

RECORD OF DISCUSSIONS
BETWEEN JAPAN INTERNATIONAL COOPERATION AGENCY AND
AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE ISLAMIC REPUBLIC OF PAKISTAN
ON JAPANESE TECHNICAL COOPERATION
FOR
HIGHWAY RESEARCH AND TRAINING CENTRE

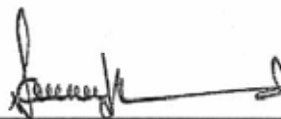
The Japan International Cooperation Agency (hereinafter referred to as "JICA"), through its Resident Representative of JICA Pakistan Office, exchanged the views and had a series of discussion with the related Pakistan authorities with respect to desirable measures to be taken by JICA and the Government of Pakistan (hereinafter referred to as "GOP") for the successful implementation of the Technical Cooperation for HR&TC (hereinafter referred to as "the Technical Cooperation").

As a result of discussion, and in accordance with the provisions of the Agreement on Technical Cooperation between the Government of Japan and the GOP signed in Islamabad on April 30th 2005 (hereinafter referred to as "the Agreement"), JICA and the related Pakistani authorities agreed to the matters referred to in the document attached hereto.

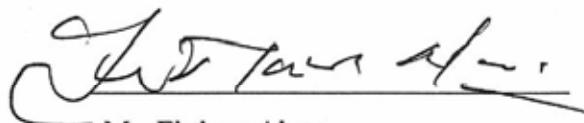
Islamabad, November 10, 2006



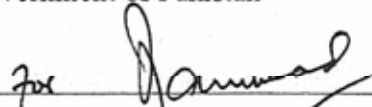
Mr. Takao Kaibara
Resident Representative
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Government of Pakistan



Ms. Najma Siddiqi
Joint Secretary
Economic Affairs Division
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Government of Pakistan

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN JICA AND GOP

1. GOP will implement Highway Research and Training Centre (hereinafter referred to as "the Project"), and at the initial stage of the Project, GOP will implement it in cooperation with JICA as a Technical Cooperation Project (hereinafter referred to as "the Technical Cooperation").
2. The Technical Cooperation will be implemented within the time framework given in Article IX.

II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan and the provisions of Article III of the Agreement, JICA will take, at its own expense, the following measures according to the normal procedures of its technical cooperation scheme.

1. DISPATCH OF JAPANESE EXPERTS

JICA will provide the services of the Japanese experts as listed in Annex II. The provision of Article V of the Agreement will be applied to the experts.

2. PROVISION OF EQUIPMENT

JICA will provide equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Technical Cooperation listed in Annex III. The provision of Article VII of the Agreement will be applied to the Equipment.

3. TRAINING OF PAKISTANI PERSONNEL IN JAPAN

JICA will receive the Pakistani personnel connected with the Technical Cooperation for technical training in Japan.

III. MEASURES TO BE TAKEN BY GOP

1. GOP will take necessary measures to ensure the self-reliant and self-sustainable operation of the Project during and after the period of Japanese technical cooperation, through full and active involvement in the Technical Cooperation by all related authorities, beneficiary groups and institutions.
2. GOP will ensure that the technologies and knowledge acquired by the Pakistani

nationals as a result of the Japanese technical cooperation will contribute to the economic and social development of the Islamic Republic of Pakistan.

3. In accordance with Article V of the Agreement, GOP will grant privileges, exemptions and benefits to the Japanese experts mentioned in II-1 and their families.
4. In accordance with Article VII of the Agreement, GOP will take the measures necessary to receive and use the Equipment mentioned in II-2 and equipment, machinery and materials carried in by the Japanese experts mentioned in II-1.
5. GOP will take necessary measures to ensure that the knowledge and experience acquired by the Pakistani personnel from technical training in Japan will be utilized effectively in the course of the Project.
6. In accordance with Article V of the Agreement, GOP will provide the services of Pakistani counterparts as technical personnel and administrative personnel as listed in Annex IV.
7. In accordance with Article V of the Agreement, GOP will provide the buildings and facilities as listed in Annex V.
8. In accordance with the laws and regulations in force in the Islamic Republic of Pakistan, GOP will take necessary measures to supply or replace at its own expense machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Technical Cooperation.
9. In accordance with the laws and regulations in force in the Islamic Republic of Pakistan, GOP will take necessary measures to meet the running expenses necessary for the implementation of the Technical Cooperation.

