Training Program

Very Important	8	40%
Important	10	50%
Fair	1	5%
Less Important	0	0%
Not Important	0	0%
N/A	1	5%
Total	20	100%
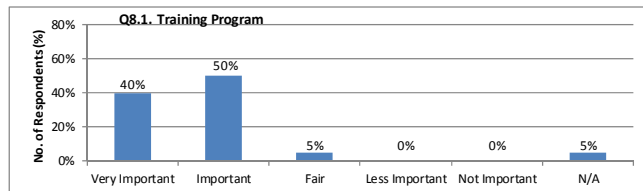
**Q8.2. Training facility and equipment**

Very Important	5	25%
Important	7	35%
Fair	6	30%
Less Important	0	0%
Not Important	0	0%
N/A	2	10%
Total	20	100%
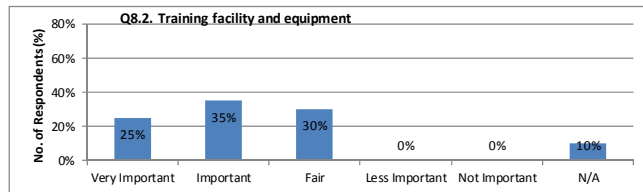
Q8.3. Trainers

Very Important	6	30%
Important	11	55%
Fair	1	5%
Less Important	0	0%
Not Important	0	0%
N/A	2	10%
Total	20	100%
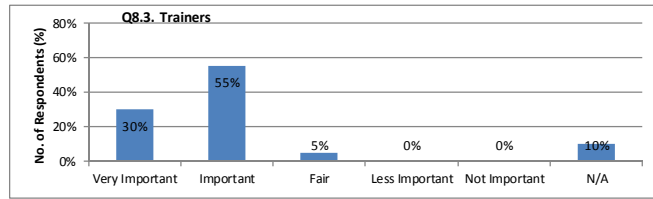
Q8.4. Leading person and Department

Very Important	2	10%
Important	13	65%
Fair	3	15%
Less Important	0	0%
Not Important	0	0%
N/A	2	10%
Total	20	100%
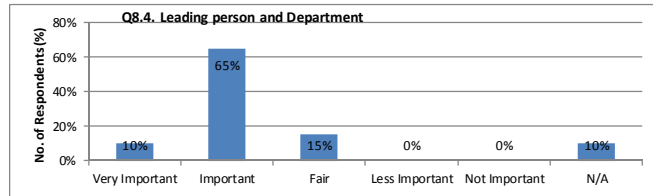
Q8.5. Allocation of staff

Very Important	0	0%
Important	11	55%
Fair	8	40%
Less Important	0	0%
Not Important	0	0%
N/A	1	5%
Total	20	100%
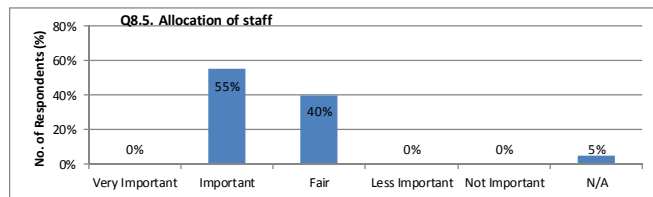
Q8.6. Support by experienced agencies in training

Very Important	4	20%
Important	12	60%
Fair	3	15%
Less Important	0	0%
Not Important	0	0%
N/A	1	5%
Total	20	100%
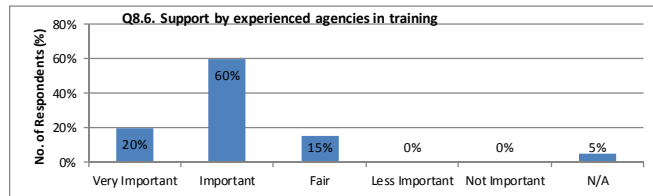
Q8.7. Support by experts in the field

Very Important	7	35%
Important	8	40%
Fair	3	15%
Less Important	0	0%
Not Important	0	0%
N/A	2	10%
Total	20	100%
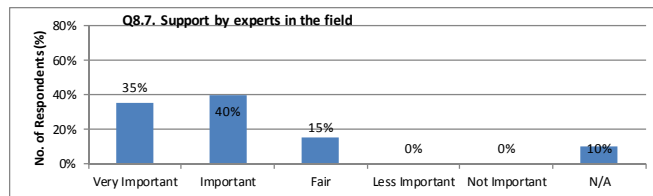
Q8.8. Clarification of authority and responsibility

Very Important	1	5%
Important	10	50%
Fair	3	15%
Less Important	1	5%
Not Important	0	0%
N/A	5	25%
Total	20	100%
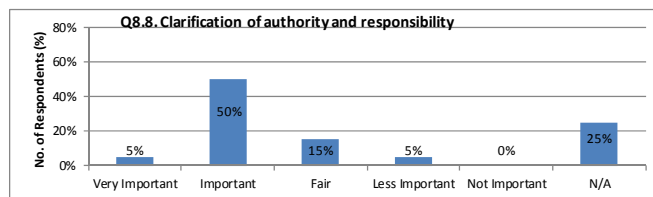
Q8.9. Training procedure and system

Very Important	6	30%
Important	10	50%
Fair	2	10%
Less Important	0	0%
Not Important	0	0%
N/A	2	10%
Total	20	100%
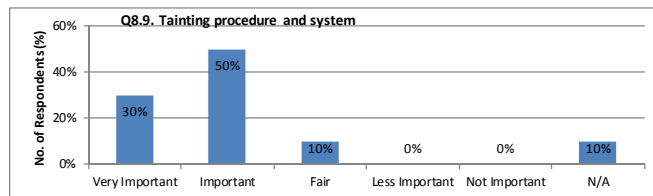
Q8.10. Policy, Plan and Strategy

Very Important	7	35%
Important	9	45%
Fair	1	5%
Less Important	0	0%
Not Important	0	0%
N/A	3	15%
Total	20	100%
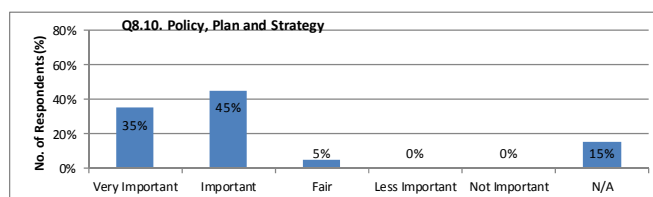
Q8.11. Legal framework

