

ANNEXES

Minutes of Meeting

Minutes of Meeting on Inception Report held on August 15 2002	A1-1
Minutes of Meeting on Progress Report held on November 20 2002	A1-11
Minutes of Meeting on Interim Report held on May 16 2003.....	A1-23
Minutes of Meeting on Results of Second Field Survey held on June 18 2003.....	A1-29
Minutes of Meeting on Draft Final Report held on August 6 2003	A1-37

MINUTES OF JOINT MEETING AND STEERING COMMITTEE MEETING
ON

INCEPTION REPORT

FOR THE STUDY ON

COMPREHENSIVE FLOOD MITIGATION AND ENVIRONMENTAL IMPROVEMENT PLAN
OF LAI NULLAH BASIN IN THE
ISLAMIC REPUBLIC OF PAKISTAN

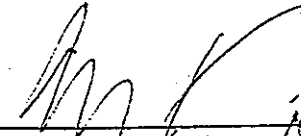
AGREED UPON BETWEEN

FEDERAL FLOOD COMMISSION
MINISTRY OF WATER AND POWER
(including CDA, RDA, TMA,
Small Dams Organization of I&P Deptt, Punjab)

AND

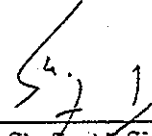
THE JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

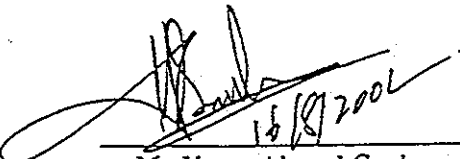
August 16, 2002, ISLAMABAD

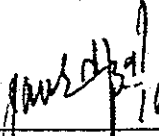

16/8/2002
Mr. Riaz Ahmad Khan
Chairman, Federal Flood Commission
Ministry of Water and Power

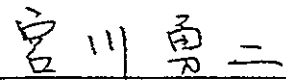

Mr. Yoshiharu MATSUMOTO
Team Leader of JICA Study Team

Witnesses


Mr. Shafiq Ali Siddiqui
Director Regional Planning, CDA


16/8/2002
Mr. Yaseer Ahmad Gauhar
Director General, RDA


16.8.2002
Mr. Javed Afzaal Khan
Project Director, Small Dams Organization,
I&P Deptt, Punjab


Mr. Yuji MIYAGAWA
Chairman of JICA Advisory Committee

In accordance with the Scope of Works for the Study on Comprehensive Flood Mitigation and Environmental Improvement Plan of the Lai Nullah Basin of the Islamic Republic of Pakistan (hereinafter referred to as "the Study") signed on August 23, 2001, the JICA Study Team submitted thirty (30) copies of the Inception Report (hereinafter referred to as "the Report") to the Chairman FFC/Chairman of the Steering Committee on August 10, 2002. A Joint meeting of the JICA Study Team was held with RDA, TMA, Small Dams Organization of I&P Deptt, Govt. of the Punjab, CC Engineers 10-Corps & FFC on August 10, 2002 at the office of FFC, wherein the JICA Study Team presented the Inception Report. The Steering Committee Meeting was held to discuss the contents of the Inception Report on August 15, 2002. The contents of the Report have been accepted in general by the Committee. List of participants of the Joint Meeting and the Steering Committee Meeting is attached as Annexure-I.

Opening Remarks by the Chairman

The Chairman welcomed and introduced the participants from the Pakistan government agencies concerned. Then, he invited the representative of JICA and JICA Study Team to introduce their members. After introduction of all participants, he invited Mr. Yoshiharu MATSUMOTO, the Leader of the Study Team to give a briefing on the contents of the Report.

Briefing by the JICA Study Team and Discussions

Mr. Yoshiharu Matsumoto, the Team Leader briefed the Committee on the Contents of the Report, and the Meeting then took note of the findings of the Study and deliberated the following major items.

1. Revisions of Contents of the Inception Report

The Committee agreed that the revisions in the contents of the Report agreed in the Steering Committee Meeting were acknowledged through the Minutes of this Meeting and should be reflected in all subsequent reports, namely, the Progress Report, the Interim Report, the Draft Final Report and the Final Report.

2. Study Period

The Chairman asked if it is possible to shorten either the 3-month gap of study period from February to May in 2003 or the net entire study period so that the project identification in the Study could be made earlier. After detailed discussion, the Committee finally agreed that it was virtually difficult to shorten the period from the following viewpoints explained by the JICA Study Team.

- (1) The gap of the study period is necessary in order to complete the contract procedures between JICA and the Consultants (as the Study Team).
- (2) The net study period of twelve (12) months as proposed in the Report would be necessary judging from results of assessment by the JICA Preparatory Study Team on the availability of the existing relevant data.

This accords with the Minutes of Meetings for the Study agreed on August 23, 2001 during the preparatory study.

3. Updated Progress of ADB Project

The Committee informed the JICA Study Team that the on-going ADB project for Lai Nullah channel improvement would still take a time for its completion, the removal of structures in particular. Nevertheless, the project would be completed by March 2003. It was informed that the number of bridges to be reconstructed would be the following three (3) instead of two (2) as described in the Report; (i) Pirwadhai Bridge, (ii) Dhok Chiragh Din Bridge and (iii) Gawal Mandi Bridge.

4. Recurrence Probability of Design Flood Adopted in the ADB Project

The ADB Project adopted the design flood discharge of 25-year return period for the channel section whereas 100-year return period criteria for bridges. In this connection, the Committee agreed that the JICA Study Team would verify the recurrence probability of the design flood discharge. Should the recurrence probability be verified to be different from 25-year return period, the JICA Study Team could assume the verified value as the prerequisite conditions of the project formulation in the Study.

5. Recommendations on the ADB Project in the Study

The Committee agreed that the JICA Study Team should review the plan, the design and other parameters related to the on-going river channel improvement works under the ADB Project and recommend the necessary extra works such as bank protection, channel deepening, etc. if required, posterior to the river improvement works within the period of the first field survey by December 2002.

6. Study on Environmental Improvement

The Committee agreed that as discussed in meeting with the JICA Preparatory Study Team, the principal issue of the Study should be the flood mitigation of Lai Nullah but the following environmental issues might be also examined in the subordination to the principal issue as far as they significantly influence the objective flood mitigation plan (refer to Item 5 in the Minutes of Meetings agreed on August 23, 2001).