IV. ADMINISTRATION OF THE TECHNICAL COOPERATION

1. Chairman of NHA as the Administrator of the Technical Cooperation, will bear overall responsibility for the administration of the Technical Cooperation.
2. Member planning of NHA, as the Manager of the Technical Cooperation, will be responsible for the managerial and coordination matters of the Technical Cooperation.
3. The Japanese Chief Adviser will provide necessary recommendations and advice to

the Administrator and Manager of the Technical Cooperation on any matters pertaining to the implementation of the Technical Cooperation.

4. The Japanese experts will give necessary technical guidance and advice to Pakistani counterpart personnel on technical matters pertaining to the implementation of the Technical Cooperation.
5. For the effective and successful implementation of the Technical Cooperation, a Joint Steering Committee will be established whose functions and composition are described in Annex VI.

V. JOINT EVALUATION

Evaluation of the Technical Cooperation will be conducted jointly by JICA and the Pakistani authorities concerned, respectively at the end of Phase I and during the last six months of the cooperation term in order to evaluate the level of achievement and monitor the process of the Technical Cooperation.

VI. CLAIMS AGAINST JAPANESE EXPERTS

In accordance with the provision of Article VI of the Agreement, GOP undertakes to bear claims, if any arises, against the Japanese experts engaged in the Technical Cooperation resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Islamic Republic of Pakistan except for those arising from the willful misconduct or gross negligence of the Japanese experts.

VII. MUTUAL CONSULTATION

There will be mutual consultation between JICA and GOP on any major issues arising from, or in connection with this Attached Document.

VIII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE TECHNICAL COOPERATION

For the purpose of promoting support for the Technical Cooperation among the people of the Islamic Republic of Pakistan, GOP will take appropriate measures to make the Technical Cooperation widely known to the people of the Islamic Republic of Pakistan.



IX. TERM OF COOPERATION

The duration of the Technical Cooperation under this Attached Document will be five years and it will be divided into two phases

LIST OF ANNEXES

- ANNEX I MASTER PLAN
- ANNEX II LIST OF JAPANESE EXPERTS
- ANNEX III MACHINERY AND EQUIPMENT
- ANNEX IV LIST OF PAKISTANI COUNTERPART AND ADMINISTRATIVE PERSONNEL
- ANNEX V LIST OF BUILDINGS AND FACILITIES
- ANNEX VI JOINT STEERING COMMITTEE
- ANNEX VII PROJECT DESIGN MATRIX (PDM)
- ANNEX VIII TENTATIVE PLAN OF OPERATIONS



ANNEX I

MASTER PLAN

1 Super Goal:

Durable, economical, safe and environment friendly highways are built, maintained and operated efficiently

2 Overall Goal:

"Indigenous Standards" for highways suitable for local conditions developed by HR&TC are applied for construction, maintenance and operations.

**"Indigenous Standards" includes "Specification, Guideline and Manual" in addition to the standards.*

3 Project purpose of the Technical Cooperation:

Institutional framework and system of research and training for highway construction, maintenance and operations are developed

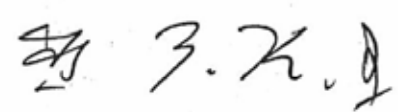
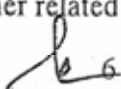
4 Output of the Technical Cooperation:

- 1) Research and Training facilities necessary for pavement and related field are developed
- 2) Research reports and/or draft of "Indigenous Standards" in pavement and related technology are developed
- 3) Output of research in pavement and related fields are disseminated to related personnel
- 4) Researchers, engineers and technicians are trained on pavement and related technology

5 Technical Cooperation Activities

<Phase I>

- 1-1-1 Prepare master plan of HR&TC with tentative building layout
- 1-1-2 Prepare TOR and coordinate design activities of pavement and related research and training facilities
- 1-1-3 Advise on design and construction of HR&TC facilities with NHA officials concerned
- 1-1-4 Prepare equipment lists and specification
- 1-1-5 Procure and set up equipment
- 2-1-1 Prepare master plan of HR&TC research activities
- 2-1-2 Prepare detailed plan of pavement research based on the master plan
- 2-1-3 Conduct pavement research based on the plan
- 2-1-4 Prepare future plan for other related research (i.e. traffic safety, environment)



- 3-1-1 Prepare the design and specification of database system
- 3-1-2 Develop database system
- 3-1-3 Input accumulated information and research record in the database
- 4-1-1 Prepare master plan of training program in HR&TC
- 4-1-2 Prepare training and seminar plan on pavement technology
- 4-1-3 Develop training curriculum and texts
- 4-1-4 Conduct in-service training of HR&TC counterparts
- 4-1-5 Conduct training and/or seminar for researchers, engineers and technicians concerned