Very Important	4	20%
Important	10	50%
Fair	4	20%
Less Important	0	0%
Not Important	0	0%
N/A	2	10%
Total	20	100%
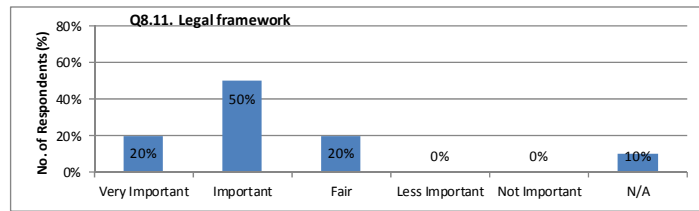
Q8.12.Curent Staff Capacity

Very Important	3	15%
Important	14	70%
Fair	0	0%
Less Important	0	0%
Not Important	0	0%
N/A	3	15%
Total	20	100%
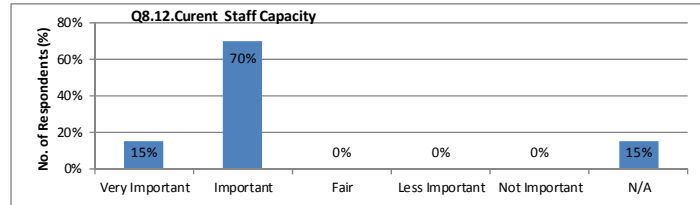
Q8.13.Understanding on importance of human resource development

Very Important	5	25%
Important	10	50%
Fair	2	10%
Less Important	0	0%
Not Important	0	0%
N/A	3	15%
Total	20	100%
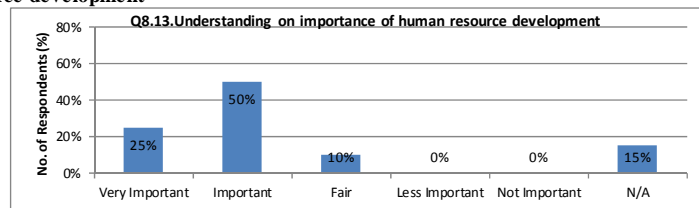
Q8.14.Internal and External Communication

Very Important	3	15%
Important	12	60%
Fair	4	20%
Less Important	0	0%
Not Important	0	0%
N/A	1	5%
Total	20	100%
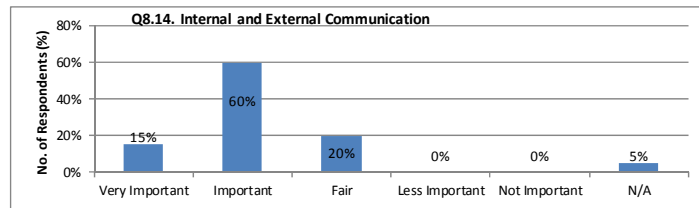
Q8.15.Securig Budget

Very Important	6	30%
Important	10	50%
Fair	3	15%
Less Important	0	0%
Not Important	0	0%
N/A	1	5%
Total	20	100%
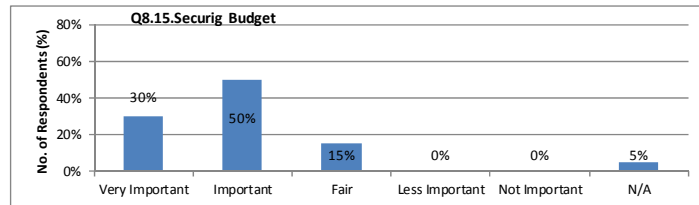
Q8.16. Others

N/A

Q9.Traning needs and demand

Following analysis is carried out against total no of each working group members asnwered to their WG demand.

Q9.1 Act.1 Road data base_System development

|		
Very much	1	20%
Very	1	5%
Fair	2	10%
Less	0	0%
Not at all	0	0%
N/A	1	5%
Total no WG1 member answered	5	
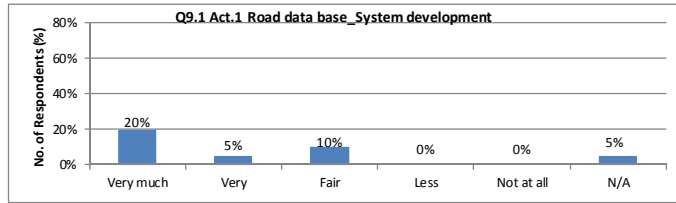
Q9.1 Act.1 Road data base_Data inputting

Very much	1	20%
Very	1	20%
Fair	2	40%
Less	0	0%
Not at all	0	0%
N/A	1	20%
Total no WG1 member answered	5	
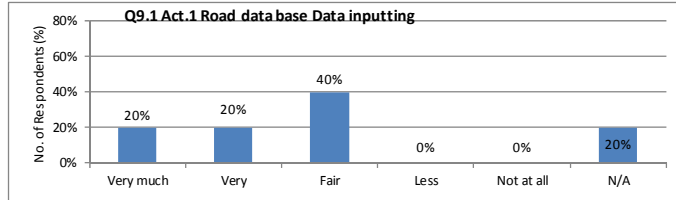
Q9.1 Act.1 Road data base_System operation & management

|		
Very much	2	40%
Very	1	20%
Fair	2	40%
Less	0	0%
Not at all	0	0%
N/A	0	0%
Total no WG1 member answered	5	
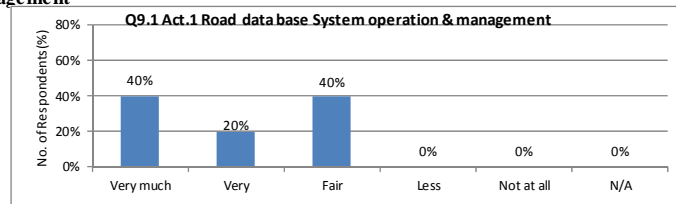
Q9.1 Act.1 Road data base_Others

-Data processing; Specify input-output data

Q9.2 Act.2.1 Pavement Condition Survey_System Management

|		
Very much	3	38%
Very	2	25%
Fair	1	13%
Less	0	0%
Not at all	0	0%
N/A	2	25%
Total no WG2 member answered	8	
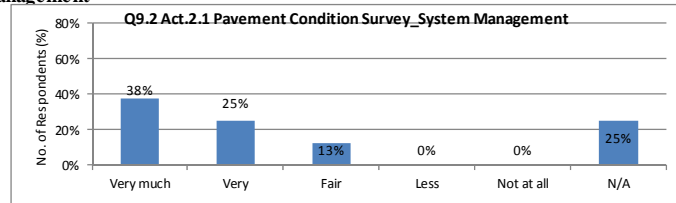
Q9.2 Act.2.1 Pavement Condition Survey_Data analysis and application