- (1) Sewage Disposal;
- (2) Solid Waste Disposal;
- (3) Water Resources Development (including rainwater harvesting);
- (4) Drainage improvement of the low-lying area.

7. Preliminary Concept on Design Scale for Long Term Flood Mitigation Plan

The Committee agreed that the design criteria of long term flood mitigation plan for Lai Nullah should reach at least 100 year return period, since the riverine area was highly urbanized.

8. Possible Extent of Land Acquisition along Lai Nullah

The Committee agreed that the land acquisition made under the on-going ADB Project should be considered as the maximum limit, and that after completion of the ADB project, further widening of the river channel would be no longer applicable. Accordingly, the possible flood mitigation measures posterior to completion of the ADB Project would be oriented to the non-structural measures and the structural measures such as deepening of the river channel, diversion of the flood discharge, construction of dams and the basin flood detention including rainwater harvesting in the upper reaches.

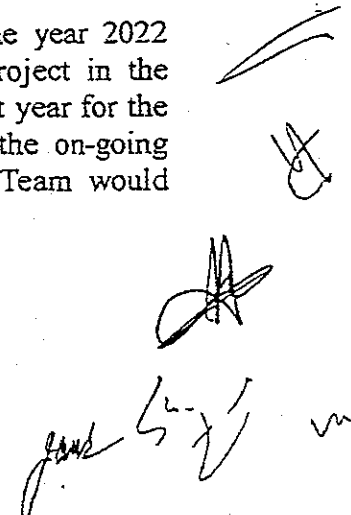
9. Urgent Project to be examined in the Study

In connection with the Urgent Project, the Committee agreed on the following items:

- (1) The safety against flood overflow of Lai Nullah could substantially increase after completion of the on-going ADB Project, and therefore, the necessity of the urgent flood mitigation measures would be reduced. However, in case that any measures that need to take the immediate action are identified in the Study, such measures should be implemented in a manner of Model Project.
- (2) The JICA Study Team should make recommendations on the urgent project by December 2002 so as to catch up with the earlier commencement of the project implementation.
- (3) The assistance by the Government of Japan would be indispensable for successful implementation of the urgent project. In this connection, the JICA Study Team may advise the Committee of the necessary procedures and the appropriate timing for submission of the official request from the Government of Pakistan to Embassy of Japan for assistance.

10. Target Year of the Long Term Flood Mitigation Plan

DG, RDA and the Member Engineering CDA commented that the year 2022 proposed as the target year of the long-term flood mitigation project in the Inception Report should be revised to 2012 that was set as the target year for the implementation of the Third National Flood Protection Plan and the on-going Sewage Disposal Plan of CDA. In this connection, JICA Study Team would review the proposed target years by referring to these plans.



11. Counterpart Personnel

The Committee informed that counterpart personnel had been assigned from each of the related government agencies as listed in the Annexure II.

12. Disclosure of the Contents of the Final Report

In accordance with Minutes of Meeting for the Preparatory Study on August 23, 2001, Mr. Kotaro Taniguchi, the staff of JICA Headquarters requested that the Final Report should be opened to the general public. In response to the request, the Committee agreed to complete the necessary procedures within two weeks after the official request is made by the Resident Representative of JICA Pakistan Office at the stage of submitting of the Draft Final Report.

13. Use of Global Positioning System (GPS) for the Study

The JICA Study Team revealed that GPS is indispensable for execution of the Study. In this connection, the Committee recognized the necessity of the GPS and agreed to complete all necessary coordination/clearance for use of GPS within two (2) weeks after receipt of formal request from the JICA Study Team.

14. Office Space and Equipment

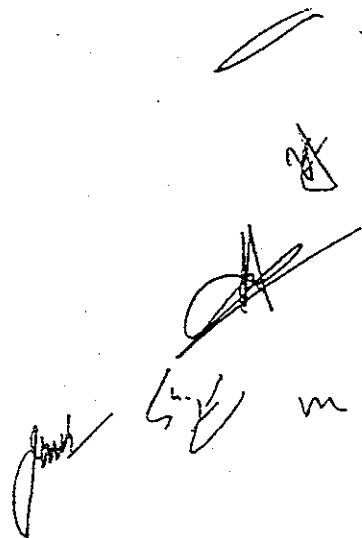
The Committee was informed that the Study Team had been accommodated and the necessary office space and equipment had been made available to the JICA Study Team (refer to Annexure III).

15. Counterpart Training in Japan

The Committee requested the counterpart training to be made during the period of the First Home Work from middle December 2002 to middle of February 2003 in Japan. Mr. Taniguchi, the staff of JICA Headquarters took note of the request and would convey the request to the JICA Headquarters.

Closing Remarks by the Chairman

In closing, the Chairman thanked all members once again for their participation in the meeting, and the Meeting was adjourned.



LIST OF THE PARTICIPANTS

LIST OF THE PARTICIPANTS WHO ATTENDED JOINT MEETING AT FFC HELD ON AUGUST 10, 2002, AND STEERING COMMITTEE MEETING AT FEDERAL FLOOD COMMISSION HELD ON AUGUST 15, 2002

FEDERAL FLOOD COMMISSION (FFC)

1. Mr. Riaz Ahmed Khan In Chair
Chief Engineering Adviser /
Chairman, Federal Flood Commission, Islamabad
2. Mr. Zarar Aslam
Chief Engineer (DSC)/Floods
3. Mr. Ahmed Kamal
Senior Engineer (Floods)
4. Mr. Ather Hameed
Assistant Engineer(Floods)
5. Dr. Masaki Shimizu
JICA Expert on Water Resources