<Phase II>

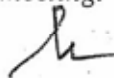

- 1-2-1 Prepare layout and specification of additional facilities necessary for pavement and related research and training
- 1-2-2 Advise on design and construction of HR&TC facilities with NHA officials concerned
- 2-2-1 Conduct pavement research based on the plan
- 2-2-2 Conduct pavement related research based on the plan (i.e. traffic safety, environment)
- 2-2-3 Integrate research result and publish research report
- 2-2-4 Develop draft "Indigenous Standards" based on the research output
- 3-2-1 Input data, record and literature of pavement and related technology into database
- 3-2-2 Publish accumulated information of pavement and related technology by publication and/or website
- 3-2-3 Consult with NHA Officials on dissemination of research output to personnel/ organizations concerned
- 4-2-1 Develop training curriculum and text.
- 4-2-2 Conduct in-service training of HR&TC counterparts
- 4-2-3 Conduct training and seminar for researchers, engineers and technicians concerned

**Detail plan of 2nd phase will be reviewed during and at the end of 1st phase, based on the evaluation of the progress and achievements of 1st phase.*

6 TECHNICAL COOPERATION SITES

National Highway Authority, Highway Research and Training Center, and national highways in Pakistan

Note: In case the Master Plan needs to be modified, both sides will agree on and confirm such modifications in minutes of meeting.

ANNEX II

LIST OF JAPANESE EXPERTS

1. Long-term experts: 1 person
 - Chief Advisor/ Organizational Designing and Research Planning (Phase I)
 - Chief Advisor/Road pavement (Phase 2)

2. Short-term experts
(about 2~4 per year)
 - Laboratory facilities
 - Research planning
 - Training planning
 - Database system
 - Laboratory Equipment maintenance and operation

Notes: Field, number and term of assignment of long- and short-term experts will be decided through mutual consultation at the beginning of each Japanese fiscal year.



ANNEX III

MACHINERY AND EQUIPMENT

Machinery and equipment necessary for the implementation of the Technical Cooperation will be provided by the Government of Japan within budgetary limitations. The list of machinery will be prepared in the phase I of the Technical Cooperation, with collaboration of the Experts and counterparts.

Also, input of necessary machinery and equipment will be added through mutual consultation throughout the Technical Cooperation, though it is subject to JICA's budgetary constraint.

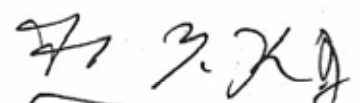


ANNEX IV

LIST OF PAKISTANI COUNTERPART AND ADMINISTRATIVE PERSONNEL

For the effective and successful implementation of the Technical Cooperation, following counterparts will be assigned.

1. Administrator of the Technical Cooperation:
Chairman, NHA
2. Manager of the Technical Cooperation:
Member Planning, NHA
3. Counterpart Staff:
NHA will assign following counterpart staff for the successful implementation of the Technical Cooperation
 - a) HR&TC Executive Director
 - b) Chief researcher
 - c) Researchers
 - d) Laboratory technicians
 - e) IT engineer
 - f) Training coordinator
4. Assistants/Supporting Staffs
5. Other personnel mutually agreed upon if necessary

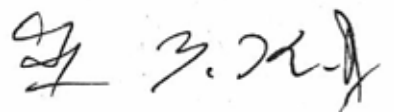


ANNEX V

**LIST OF LAND, BUILDINGS AND FACILITIES NECESSARY FROM
PAKISTANI SIDE**

Until the completion of the building of the HR&TC, NHA will arrange substitute office and laboratory for implementation of the Technical Cooperation. The substitute office and laboratory will be equipped with the following facilities:

1. JICA Experts and Counterparts room
2. Administrative room
3. Space for pavement testing equipment
4. Electricity, telephone and water supply
5. Testing equipment
6. Vehicles
7. Meeting room
8. Store room



ANNEX VI

JOINT STEERING COMMITTEE

1. Function

For the effective and successful implementation of the Technical Cooperation, the Joint Steering Committee will be established in order to make decisions relevant to the Technical Cooperation. The Joint Steering Committee will meet when necessary and at least once a year in order to fulfill the following functions:

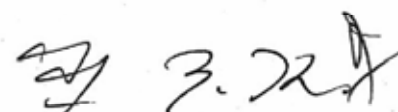
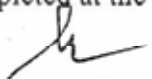
- (1) To formulate annual work plan of the Technical Cooperation based on the Plan of Operations (P/O) and Work Breakdown Structure (WBS)
- (2) To review the results of the annual work plan and the progress of the Technical Cooperation
- (3) To exchange views and ideas on major issues those arise during the implementation period of the Technical Cooperation
- (4) To evaluate PDM during the course of the Technical Cooperation and suggest revision, if necessary.