Very much	2	25%
Very	3	38%
Fair	1	13%
Less	0	0%
Not at all	0	0%
N/A	2	25%
Total no WG2 member answered	8	
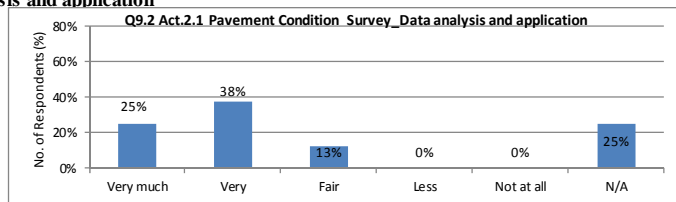
Q9.2 Act.2.1 Pavement Condition Survey_Others

-Software are compatible, synchronized and modern

Q9.3 Act.2.2a PMS_System Development

Very much	4	50%
Very	2	25%
Fair	0	0%
Less	0	0%
Not at all	0	0%
N/A	2	25%
Total no WG2 member answered	8	
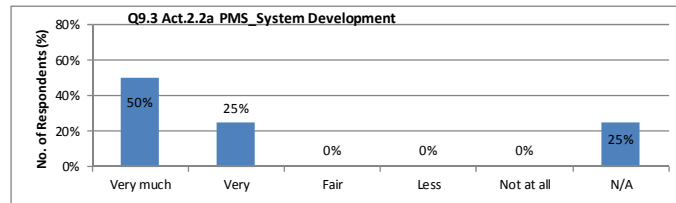
Q9.3 Act.2.2a PMS_Data Conversion System

|		
Very much	4	50%
Very	2	25%
Fair	0	0%
Less	0	0%
Not at all	0	0%
N/A	2	25%
Total no WG2 member answered	8	
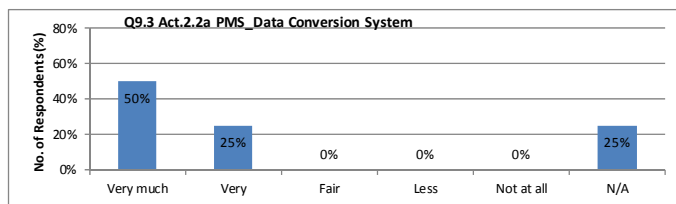
Q9.3 Act.2.2a PMS_System Operation & Management

Very much	3	38%
Very	3	38%
Fair	0	0%
Less	0	0%
Not at all	0	0%
N/A	2	25%
Total no WG2 member answered	8	
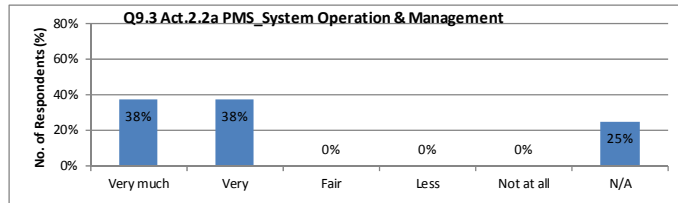
Q9.3 Act.2.2a PMS_Others

-Automatic update and fluctuations over time

Q9.4 Act.2.2b Road Maintenance Planning_System Development

Very much	5	63%
Very	2	25%
Fair	1	13%
Less	0	0%
Not at all	0	0%
N/A	0	0%
Total no WG2 member answered	8	
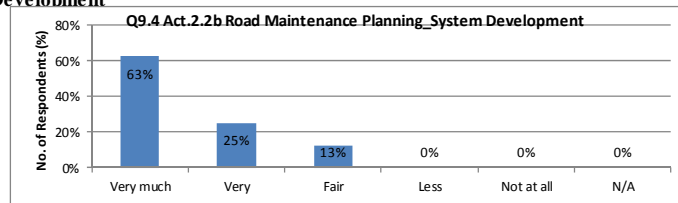
Q9.4 Act.2.2b Road Maintenance Planning_System Operation & Management

Very much	5	63%
Very	2	25%
Fair	1	13%
Less	0	0%
Not at all	0	0%
N/A	0	0%
Total no WG2 member answered	8	
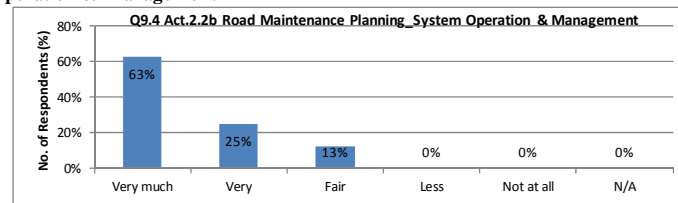
Q9.4 Act.2.2b Road Maintenance Planning_Data Analysis & Application

Very much	5	63%
Very	2	25%
Fair	1	13%
Less	0	0%
Not at all	0	0%
N/A	0	0%
Total no WG2 member answered	8	
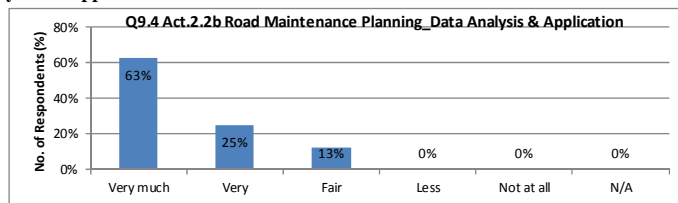
Q9.4 Act.2.2b Road Maintenance Planning_Others

-Methods of data processing during operation

-Prepare midterm and long term plans

-Framework of technical standards are developed for classify plans.