ENGINEERING DIRECTORATE, GHQ, RAWALPINDI

6. Col. Salim Daud
D.D. Engineers

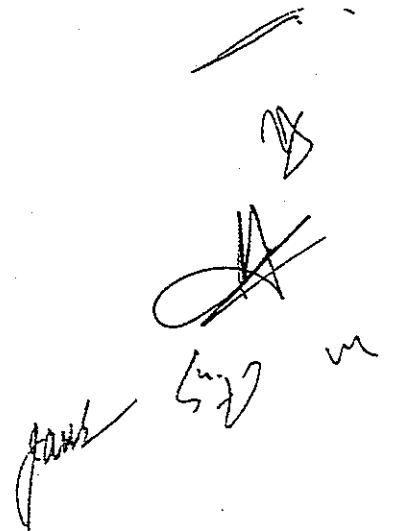
HEADQUARTER ENGINEERS 10-CORPS, RAWALPINDI

7. Brig. Agha Ali Hassan
Commander Engineer, 10-Corps
8. Brig. Tariq
Commander Engineer, 10-Corps
9. Major Zia
Headquarter Engineer 10-Corps

CAPITAL DEVELOPMENT AUTHORITY (CDA)

10. Mr. Mohi-uddin-Jameeli
Member Engineering - CDA
11. Mr. Shafiq Ali Siddiqui
Director Regional Planning, CDA
12. Mr. M. A. Farooqui
Deputy Director, R/A Zone

A-1



LIST OF THE PARTICIPANTS

RAWALPINDI DEVELOPMENT AUTHORITY (RDA)

13. Mr. Yaseer Ahmad Gauhar
Director General, RDA
14. Brig.(R) Habib Ur-Rahman Awan
P.D (PMU), RDA
15. Col.(R) Muhammad Munir Afzal
PMU, RDA
16. Mr. Shuja Abbas Zaidi
RDA Consultants

TEHSIL MUNICIPAL ADMINISTRATION (TMA),RAWALPINDI

17. Col. (R) Najam-Ul-Hassan
Tehsil Municipal Officer, TMA

DISTRICT COORDINATION OFFICE, RAWALPINDI

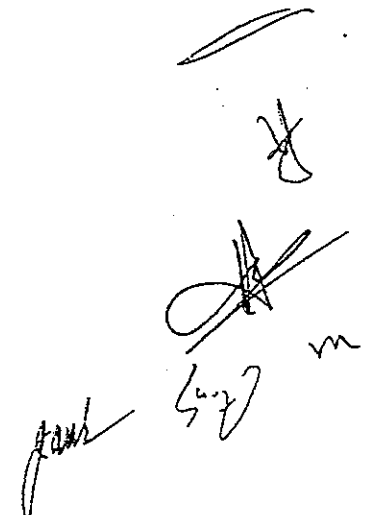
18. Rana Naseer Ahmed
Rep. DCO, Rawalpindi

INDUS RIVER SYSTEM AUTHORITY (IRSA), ISLAMABAD.

19. Mr. Aman Ullah
Chief Engineer (Operation)

SMALL DAMS ORGANIZATION, IRRIGATION & POWER PUNJAB

20. Mr. Javed Afzaal Khan
Project Director
21. Mr. Ijaz-Ul-Hassan Kashif
Assistant Executive Engineer

Handwritten signatures and initials in the bottom right corner of the page. There are several distinct marks, including a large signature that appears to be 'Javed' and other smaller initials and scribbles.

LIST OF THE PARTICIPANTS

JICA ADVISORY COMMITTEE

22. Mr. Yuji Miyagawa
Chairman of Advisory Committee/Team Leader
23. Mr. Yutaka Yahiro
Member of Advisory Committee/River Management

JICA HEADQUARTERS

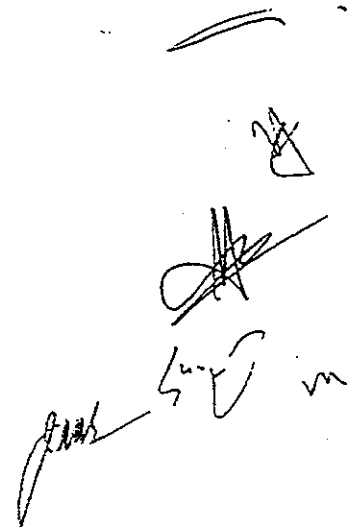
24. Mr. Kotaro Taniguchi
Study Management

JICA PAKISTAN OFFICE

25. Mr. Hidekazu Tanemura
Deputy Resident Representative
26. Mr. Mahmood A. Jilani
Deputy Resident Representative/Chief Programme Officer

JICA STUDY TEAM

27. Mr. Yoshiharu Matsumoto
Team Leader/Watershed Management Planner
28. Mr. Makihiko Otagawa
Sub Team Leader/Flood Control Planner
29. Mr. Susumu Heishi
Hydrologist
30. Mr. Masami Katayama
Hydraulic Engineer
31. Dr. Norihiro Noda
Specialist for Social and Environmental
Affairs/Land Use
32. Mr. Muhammad Qasim Saeed
Institutional Setup Planner
33. Mr. Koichi Kamimura
Surveyor
34. Mr. Takashi Nakajima
Coordinator



LIST OF COUNTERPARTS FOR THE STUDY

<u>Name, Designation & Department</u>	<u>Telephone No.</u>
1. Mr. Zarar Aslam Chief Engineer (DSC)/F O/O CEA/CFFC	051-9204064
2. Mr. Ahmed Kamal Senior Engineer (Floods) O/O CEA/CFFC	051-9204345
3. Mr. Aman Ullah Chief Engineer (IRSA) Islamabad	051-9221049
4. Mr. Shafiq Ali Siddiqui Director Regional Planning CDA, Islamabad	051-9202595
5. Col (R) Aksar Khan Chief Engineer, RDA, Rawalpindi	051-5555864
6. Mr. Sarfraz Sheikh Executive Officer, TMA, Rawalpindi	051-5773768
7. Mr. Ijaz-ul-Hasan Kashif AEE, Small Dams Organization PID, Punjab	051-9219609

OFFICE SPACE AND EQUIPMENT ACCOMMODATED BY GOP

Item	Description	Quantity
Office Space	Room (large)	70m ²
	Room (small)	25m ²
	Toilet	1 unit
Desks	Desk (large)	1 unit
	Desk (Medium)	8 units
	Desk (small)	1 unit
	Chair	12 units
	Cabinet (large)	1 unit
	Cabinet (medium)	2 units
	Side Desk (small)	4 units
	Side Desk (large)	1 unit
Electrical Equipment	Lamp	9 units
	Connector	13 units
	Air Conditioner	2 units
Telephone		2 lines
Others	White Board (large)	4 units
	White Board (small)	1 unit
	Partition	5 units