2. Committee members

The committee will be composed of the chair and the members. The rules and guidelines for the management of the committee will be determined at the initial stage of the Technical Cooperation. The possible composition might be as follows:

- (1) Chairperson:
Chairman, NHA
- (2) Members on Pakistani side
Member Planning
HR&TC Executive Director
Representative of MOC
Representative of Planning Commission
Representative of EAD
Other personnel recommended by NHA
- (3) Members on Japanese side
Resident Representative of Pakistan Office, JICA
JICA Experts
Officials, Embassy of Japan (Observer)
Other personnel recommended by JICA

The member list will be completed at the commencement



Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Super Goal Durable, economical, safe and environment friendly Highways are built maintained and operated efficiently</p> <p>Overall Goal "Indigenous Standards" for highways suitable for local conditions developed by HR&TC are applied for construction maintenance and operations.</p> <p>Project Purpose Institutional framework and system of research and training for highway construction maintenance and operations are developed</p>	<p>1. Highway service life is increased 2. Cost efficiency of highway maintenance is improved. 3. Effective highway safety and environmental measures are enforced.</p> <p>1. "Indigenous Standards" for highway construction and maintenance developed by HR&TC are approved and enforced by NHA and/or concerned organization. 2. Researchers, engineers, and technicians are trained in HR&TC on necessary knowledge and technology for highway construction and maintenance.</p> <p>1. Draft "Indigenous Standards" on highway pavement and related fields are developed. 2. Researchers, engineers, technicians in road sector are trained in highway pavement and related fields.</p>	<p>1. Road inventory survey 1&2&3. NHA annual network report 2-1. Highway accident record 2-2. Highway environmental report</p> <p>1-1. Enforced "Indigenous Standards" in related contracts /notifications by NHA and/or concerned organization. 1&2. NHA annual performance report, highway O&M report 2-1. Training/seminar recorded conducted in HR&TC with evaluation of achievement. 2-2. Interview of trained engineers/ technicians and their employers.</p> <p>1-1. Research report 1-2. Draft "Indigenous Standards" (No. & kind) 2-1. Record of training/seminar conducted in HR&TC 2-2. Interview of trained Engineers/ Technicians and their Employers.</p>	<p>- Construction and maintenance of highways are implemented by utilizing "Indigenous Standards", specifications, manuals and guidelines.</p> <p>- HR&TC is expanded and strengthened based on the master plan (PCI) - Those trained by HR&TC stays in road engineering sector in Pakistan.</p>
<p>Output 1. Research and training facilities necessary for pavement and related field are developed.</p> <p>2. Research reports and/or draft of "Indigenous Standards" in pavement and related technology are developed.</p>	<p><Phase 1> 1-1 Master plan with layout of HR&TC facilities is prepared. 1-2 Office, laboratory and training buildings for pavement and related research, and training are developed by Mar. 2009. 1-3 Equipments for pavement research and training are setup by March 2009. <Phase 2> 1-4 Additional building and equipments for pavement and related research and training are facilitated.</p> <p><Phase 1> 2-1 Master plan of HR&TC research is prepared by Dec. 2007. 2-2 Detailed pavement research plan is prepared, and research is conducted from Dec. 2007 on ward. 2-3 Detailed plan of pavement related research is prepared by Mar. 2009. <Phase 2> 2-4 Research reports and/or "Indigenous Standards" drafts for pavement and/or related fields are developed</p>	<p>1-1 Master plan with HR&TC building layout/design 1-2&1-4 Design and completed office, laboratory, training buildings 1-2, 1-3&1-4 Equipment procurement plan, Inventory record.</p> <p>2-1 Master plan of HR&TC research. 2-2 Pavement research plan, research record. 2-3 Research reports, draft "Indigenous Standards".</p>	<p>- Government policy on the road sector does not change</p>
<p>3. Output of pavement and related fields research are disseminated to concerned personnel.</p>	<p><Phase 1> 3-1 Database is developed and accumulated pavement and related data, research record are made part of the database. <Phase 2> 3-2 Achieved record and literature of pavement and related research are made available on publication and/or website.</p>	<p>3-1 &3-2 Database and its contents. 3-2 Publication, database contents, the number of access to database/ website.</p>	