Q9.5 Act.3.1.Inspection Method_Inspection Method, Diagnosis & Repair Work Selection, Data registration

Very much	2	29%
Very	2	29%
Fair	1	14%
Less	0	0%
Not at all	0	0%
N/A	2	29%
Total no WG3 member answered	7	
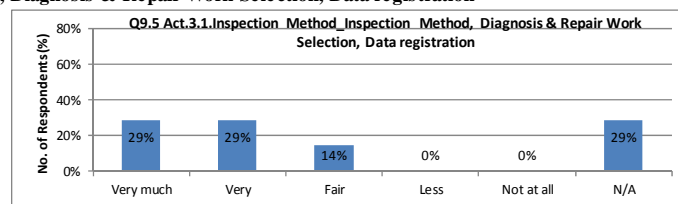
Q9.5 Act.3.1.Inspection Method_Inspection Technology

Very much	1	14%
Very	3	43%
Fair	1	14%
Less	0	0%
Not at all	0	0%
N/A	2	29%
Total no WG3 member answered	7	
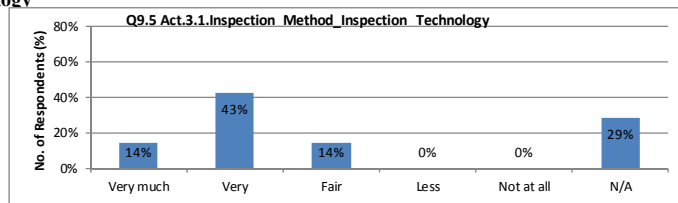
Q9.5 Act.3.1.Inspection Method_National Road Inspection Manual

Very much	2	29%
Very	3	43%
Fair	0	0%
Less	0	0%
Not at all	0	0%
N/A	2	29%
Total no WG3 member answered	7	
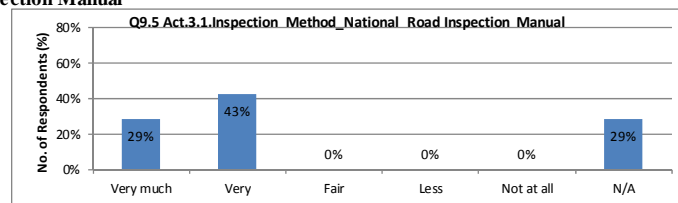
Q9.5 Act.3.1.Inspection Method_Others

-Method of field inspections.

-Synchronization of inspection program for nationwide interconnection

Q9.6 Act.3.2.Revised Routine Maintenance Standard_Development & Structure of Standard

|		
Very much	2	29%
Very	2	29%
Fair	1	14%
Less	0	0%
Not at all	0	0%
N/A	2	29%
Total no WG3 member answered	7	

Q9.6 Act.3.2.Revised Routine Maintenance Standard_Development & Structure of Standard

Very much 29% | Very 29% | Fair 14% | Less 0% | Not at all 0% | N/A 29%
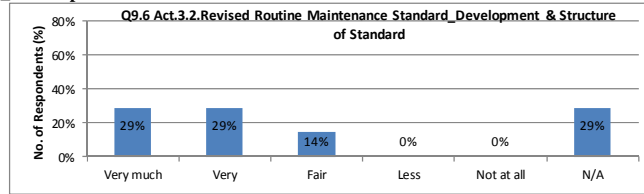
Q9.6 Act.3.2.Revised Routine Maintenance Standard_Routine Maintenance Works

Very much	2	29%
Very	2	29%
Fair	1	14%
Less	0	0%
Not at all	0	0%
N/A	2	29%
Total no WG3 member answered	7	
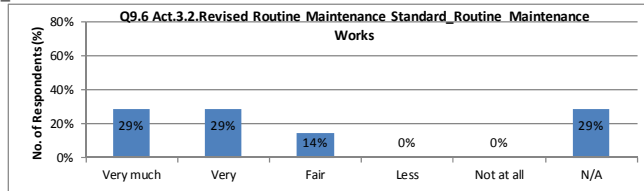
Q9.6 Act.3.2.Revised Routine Maintenance Standard_Routine Maintenance Works

Very much 29% | Very 29% | Fair 14% | Less 0% | Not at all 0% | N/A 29%

Q9.6 Act.3.2.Revised Routine Maintenance Standard_Maintenance Goal & Criteria for acceptance

Very much	2	29%
Very	2	29%
Fair	1	14%
Less	0	0%
Not at all	0	0%
N/A	2	29%
Total no WG3 member answered	7	

Q9.6 Act.3.2.Revised Routine Maintenance Standard_Maintenance Goal & Criteria for acceptance

Very much 29% | Very 29% | Fair 14% | Less 0% | Not at all 0% | N/A 29%
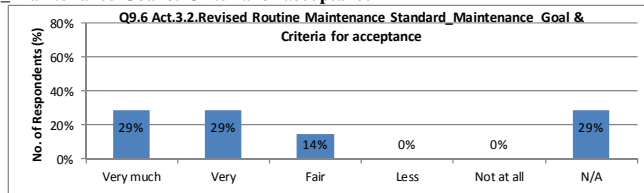
Q9.6 Act.3.2.Revised Routine Maintenance Standard_Others

-Method of detecting defects

-Development of acceptance requirements, classification for operation

Q9.7. Act.3.3.PMOS_System Development

Very much	3	43%
Very	1	14%
Fair	1	14%
Less	0	0%
Not at all	0	0%
N/A	2	29%
Total no WG3 member answered	7	

Q9.7. Act.3.3.PMOS_System Development

Very much 43% | Very 14% | Fair 14% | Less 0% | Not at all 0% | N/A 29%
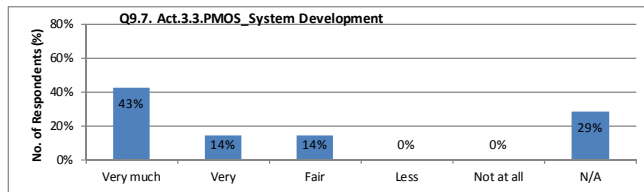
Q9.7. Act.3.3.PMOS_System Operation & Management

Very much	2	29%
Very	2	29%
Fair	1	14%
Less	0	0%
Not at all	0	0%
N/A	2	29%
Total no WG3 member answered	7	

Q9.7. Act.3.3.PMOS_System Operation & Management

Very much 29% | Very 29% | Fair 14% | Less 0% | Not at all 0% | N/A 29%
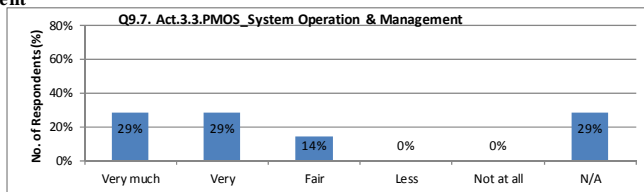
Q9.7. Act.3.3.PMOS_Others

-Reporting methods through the system

-Selection of important technical index for management

Q9.8. Act.4.Road Maintenance Institution_Road Maintenance Procedure

Very much	1	13%
Very	4	50%
Fair	0	0%
Less	0	0%
Not at all	0	0%
N/A	3	38%
Total no WG4 member answered	8	