MINUTES OF STEERING COMMITTEE MEETING

ON

PROGRESS REPORT

**FOR THE STUDY ON
COMPREHENSIVE FLOOD MITIGATION AND
ENVIRONMENTAL IMPROVEMENT PLAN OF LAI
NULLAH BASIN IN THE
ISLAMIC REPUBLIC OF PAKISTAN**

AGREED UPON BETWEEN

**FEDERAL FLOOD COMMISSION
MINISTRY OF WATER AND POWER**

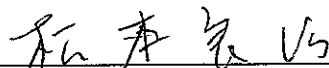
AND

THE JICA STUDY TEAM

November 20, 2002, ISLAMABAD



Mr. Tahir Ahmad Malik
Chief Engineering Advisor/ Chairman,
Federal Flood Commission
Ministry of Water and Power



Mr. Yoshiharu MATSUMOTO
Team Leader of JICA Study Team

The Steering Committee Meetings were held, on 05 and 20 November 2002 at the office of Federal Flood Commission, Ministry of Water & Power, Islamabad to clarify and discuss the results of the first field survey on the Study for Comprehensive Flood Mitigation and Environmental Improvement Plan of the Lai Nullah Basin (hereinafter referred to as "the Study") undertaken by the JICA Study Team for the period from August 09 to December 06 2002. Both the Steering Committee Meetings were chaired by Mr. Tahir Ahmad Malik, the Chief Engineering Adviser/Chairman, Federal Flood Commission. The lists of the participants are enclosed as Annexure-I and II.

The Chairman welcomed the participants of the Steering Committee Meeting on 05 November 2002 and invited them to introduce themselves. Then, the briefings on the results of Study by JICA Study and the discussions among the participants to the Meetings were made seriatim on 05 and 20 November 2002. The major points briefed by the JICA Study Team as well as the items deliberated by the Steering Committee in the Meetings are as enumerated hereinafter:

1. Major Points Briefed by the JICA Study Team

The JICA Study Team firstly apprised the Committee of all the activities made by the Study Team during the first field survey period and the future activities as per the original schedule. Thereafter, the following principal findings and proposals taken up through the activities were presented:

(1) Hydraulic and Hydrological Analysis

Through the hydraulic and hydrological analysis, the JICA Study Team has estimated (a) the probable runoff discharges, (b) the flood routing along the river networks of Lai Nullah and (c) the probable extent of flood inundation area. As the results of the estimation, it was evaluated that the on-going channel improvement of Lai Nullah by RDA could increase the channel flow capacity from about 300m³/s to 640m³/s at Kattarian Bridge (the upper-most point of the improvement section). Nevertheless, the safety level of the channel improvement is still limited to the probable flood discharge of 11-year return period, which is far smaller than 25-year return period as originally designed.

(2) Planning Frameworks

The JICA Study Team proposed the following phased flood mitigation projects considering the safety level of the on-going river channel improvement, the relevant national development plans and other related social factors into account:

- (a) To complete the Urgent Project by 2005 in order to achieve the immediate mitigation of flood damage;
- (b) To complete the Short-term Project with its target design flood scale of 25-year return period by 2007;
- (c) To complete the Long-term Project with its target design flood scale of 100-year return period by 2012; and

- (d) To implement the Program posterior to the Long-term Project to cope with the ever increasing probable peak flood discharge due to progress of urbanization in the catchment area of Lai Nullah.

(3) Possible Structural Measures for Flood Mitigation

The JICA Study Team has provisionally scrutinized the following possible structural measures for flood mitigation and estimated the potential flood mitigation capacity for each of the measures. The Study Team has further clarified the major issues related to implementation of the measures. The optimum flood mitigation would be selected from among the various combinations of the measures considering the above potential flood mitigation capacity, the related issues, and the economic and technical viability of the measures into account.

- (a) River channel improvement by deepening and side protection of Lai Nullah and its tributaries, Saidpur Kas and Tenawali Kas;
- (b) Flood retarding basin/community pond located at Fatima Jinnah Park in Islamabad,
- (c) Flood diversion channel, which include three (3) alternative diversion routes towards Kurang River;
- (d) Flood control dam near to the settlement area of Golra upstream of Bedarawanli Kas, the tributary of Lai Nullah; and
- (e) On-site flood detention facilities to be implemented in the Program posterior to the Long-term Project.

(4) Possible Non-structural Measures for Flood Mitigation

The JICA Study Team proposed the following flood forecasting and warning system in order to strengthen the existing system and mitigate the flood damage, the death calamity in particular;

- (a) Master control station at Pakistan Metrological Department, Islamabad;
- (b) Monitoring station at Federal Flood Commission, Islamabad;
- (c) Executive warning control room at Rawalpindi Fire Brigade HQ for the Urgent Project and at Islamabad Fire Brigade HQ for the Short-term or Long-term Project;
- (d) Telemetry rainfall stations at 6 sites;
- (e) Telemetry water level station at 2 sites for the Urgent Project and 3 supplementary sites for the Short-term or Long-term Project.

- (f) Warning post at the existing 5 sites to be reinforced through the Urgent Project and the new 21 sites to be installed through the Short term or Long-term project;
- (5) Recommended Flood Mitigation Measures to be implemented through Urgent Project

The JICA Study Team has proposed the following flood mitigation measures as the components of the Urgent Project considering the immediate mitigation effect of flood damage and other relevant factors required to the Urgent Project into account:

- (a) Construction of Flood Detention Pond/Community Pond at Fatima Jinnah Park: and
- (b) Reinforcement and expansion of the flood forecasting and warning system.

2. Major Points of Discussion and Decisions by the Committee

The major items discussed regarding the results of the progressive study and the relevant decisions made by the Committee are as enumerated hereinafter:

- (1) Encroachment to Kurang River as Outlet of the Proposed Flood Diversion Channel:

In connection with use of Kurang River as the proposed outlet of the flood diversion channel, the JICA Study Team raised the following issues on the on-going encroachment to the river channel.