<p>4. Researcher, engineers and technicians are trained on pavement and related technology.</p>	<p><Phase 1> 4-1 Master plan of training program i.e. HR&TC is prepared 4-2 Plan of training and seminar on pavement and related technology are prepared 4-3 Concerned researcher, engineer and technician are trained <Phase 2> 4-4 Concerned researcher, engineer, technician are trained</p>	<p>4-1. Master plan of training 4-2. Plan of training and seminar on pavement and related technology 4-3&4-4. Record of training/seminar with curriculum, training material and evaluation of achievement. 4-3&4-4. Interview of trained researcher/engineers/technicians and their Employers.</p>	<p>- Trained/qualified staff stays in HR&TC - Budget for NHIA is kept at adequate level. - Personnel, equipment and output of the NHIP pavement research study is taken over to HR&TC.</p>
<p>ACTIVITIES <Phase 1> 1-1-1 Prepare master plan of HR&TC with tentative building layout 1-1-2 Prepare TOR and coordinate design activities of pavement and related research and training facilities 1-1-3 Advise on design and construction of HR&TC facilities with concerned NHIA officials 1-1-4 Prepare equipment lists and specifications 1-1-5 Procure and set up equipment 2-1-1 Prepare master plan of HR&TC research activities 2-1-2 Prepare detailed plan of pavement research based on the master plan 2-1-3 Conduct pavement research based on the plan 2-1-4 Prepare future plan for other related research (i.e. Traffic safety, environment) 3-1-1 Prepare the design and specification of database system 3-1-2 Develop database system 3-1-3 Input accumulated information and research record in the database 4-1-1 Prepare master plan of training program in HR&TC 4-1-2 Prepare training and seminar plan on pavement technology 4-1-3 Develop training curriculum and texts 4-1-4 Conduct in-service training of HR&TC counterparts 4-1-5 Conduct training and/or seminar for concerned researchers, engineers and technicians <Phase II> 1-2-1 Study and prepare layout and specification of additional facilities necessary for pavement and related research and training 1-2-2 Advise on design and construction of HR&TC facilities with concerned NHIA officials 2-2-1 Conduct pavement research based on the plan 2-2-2 Conduct pavement related research based on the plan (i.e. traffic safety, environment) 2-2-3 Integrate research result and create research report 2-2-4 Develop draft "Indigenous Standards" based on the research output 3-2-1 Input data, record and literature of pavement and related technology into database 3-2-2 Publish accumulated information of pavement and related technology by publication and/or website 3-2-3 Consult with NHIA Officials on dissemination of research output to concerned personnel/organizations 4-2-1 Develop training curriculum and text 4-2-2 Conduct in-service training of HR&TC counterparts 4-2-3 Conduct training and seminar for concerned researchers, engineers and technicians</p>	<p>Japanese side <Experts> 1. Long-term Experts - Chief Advisor/ Organizational Designing and Research Planning (Phase 1) - Chief Advisor/Road Pavement (Phase 2) 2. Short-term Experts (about 2-4 per year) - Laboratory facilities - Research planning - Training planning - Database system - Laboratory equipment maintenance and operation <Equipment> - Equipment for research and training - Database equipment - Pavement and related research <Counterpart Training > (about 2-4 per year) - Organization and research management - Pavement and related research</p>	<p>INPUT Pakistani side <Counterpart> 1. Administration Personnel - Project Director - Project Manager - HR&TC Executive Director - Supporting Staff 2. Technical personnel - Chief researcher - Researchers - Laboratory technicians - IT engineer - Training coordinator - Assistants/supporting staff <Facilities> - Land and building for HR&TC - Equipment, furniture and stationary (Lab. DB, Training Office), - Vehicle <Budget> - Administrative expenses - Research, training and seminars expenses - Operation and maintenance expenses - Salary and travel expenses of counterparts and HR&TC staffs</p>	<p><Pre-conditions> - Necessary counterparts are allocated - Financial measure for the Project is secured. - Construction work plan of HR&TC building is approved.</p>

*The project implementation is divided into phases 1 and 2.

*Detail plan of 2nd phase will be reviewed during and at the end of 1st phase, based on the evaluation of the progress and achievements of 1st phase.
**"Indigenous Standards" includes "Specification, Guideline and Manual" in addition to the standards.

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