Q9.8. Act.4.Road Maintenance Institution_Road Maintenance Procedure

Very much 13% | Very 50% | Fair 0% | Less 0% | Not at all 0% | N/A 38%
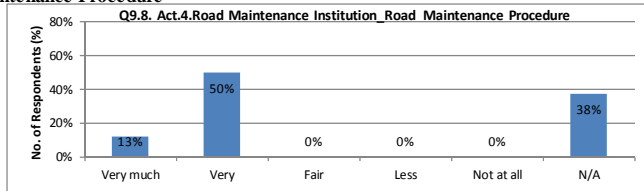
Q9.8. Act.4.Road Maintenance Institution_Road Maintenance Institution

Very much	3	38%
Very	4	50%
Fair	0	0%
Less	0	0%
Not at all	0	0%
N/A	1	13%
Total no WG4 member answered	8	

Q9.8. Act.4.Road Maintenance Institution_Road Maintenance Institution

Very much 38% | Very 50% | Fair 0% | Less 0% | Not at all 0% | N/A 13%
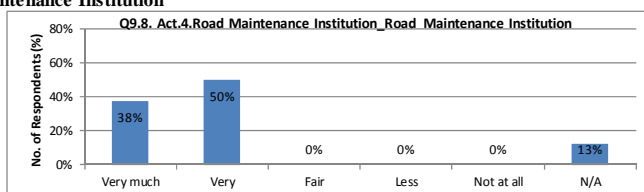
Q9.8. Act.4.Road Maintenance Institution_Others

-Development of General conditions and Particular conditions for each facilities, items in road maintenance

Q9.9.Comments

-Human capacity development/training is very important. It is recommended to implement more field trainings and directly on equipment and with more detailed level.

-This project is very important to road maintenance in Vietnam. It is requested to implement trainings on all project contents in details.

-Intensive trainings to surveyors, data processing experts; experts for defect diagnosis and giving out repair solution.

-To intensify implementation of activities of WG5 during project term in order to apply those outcomes in post-project period.

-To compile training results of WGs in order to develop training materials of WG5.

-To prepare training plan of during-project and post-project time based on conducted results together with evaluation and lesson-learned for the upcoming activities.

-Human capacity enhancement should be essential and mandatory in order to ensure the effective application of project outcomes in road maintenance in Vietnam

-The Project has not come close to reality in Vietnam. Trainings are formalistic, and not intensive, and did not attract participants to give comments. Training programs should be consecutive to avoid regular travelling of participants in remote regions.

-The Project has not come close to reality in Vietnam. Trainings are formalistic, and not intensive, and did not attract participants to give comments. Training programs should be consecutive to avoid regular travelling of participants in remote regions.

-Materials are not provided to participant in prior to trainings in order to have intensive comments.

-Intensive trainings to surveyors, data processing experts; experts for defect diagnosis and giving out repair solution.

-Trainings schedule were established quite details on the contents and the object.

-Documents for training should be submitted to the PMU or Working Groups 1 week prior to the training day for studying, if that the training will be more effective

-Due to the Activity of WG4 is Institutes, therefore the workshop or training are not organized within the scope of the project. Two meeting on 28 June, 2013 and 8 October, 2013 were the official discussions between the WG4 and JICA Team, so Question 4 & 6 are not answered in this form

A4.4 INTENSIVE TECHNICAL TRAINING 2014

A4.4.1 4th March 2014

(1) Training Program

Table 4.4.1 Training Program (4th March 2014)

Time	Contents	Trainer
8:00 – 8:30	Registration	
Session -I: Introduction		
8:30 – 9:00	Introduction to JICA Project Activities	Mr. Nguyen Trong Phu (Director of PMUTA)
Session -II: Lecture on Road Information Management		
9:00 – 11:30	Overview of Road Database System	Dr. B. R Pantha (Experts, JICA Project Team) & Mr. P. V. Doan (Assistant, JICA Project Team)
	Database Structure and Data Type	
	Road Database System Function and Operation	
	Database Operation and Management with Demonstration	
11:30 – 13:00	Lunch Break	
Session -III: Computer Practice on Road Information Management		
13:00 – 16:00	Database Operation and Management Practice in Computer	Dr. B. R Pantha (Experts, JICA Project Team)
16:00	End of Session	

(2) Participant List

Table 4.4.2 Participants list (4th March 2014)

No.	NAME	ORGANIZATION	DIVISION	POSITION
1	Phạm Văn Phú	RTC central	Laboratory	Staff
2	Ngô Đăng Quyền	RTC central	Laboratory	Staff
3	Đinh Quang Lộc	RTC central	Laboratory	Staff
4	Nguyễn Việt Hà	RTC central	Laboratory	Staff
5	Dương Ngọc Tuấn	RTC central	Inspection Division	Staff
6	Nguyễn Văn Cương	RTC central	Inspection Division	Staff
7	Mai Trọng Nam	RTC central	Inspection Division	Staff
8	Lương Xuân Ngọc	RTC central	Technical Div.	Staff
9	Mai Đức Bồng	RTC central	Technical Div.	Staff

10	Triệu Quốc Tuấn	RTC central	Technical Div.	Staff
11	Phạm Văn Phú	RTC central	Laboratory	Staff
12	Trần Hải Minh	Sub-bureau 6 (RRMB I)		Staff
13	Trần Duy Hưng	Sub-bureau 2 (RRMB I)		Staff
14	Nguyễn Thành Trung	Sub-bureau 1 (RRMB I)		Staff
15	Nguyễn Đình Phúc	Sub-bureau 7 (RRMB I)		Staff
16	Đinh Văn Hòa	Sub-bureau 8 (RRMB I)		Staff
17	Phạm Thị Ngọc Lan	Sub-bureau 5 (RRMB I)		Staff
18	Vũ Văn Duy	Sub-bureau 5 (RRMB I)		Staff
19	Nguyễn Thành Anh	Sub-bureau 8 (RRMB I)		Staff
20	Lê Văn Tân	Sub-bureau 8 (RRMB I)		Staff

A4.4.2   5th March 2014,

(1)   Training Program

Table 4.4.3 Training Program (5th March 2014)

Time	Contents	Trainer
8:00 – 8:30	Registration	
Session -I: Lecture and Computer practice on PMS Dataset Conversion Software Development		
8:30– 10:30	Outline of Conversion Software	Mr. Tsuneo Kato (Experts, JICA Project Team)& Mr. Bui Cong Do (Assistant, JICA Project Team)
	Software Operation and Management with Demonstration	
	Computer Practice	
10:30 – 10:45	Break	
Session -II: Lecture and Computer practice on PMoS System		
10:45– 11:30	Outline of PMoS System	Mr. Yoshiro Kunimasa (Experts, JICA Project Team) & Mr. Bui Cong Do (Assistant, JICA Project Team)
	Software Operation and Management with Demonstration	
	Computer Practice	
11:30	End of Morning Session	