- (a) There exist (4) settlement areas along a stretch of about 4.4km between the confluences with two (2) tributaries, Ojhri Kas and Gumreh Kas. These settlement areas are encroaching into the river section, which are the great hindrance for flood flow of the river.
- (b) A private land developer is now developing the residential area along downstream of Kurang River near to the confluence with Soan River. Through the land development, the river channel has been reclaimed, and a new short cut-channel has been constructed. This land development is judged to possibly cause the adverse effect for the flood flow of the river.

In connection with the above issues on encroachment to the river section, the Executive Engineer, Small Dams Organization of I & P Department, Punjab stated that the encroachment is the current great hindrance for release of flood discharge from Rawal Dam, and CDA should take the appropriate measures to stop the illegal occupation of the land. The Director Regional Planning, CDA revealed that the extent of 1,000 feet from the center of the river had been declared as the river reserve area by CDA but enforcement powers for land control in the reserved area rest with Islamabad Capital Territory (ICT) Administration. In this connection, the Chairman noted that nobody could alter and/or hinder the river flow conditions

without approval of the competent river administrator, and the Committee finally took up the following decisions:

- (a) CDA, Small Dam Organization, RDA and ICT Administration are required to avail an earliest opportunity to discuss the necessary countermeasures against the illegal encroachment and land development along Kurang River and to submit a letter, if required, to Ministry of Interior to facilitate and ensure the countermeasures.
 - (b) The satellite image to cover the riverine along Kurang River would be useful to clarify further details of illegal land occupation along the River, which would be the critical factor for construction of the proposed flood diversion channel. From this viewpoint, the JICA Study Team will consult with JICA HQ to purchase the supplementary extent of satellite image to cover the subject extent and to carry out the further study based on it.
- (2) Alternative Routes of Flood Diversion Channel:

The JICA Study Team provisionally proposed three (3) alternative routes, which run through the urbanized area of Islamabad: (a) Route-1 along Kashmir Highway, (b) Route-2 along Khayaban -e-Johar (located one block south from Route 1), and (a) Route-3 along Khyaban-e-Sir Syed (called I-J Principal Road). CDA stated that it is virtually difficult to take up the Route-3 due to the large number of house evacuations required, while Route-1 and Route-2 are preferable, because an extensive space is reserved as the greenbelt along the routes and could be used for the land required by the diversion channel. On the other hand, RDA preferred Route-3, because the route could collect the flood runoff discharge from all upstream tributaries and, at the same time, it could shorten the overall length of diversion channel.

After a series of discussions, the Committee finally agreed that the optimum route of the diversion channel should be determined based on the overall socio-economic viewpoints and technical viewpoints including consideration on the aforesaid issues of Kurang River.

- (3) Land Development in the Proposed Reservoir Area of Flood Control Dam near to the Settlement Area of Golra:

The Committee recognized through the reports from the JICA Study Team and CDA that development of the residential area within the extent of the proposed dam reservoir is now illegally in progress by a private firm without approval by CDA. In this connection, the Director General, RDA stated that CDA should declare the proposed extent for the dam reservoir as the "Controlled Area" against land development, as just like the case of Ring Road for Rawalpindi, where RDA declared the "Controlled Area" along the route of the Road. The participants from Small Dam Organization and Engineers Directorate, GHQ also stated the similar opinion as that of RDA.

Based on the above discussions, the Committee took up the following decisions:

- (a) CDA together with ICT Administration should take up the issue of the illegal land development activities and declare the proposed dam reservoir area as the "Controlled Area" to prohibit construction of any kind of land development activities, until the option of the proposed flood control dam is fully scrutinized.
 - (b) For the above purpose, the JICA Study Team will indicate the exact extent of the dam reservoir and location of the dam site.
- (4) Appurtenant Flood Diversion Channel Connected to Flood Retarding Pond/Community Pond at Fatima Jinnah Park:

The JICA Study Team proposed the flood diversion from the tributary of Bedaranwali Kas to the flood retarding basin/community pond at Fatima Jinnah Park in order to create the two (2) kinds of the significant benefits, that is: (a) the flood control capacity of the proposed flood detention pond would be substantially increased by the diversion, and (b) the diverted water is non-polluted and therefore, the water stored in the pond could be used as the potential source for recharge to the groundwater and at the same time create a good scenery around the pond.

The most economical route of the flood diversion channel, however, needs to cross the compound of the residential area owned by the Air Force. The route would require any of house evacuation but would be subject to agreement by the Air Force HQ. In this connection, the Committee took up the following decisions:

- (a) Federal Flood Commission would do the necessary coordination with Engineer Directorate, GHQ to confirm whether the proposed route could be accepted by Pakistan Air Force.
 - (b) For the above purpose, the JICA Study Team will prepare the necessary document and drawings to indicate the exact route of the proposed diversion and its related facilities.
- (5) Safety Level of the On-going River Channel Improvement by RDA:

As described in the above item 1-(1), the on-going river improvement of Lai Nullah by RDA was assumed to have the design flood level of 25-year return period, while the JICA Study Team has evaluated that the actual safety level of the on-going river improvement is limited to 11-year return period.

The difference of these safety levels is attributed to the difference of the basic hydrological data applied. That is, the hydrological study for the on-going river channel improvement is based on the rainfall data recorded solely at Chaklala, while the JICA Study Team applied all of the rainfall data recorded at the existing four (4) gauging stations in the basin as the basic data for its hydrological study.

The Chaklala gauging station is located in the lower reaches of Lai Nullah. However, the rainfall intensity in the upper reaches of the basin tends to be higher

than that in the lower reaches. In fact, the flood in 2001 recorded the 12-hour rainfall intensity of 620mm at Islamabad gauging station in the upper reaches, but only 170mm at Chaklala gauging station in the lower reaches.

In order to further clarify the above difference, the Committee recommended discussions between the Consultant in charge for the hydrological study for the on-going river channel improvement works and the JICA Study Team.