Time	Contents	Trainer
12:30 – 13:00	Registration	
Session -III: Lecture and Computer practice on Road Maintenance Planning		
13:00 – 16:00	Outline of Pavement Condition Survey	Mr. Hisashi Mori (Experts, JICA Project Team) & Mr. Bui Cong Do (Assistant, JICA Project Team)
	Outline of Road Maintenance Planning	
	Software Operation and Management with Demonstration	
	Computer Practice	
16:00	End of Afternoon Session	

(2)   Participant List

No.	NAME	ORGANIZATION	DIVISION	POSITION
1	Lương Xuân Ngọc	RTC central	Technical Div.	Staff
2	Phạm Văn Phú	RTC central	Laboratory	Staff
3	Triệu Quốc Tuấn	RTC central	Technical Div.	Staff
4	Mai Đức Bổng	RTC central	Technical Div.	Staff
5	Đinh Quang Lộc	RTC central	Laboratory	Staff
6	Nguyễn Việt Hà	RTC central	Laboratory	Staff

7	Mai Trọng Nam	RTC central	Technical Div.	Staff
8	Dương Ngọc Tuấn	RTC central	KĐ	Staff
9	Nguyễn Văn Cương	RTC central	KĐ	Staff
10	Nguyễn Quang Huy	RTC 1	Design Div.	Staff
11	Trần Thị Mỹ Hà	RTC 1	Design Div.	Staff
12	Ngô Đăng Quyền	RTC central	Laboratory	Staff
13	Trịnh Xuân Sinh	DRVN	DPI	Staff
14	Nguyễn Trọng Nghĩa	RRMB I	Science and Tech.	Staff
15	Trần Duy Hưng	Sub-bureau 2 (RRMB I)		Staff
16	TRần Hải Minh	Sub-bureau 6 (RRMB I)		Staff
17	Nguyễn Đình Phúc	Sub-bureau 7 (RRMB I)		Staff
18	Vũ Văn Duy	Sub-bureau 5 (RRMB I)		Staff
19	Nguyễn Thành Trung	Sub-bureau 1 (RRMB I)		Staff
20	Lê Văn Tân	Sub-bureau 8 (RRMB I)		Staff
21	Phan Văn Cường	PMU TA		Staff
22	Hoàng Việt Hà	PMU TA		Staff

A4.4.3 6th March 2014

(1) Training Program

Table 4.4.4 Training Program (6th March 2014)

Time	Contents		Trainer
8:00 – 8:30	Registration		
Session -I: Lecture on Road Inspection Technology			
8:30 – 11:30	Objectives of Road Inspection		Mr. Nguyen Dinh Thao (Assistant, JICA Project Team)
	Current Framework of Road Inspection in Vietnam		
	Briefly Introduction of Japanese Practices on Road		
	Introduction of Framework of Guideline for Road		
	Bridge Inspection Case Study		
	Summary & Recommendation		
11:30	End of Morning Session		

Time	Contents		Trainer
12:30 – 13:00	Registration		
Session -II: Lecture on Road Maintenance Technology			
13:00 – 16:00	Current DRVN Standard		Dr. Tran Thi Kim Dang (Assistant, JICA Project Team)
	Framework of new Manual		
	Methodology of developing new Manual		
	Road Maintenance Technology		
16:00	End of Afternoon Session		

(2) Participant List

No.	NAME	ORGANIZATION	DIVISION	POSITION
1	Lương Xuân Ngọc	RTC central	Technical Div.	Staff
2	Phạm Văn Phú	RTC central	Laboratory	Staff
3	Triệu Quốc Tuấn	RTC central	Technical Div.	Staff
4	Mai Đức Bổng	RTC central	Technical Div.	Staff
5	Đinh Quang Lộc	RTC central	Laboratory	Staff

6	Nguyễn Việt Hà	RTC central	Laboratory	Staff
7	Mai Trọng Nam	RTC central	Technical Div.	Staff
8	Dương Ngọc Tuấn	RTC central	Inspection Div.	Staff
9	Nguyễn Văn Cương	RTC central	Inspection Div.	Staff
10	Ngô Đăng Quyền	RTC central	Laboratory	Staff
11	TRần Hải Minh	Sub-bureau 6 (RRMB I)		Staff
12	Trần Duy Hưng	Sub-bureau 2 (RRMB I)		Staff
13	Vũ Văn Duy	Sub-bureau 5 (RRMB I)		Staff
14	Nguyễn Thành Trung	Sub-bureau 1 (RRMB I)		Staff
15	Phạm Thị Ngọc Lan	Sub-bureau 5 (RRMB I)		Staff
16	Nguyễn Thành Anh	Sub-bureau 8 (RRMB I)		Staff

A4.4.4   Evaluation

Evaluation of Intensive Technical Trainings 2014
4th March, 2014 <Activity1 Training on Road Information Management>

Participated Organizations

DRVN	0	0%
RRMBs	0	0%
RTCs	9	50%
Sub Bureaus	9	50%
Total	18	100%

Answers from Organizations — Sub Bureaus, 9, 50% — RTCs, 9, 50%

Q1.1. Knowledge and Skill gained on Framework on Road Inforamtion Management

Very High	1	6%
High	12	67%
Fair	5	28%
Low	0	0%
Very Low	0	0%
Total	18	100%
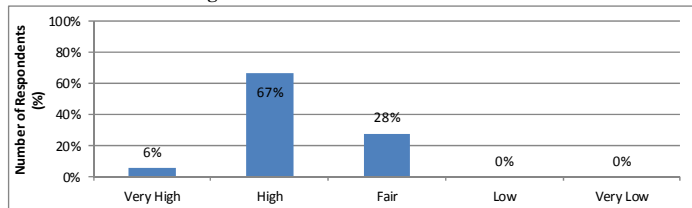
Q1.2. Knowledge and Skill gained on Framework on Database Structure and Database System

Very High	1	6%
High	11	61%
Fair	6	33%
Low	0	0%
Very Low	0	0%
Total	18	100%
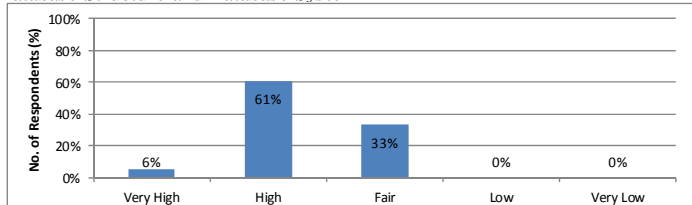
Q1.3. Knowledge and Skill gained on Framework on Database Operation and Management

Very High	1	6%
High	12	67%
Fair	5	28%
Low	0	0%
Very Low	0	0%
Total	18	100%
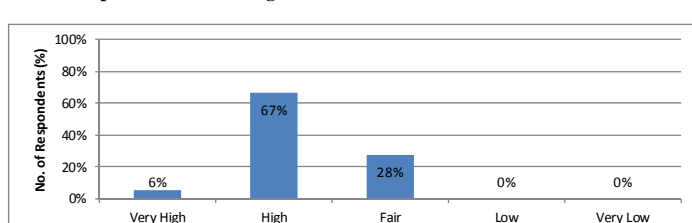
Q2.Comments

-After exporting data, total length is calculated manually. Automatic calculation should be functioned.