(6) **The Objectives of the Urgent Project and Necessity of Feasibility Study:**

The Committee agreed with the objectives to be implemented through the Urgent Project, and emphasized the necessity of feasibility study, which would follow this Master Plan Study. In this connection the Committee took up the following decisions:

- (a) The Urgent Project should comprise construction of the flood retarding basin/community pond at Fatima Jinnah Park and reinforcement/expansion of the existing flood forecasting and warning system; and
- (b) A detailed Feasibility Study is necessary to clarify the issues on the flood diversion channel, particularly the conditions of Kurang River as the proposed outlet of the diversion channel.

(7) **Further Comments on the Contents of the Progress Report and Submission of the Draft of the next Interim Report:**

The Committee agreed with the following items related to the Progress Report and the next Interim Report:

- (a) Upon submission of the Progress Report by JICA Study Team, the Steering Committee will send the further comments on the Progress Report, if any, to the JICA Study Team through the JICA Pakistan Office. The JICA Study Team will incorporate the comments into the next Interim Report.
- (b) The JICA Study Team will make an effort to send the Draft of the Interim Report in March 2003 to FFC so that the members of the Steering Committee could study the contents of the Report in advance. This is, however subject to approval by the JICA HQ.

3. Closing Remarks

In closing, the Chairman thanked all members once again for their participation in the Meetings. Mr. Hidekazu TANEMURA, Deputy Resident Representative of JICA Pakistan Office also thanked all the members of the Government of Pakistan concerned for their cooperation with the JICA Study Team for execution of the Study. The Meeting was adjourned at AM 11:30 on November 20, 2002.

**LIST OF PARTICIPANTS THE STEERING COMMITTEE MEETING
ON NOVEMBER 05, 2002.**

Federal Flood Commission

1. Mr. Tahir Ahmad Malik
Chief Engineering Adviser / Chairman
Federal Flood Commission, Islamabad. In Chair
2. Mr. Zarar Aslam
Chief Engineer (DSC) / Flood
O/O CEA / CFFC, Islamabad.
3. Mr. Zia – Ul – Hasan
Assistant Chief
Ministry of Water & Power
Islamabad.
4. Mr. Ahmed Kamal
Senior Engineer
O/O CEA / CFFC, Islamabad.

Capital Development Authority (CDA), Islamabad.

5. Mr. Shafiq Ali Siddiqui
Director Regional Planning, CDA, Islamabad.
6. Mr. M. Rafiq Abbasi
Director (W & S) Development
CDA, Islamabad.

Pak Army Engineering Directorate, GHQ, Rawalpindi.

7. Col. Salim Daud
D.D. Engineers
Pak Army Engineering Directorate, GHQ, Rawalpindi.

Headquarter Engineers 10 Corps, Rawalpindi.

8. Major Zia
HQ Engineers 10 Corps
Rawalpindi.

Rawalpindi Development Authority (RDA), Rawalpindi.

9. Mr. Yaseer Ahmad Gauhar
Director General RDA
Rawalpindi.
10. Brig (R) Habib – Ur – Rehman
Project Director – PMU
RDA, Rawalpindi.
11. Col. (R) Aksar Khan
Chief Engineer RDA, Rawalpindi.
12. Mr. Naiz Mahmud
MMIL Consultant – PMU
RDA, Rawalpindi.

District Coordination Office (DCO), Rawalpindi.

13. Ch. Safdar Saleem Ullah
Dy. District Officer (Revenue)
Rawalpindi.

Small Dams Organization, I & P Department, Punjab.

14. Mr. Abid A. Qureshi
Executive Engineer, Small Dams Organization
I & P Department Punjab
Rawal Dam Colony, Islamabad.

JICA Study Team

15. Makihiko OTOGAWA
Deputy Team Leader/Flood Control Planner
16. Norihiro NODA
Specialist for Social / Environmental Affairs and Land use.
17. Mr. Masami KATAYAMA
Hydraulic Engineer
18. Takahiro MISHINA
Structural Engineer
19. Structural Engineer. Mr. Muhammad Qasim Saeed
Institutional Setup Planner
20. Mr. Hiroei ISHIHARA
Construction Planner/Cost Estimator
21. Mr. Yasuhiko MURAMATSU
Economist

**LIST OF PARTICIPANTS OF STEERING COMMITTEE MEETING
ON NOVEMBER 20, 2002**

Federal Flood Commission.

1. Mr. Tahir Ahmad Malik
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Ph. / Fax No. 9204064
3. Mr. Ahmed Kamal
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O/O CEA / CFFC, Islamabad.
Ph. / Fax No. 9204345

Capital Development Authority (CDA), Islamabad.

4. Mr. Safiq Ali Siddiqui
Director Regional Planning, CDA, Islamabad.
Ph. / Fax No. 9202595
5. Mr. Shahid Mahmood
Deputy Director
CDA, Islamabad.
Ph. / Fax No. 9206903

Pak Army Engineering Directorate, GHQ, Rawalpindi.

6. Col. Salim Daud
D.D. Engineers
Pak Army Engineering Directorate, GHQ, Rawalpindi.
Ph. / Fax No. 561 – 31986

Headquarter Engineers 10 Corps, Rawalpindi.

7. Capt. Muhammad Javed Iqbal
HQ Engineers 10 Corps
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Rawalpindi Development Authority (RDA), Rawalpindi.

8. Mr. Yaseer Ahmad Gauhar
Director General RDA
Rawalpindi.
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9. Brig (R) Habib – Ur – Rehman
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Ph. / Fax No. 5773005
10. Lt. Col. (R) Aksar Khan
Chief Engineer RDA, Rawalpindi.
Ph. / Fax No. 5555864
11. Col. (R) Muhammad Munir Afzal
DSD, PMU, RDA, Rawalpindi.
Ph. / Fax No. 555414
12. Mr. Niaz Mahmud
Team Leader, MMIL Consultant – PMU
RDA, Rawalpindi.
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District Coordination Office (DCO), Rawalpindi.

13. Rana Naseer
For:
Dy. District Officer (Revenue)
Rawalpindi.
Ph. / Fax No. 9270812

Small Dams Organization, I & P Department, Punjab.

14. Mr. Javed Afzaal Khan
Project Director, Small Dams Organization
I & P Department Punjab
Rawal Dam Colony, Islamabad.
Ph. / Fax No. 9210302
15. Mr. Abid A. Qureshi
Executive Engineer, Small Dams Organization
I & P Department Punjab
Rawal Dam Colony, Islamabad.
Ph. / Fax No. 9204005

JICA Pakistan Office

16. Hidekazu TANEMURA
Deputy Resident Representative

JICA Study Team

17. Yoshiharu MATSUMOTO
Team Leader/Watershed Management Planner
18. Makihiko OTOGAWA
Deputy Team Leader/Flood Control Planner
19. Mr. Masami KATAYAMA
Hydraulic Engineer
20. Norihiro NODA
Specialist for Social / Environmental Affairs and Land use.
21. Takahiro MISHINA
Structural Engineer
22. Yasuhiko MURAMATSU
Economist
23. Muhammad QASIM SAEED
Institutional Setup Planner
24. Mr. Hiroei ISHIHARA
Construction Planner / Cost Estimator
25. Akio Okazaki
Coordinator



MINUTES OF STEERING COMMITTEE MEETING

ON

INTERIM REPORT

FOR

**THE STUDY ON
COMPREHENSIVE FLOOD MITIGATION AND
ENVIRONMENTAL IMPROVEMENT PLAN OF LAI
NULLAH BASIN IN THE
ISLAMIC REPUBLIC OF PAKISTAN**

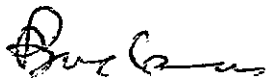
AGREED UPON BETWEEN

**FEDERAL FLOOD COMMISSION
MINISTRY OF WATER AND POWER**

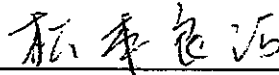
AND

THE JICA STUDY TEAM

16th May 2003, ISLAMABAD



Mr. Zarar Aslam
Chief Engineer (DSC)/Project Director,
Joint Secretary (W & P)



Mr. Yoshiharu MATSUMOTO
Team Leader of JICA Study Team

SUB: MINUTES OF STEERING COMMITTEE MEETING ON INTERIM REPORT FOR THE STUDY ON COMPREHENSIVE FLOOD MITIGATION AND ENVIRONMENTAL IMPROVEMENT PLAN OF LAI NULLAH BASIN

A meeting of the Steering Committee was held on 16 May 2003 in the conference room of CEA/CFFC, Ministry of Water & Power, Islamabad to clarify and discuss the contents of the Interim Report (hereinafter referred to as "the Report") on the Study for Comprehensive Flood Mitigation and Environmental Improvement Plan of the Lai Nullah Basin (hereinafter referred to as "the Study") being undertaken by the JICA Study Team. The meeting of Steering Committee was chaired by the acting Chief Engineering Adviser & Chairman FFC. List of the participants is attached as Annexure-I. Steering Committee member from TMA did not attend the meeting. Chief Engineer DSC/Project Director and Joint Secretary (W&P) could not attend the meeting due to other important pre-occupations in the Ministry of Water & Power, Mr. Ahmed Kamal, Sr. Engineer (F) attended the meeting on behalf of P.D.

The Chairman welcomed the participants of the Steering Committee meeting and highlighted the importance of the project. Upon the request of the Chairman, the contents of the Report were presented by JICA Study Team and discussions were held among the participants of the meeting. Major points deliberated upon by the Steering Committee in the meeting are described hereinafter:

1. Enlargement and re-alignment below Chaklala Bridge:

The JICA Study Team revealed through the Report that it was urgently required to enlarge and realign the existing river channel between the existing waterfall and Chaklala Bridge in order to minimize the backwater effect caused by the bottlenecks of the channel. In that regards, representatives of RDA including PMU and WASA informed the Steering Committee that the enlargement/ realignment of the meandering portion of the subject channel was going to be implemented through the on-going river channel improvement works by RDA. However, RDA also reported that the enlargement/realignment of the channel other than the meandering portion would remain as it is without any channel improvement work. Taking these conditions into account, the Steering Committee made the following decisions:

- (1) The JICA Study Team should clarify the extent of the enlargement/realignment of the meandering portion to be undertaken by RDA and its impact on backwater effect.
- (2) The JICA Study Team should also clarify further necessary improvement works for the subject channel below Chaklala Bridge.
- (3) All clarifications on the above issues should be incorporated into the contents of the Draft Final Report, which would be submitted to the Steering Committee in the middle of July.

2. Additional Improvement Works of Lai Nullah Programmed to be undertaken after the On-going Improvement Works by RDA:

Representatives of RDA informed that RDA had programmed additional improvement works of Lai Nullah under Phase-II of its on-going Urban Water Supply and Sanitation Project (UWSSP). The major work items programmed in the Phase-II of UWSSP include modification of side slopes and provision of side protection by stone pitching. The Steering Committee agreed that the JICA Study Team would collect the details of the information and incorporate them into the flood mitigation measures to be finally proposed in the Draft Final Report.

3. Route of Diversion Channel:

The JICA Study Team proposed Route-2 of the diversion channel as the best option among the three (3) alternative routes. However, RDA preferred Route-3 along I-J Principal Road considering the larger catchment area of the diversion route. Representative of the Small Dam Organization also pointed out the necessity of study on another diversion route connected to Sil Kas River (i.e., towards western side of Lai Nullah Basin). In response to these two comments, the JICA Study Team clarified as follows:

- (a) It is virtually difficult to recommend Route-3 as the optimum route, because it would require a far higher project cost as well as a larger number of houses to be evacuated. Moreover, the CDA being the land administrator of the diversion route had committed only Route-2 as their acceptable route as commented in the last Steering Committee meeting on the Progress Report.
- (b) According to discussions and consultations held with CDA and JICA Study Team, CDA could commit only one available route toward Kurang River (i.e., towards eastern side of Lai Nullah basin) due to recent and programmed urbanization of Islamabad. Taking this situation into account, it is virtually difficult to consider the diversion route to Sil Kas River as commented by the Small Dam Organization.

After detailed discussion on the above matters, the Steering Committee made the following decisions:

- (1) The JICA Study Team should submit to CDA the detailed structural features and the required project cost/compensations for each of alternative routes of the diversion channel.
- (2) Based on the detailed information given by the JICA Study Team, CDA will decide its final commitment on the acceptable route for flood diversion channel.