-Software structure is heavy, errors occurred when running in laptop. Lecture is too fast to understand.

-Software is quite understandable.

-Practising skills: were explained in last time in 2013. Input data was already prepared and submited by RRMB I to PMUTA. It's not neccesary to have guidance on inputting again. But it's not neccesary to solve problems and irrationatilites of the software.

Evaluation of Intensive Technical Trainings 2014
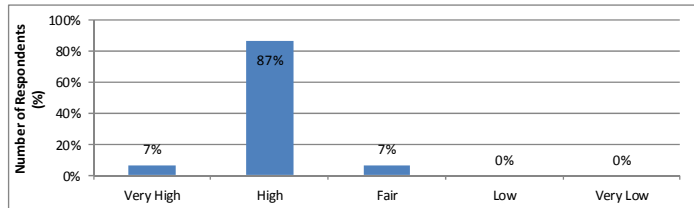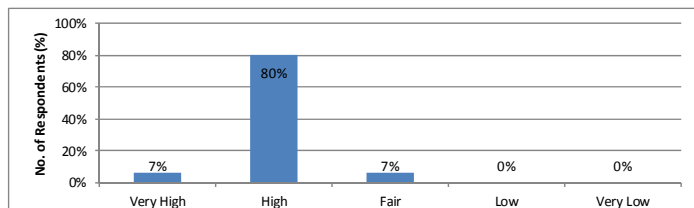
5th March, 2014 <Activity2.2a Training on Dataset Conversion Software>

Participated Organizations

DRVN	0	0%
RRMBs	2	13%
RTCs	8	53%
Sub Bureaus	5	33%
Total	15	100%

Answers from Organizations

RRMBs, 2, 13%
Sub Bureaus, 5, 33%
RTCs, 8, 54%
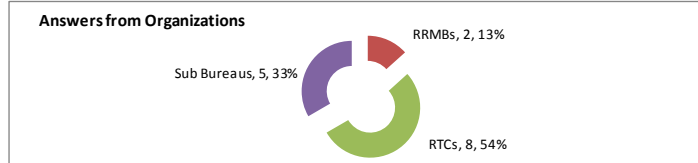
Q1.1. Knowledge and Skill gained on Framework on Dataset Conversion Software

Very High	1	7%
High	13	87%
Fair	1	7%
Low	0	0%
Very Low	0	0%
Total	15	100%

Q1.2. Knowledge and Skill gained on Framework on Software Structure and System

Very High	1	7%
High	12	80%
Fair	2	13%
Low	0	0%
Very Low	0	0%
Total	15	100%
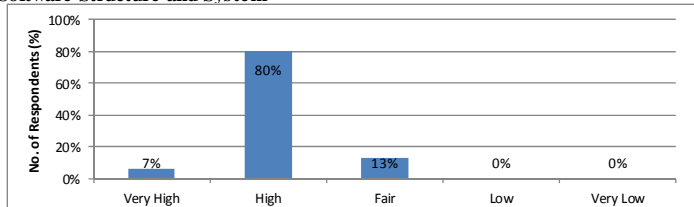
Q1.3. Knowledge and Skill gained on Framework on Software Operation and Management

Very High	1	7%
High	12	80%
Fair	1	7%
Low	0	0%
Very Low	0	0%
Total	14	93%

Q2.Comments

-Software is interesting and practical.

- Software is easy to understand and practise

- Software is easy, simple and quick

Evaluation of Intensive Technical Trainings 2014
5th March, 2014 <Activity2.2b Training on Road Maintenance Planning>

Participated Organizations

|		
DRVN	0	0%
RRMBs	1	8%
RTCs	6	50%
Sub Bureaus	5	42%
Total	12	100%

Answers from Organizations

RRMBs, 1, 8%
Sub Bureaus, 5, 42%
RTCs, 6, 50%
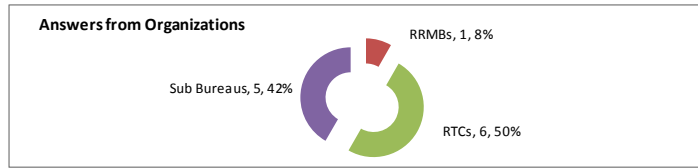
Q1.1. Knowledge and Skill gained on Framework on Road Maintenance Planning

Very High	0	0%
High	12	100%
Fair	0	0%
Low	0	0%
Very Low	0	0%
Total	12	100%
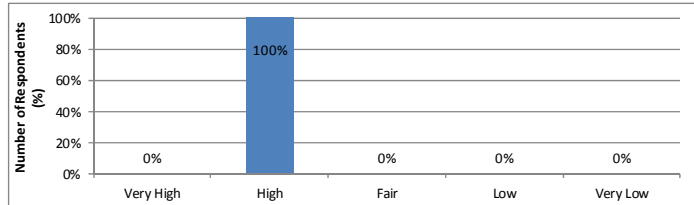
Q1.2. Knowledge and Skill gained on Framework on Software Structure and System

Very High	0	0%
High	12	100%
Fair	0	0%
Low	0	0%
Very Low	0	0%
Total	12	100%
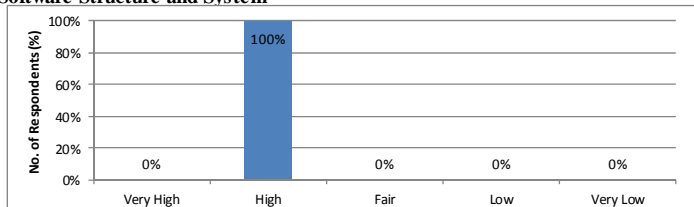
Q1.3. Knowledge and Skill gained on Framework on Software Operation and Management

Very High	0	0%
High	12	100%
Fair	0	0%
Low	0	0%
Very Low	0	0%
Total	12	100%
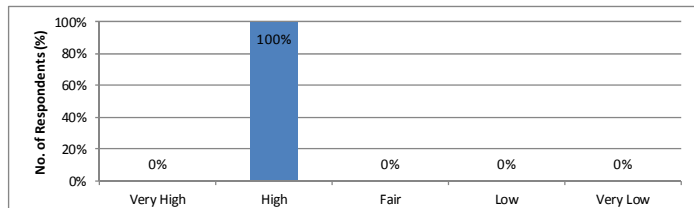
Q2.Comments
- Vietnamese interface makes it easy to understand and practise

Evaluation of Intensive Technical Trainings 2014
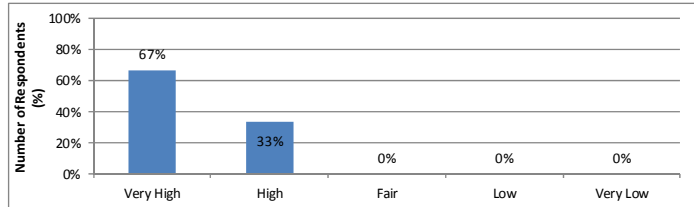**6th March, 2014 <Activity3.2Training on Road Maintenance Technology>**

Participated Organizations

DRVN	0	0%
RRMBs	0	0%
RTCs	2	67%
Sub Bureaus	1	33%
Total	3	100%

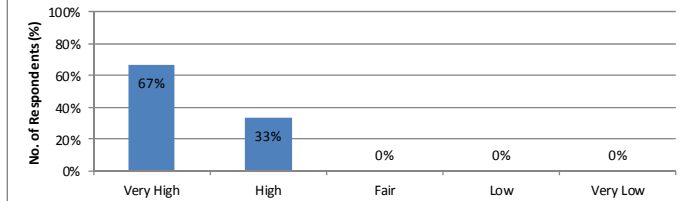**Answers from Organizations**

Sub Bureaus, 1, 33%

RTCs, 2, 67%
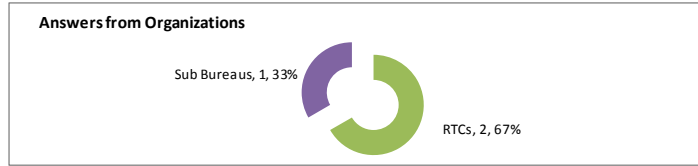
Q1.1. Knowledge and Skill gained on Framework on Manual of Road Maintenance Technology

|		
Very High	2	67%
High	1	33%
Fair	0	0%
Low	0	0%
Very Low	0	0%
Total	3	100%

Q1.2. Knowledge and Skill gained on Methodology to develop the Manual

Very High	2	67%
High	1	33%
Fair	0	0%
Low	0	0%
Very Low	0	0%
Total	3	100%

Q1.3. Knowledge and Skill gained on Structure of the Manual

Very High	2	67%
High	1	33%
Fair	0	0%
Low	0	0%
Very Low	0	0%
Total	3	100%
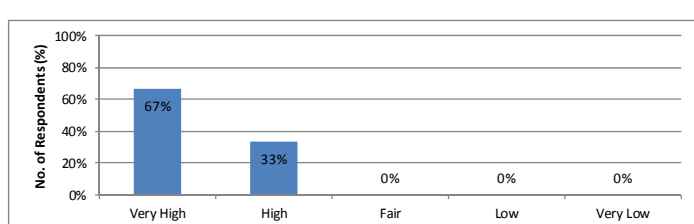
Q2.Comments
- Good

Evaluation of Intensive Technical Trainings 2014
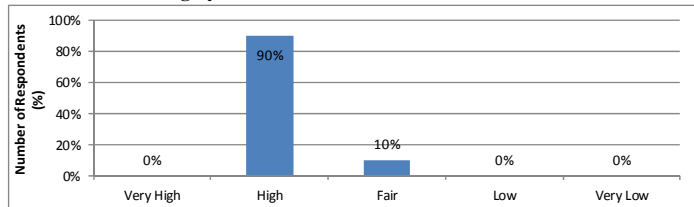**6th March, 2014 <Activity 3.3 Training on Pavement Monitoring System>**

Participated Organizations

DRVN	0	0%
RRMBs	0	0%
RTCs	7	70%
Sub Bureaus	3	30%
Total	10	100%

Answers from Organizations

Sub Bureaus, 3, 30%

RTCs, 7, 70%
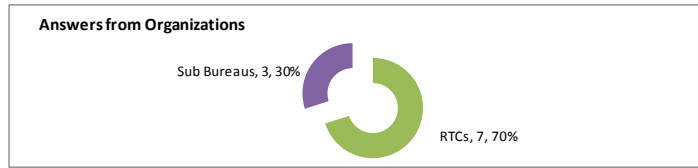
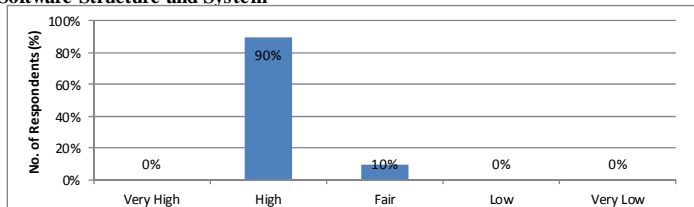**Q1.1. Knowledge and Skill gained on Framework on Pavement Monitoring System>**

Very High	0	0%
High	9	90%
Fair	1	10%
Low	0	0%
Very Low	0	0%
Total	10	100%

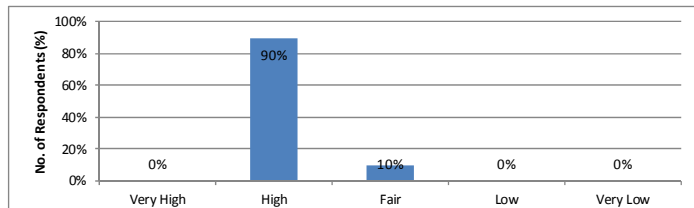**Q1.2. Knowledge and Skill gained on Framework on Software Structure and System**

Very High	0	0%
High	9	90%
Fair	1	10%
Low	0	0%
Very Low	0	0%
Total	10	100%

Q1.3. Knowledge and Skill gained on Framework on Software Operation and Management

Very High	0	0%
High	9	90%
Fair	1	10%
Low	0	0%
Very Low	0	0%
Total	10	100%

Q2.Comments

- Vietnamese interface is prefered.

- Is it operable in Office 2007?