4. Design Discharge:

The Project Management Unit (PMU), RDA commented that the design discharge estimated by the JICA Study Team in the Progress Report was larger than that estimated by their Consultant i.e. M/S Mott Macdonald International Limit (MMIL) and would have a greater margin of safety. In response to this comment, the JICA Study Team explained the details of hydrological process for estimation of the design discharge, and the Committee finally agreed to the precision of the design discharge estimated by the JICA Study Team.

5. Rehabilitation and Maintenance of Flood Retarding Basin/Community Pond Proposed in Fatima Jinnah Park

Representative of CDA, the land administrator of the proposed site for the flood retarding basin commented that CDA was concerned about the fact that the proposed community pond might be seriously damaged after the flood had subsided, and the measures to properly rehabilitate and maintain the proposed community pond. In response to these comments, the Steering Committee agreed that necessary and appropriate measures for rehabilitation and maintenance of the proposed pond would be described in detail in the Draft Final Report.

6. Issues on Dumping of Garbage and Sewage into Lai Nullah:

The Chairman commented that one of the important issues that was required to be addressed for improvement of Lai Nullah was control on dumping of garbage and sewage into Lai Nullah and separation of trunk sewers. In response to the comment, the Steering Committee agreed that the details of the issues as well as their necessary countermeasures would be described in the Draft Final Report.



7. Necessity of Independent and Unified River Administrator for Lai Nullah:

The Steering Committee agreed to the necessity of an independent and unified River Administrator for consistent development and maintenance of the entire stretch of Lai Nullah as proposed in the Interim Report.

8. Planning Frameworks, Structural Measures and Non-structural Measures Proposed in the Interim Report:

Through a series of discussions as described under items 1 to 7 above, the Steering Committee finally agreed to the contents proposed in the Interim Report including the proposed planning frameworks, structural measures and non-structural measures subject to certain further clarifications and revisions as minuted in the preceding paragraphs.

9. Seminar for the Study:

The JICA Study Team informed the Committee that a Seminar on the Study would be held during the next Field Survey Period at the end of July 2003 in order to transfer and exchange knowledge on the flood control works. In this connection, the Steering Committee agreed to cooperate in executing the Seminar including nomination of Pakistani Speakers for the Seminar.

10. Executing Agencies for Urgent Project Proposed in the Interim Report:

The representative of Pakistan Meteorological Department (PMD) agreed on involving PMD as one of the executing agencies for the "Project on Flood Forecasting and Warning System for Lai Nullah Basin" under the overall co-ordination of FFC, M/O Water & Power, which is one of the urgent projects as proposed in the Interim Report.

11. Preparation of Concept Clearance Paper (CCP) and PC-1 for the Urgent Projects Proposed in the Inception Report:

The Steering Committee agreed that the urgent projects proposed in the Interim Report should be implemented at the earliest. In order to facilitate the early commencement of the projects, the Steering Committee also agreed to propose that the two (2) urgent projects would be implemented through the Japanese Grant Aid Program. In this connection, Federal Flood Commission has prepared Concept Clearance Paper (CCP) for two (2) urgent projects, as identified in the Interim Report for implementation after following the necessary formalities relating to Grant-in-Aid projects. Copies of CCPs in respect of two (2) urgent projects were circulated among the participants of Steering Committee meeting with a request to furnish their comments, if any, by May 26, 2003. FFC will finalize the CCP incorporating the comments and make necessary arrangement for transmittal of the same to Ministry of Water & Power and EAD. At the same time, it was agreed that the JICA Study Team would provide support in the preparation of the skeleton of the draft PC-1s for implementation of the two (2) urgent projects.

Summing up the discussions, the Chairman thanked all members for their participation in the meeting. The JICA Representative Office in Pakistan also announced that Mr. TAKAHASHI Makoto, Deputy Resident Representative of JICA Pakistan Office would succeed as the coordinator for the Study from Mr. Hidekazu TANEMURA. The meeting was thereafter adjourned.

ANNEXURE-1

LIST OF THE PARTICIPANTS WHO ATTENDED THE MEETING OF STEERING COMMITTEE FOR THE STUDY ON COMPREHENSIVE FLOOD MITIGATION AND ENVIRONMENTAL IMPROVEMENT PLAN OF LAI NULLAH BASIN HELD ON MAY 16, 2003 IN THE COMMITTEE ROOM OF O/O CEA/CFEC, ISLAMABAD

MINISTRY OF POWER/FEDERAL FLOOD COMMISSION (FFC)

- | | |
|--------------------|---|
| 1. Mr. I.B.Shaikh | Acting Chief Engineering Advisor/Chairman FFC |
| 2. Mr. Rashid Ali | Deputy Secretary (Water) |
| 3. Mr. Ahmed Kamal | Senior Engineer (Floods) |

HEAD QUARTERS ENGINEERS 10-CORPS, RAWALPINDI

- | | |
|-------------------------|---------|
| 4. Capt. Zeeshan Haider | Captain |
|-------------------------|---------|

CAPITAL DEVELOPMENT AUTHORITY

- | | |
|------------------------------|-----------------------------|
| 5. Mr. Shafique Ali Siddiqui | Director, Regional Planning |
| 6. Mr. Khali-Ur-Rahman | Deputy Director, Planning |

RAWALPINDI DEVELOPMENT AUTHORITY

- | | |
|---------------------------|----------------|
| 7. Lt. Col (R) Aksar Khan | Chief Engineer |
|---------------------------|----------------|

WASA, RAWALPINDI DEVELOPMENT AUTHORITY

- | | |
|----------------------------|-------------------|
| 8. Mr. Yaseer Ahmed Gauhar | Managing Director |
|----------------------------|-------------------|

PROJECT MANAGEMENT UNIT-RDA, Rawalpindi

- | | |
|----------------------------------|----------------------------------|
| 9. Brig (R) Habib Ur Rehman Awan | Project Director |
| 10. Col (R) Muhammad Munir Afzal | Director (Sewerage and Drainage) |

SMALL DAMS ORGANIZATION, IRRIGATION & POWER PUNJAB

- | | |
|-------------------------------|--------------------|
| 11. Mr. Abid Alluddin Qureshi | Executive Engineer |
|-------------------------------|--------------------|

PAKISTAN METROLOGICAL DEPARTMENT

- | | |
|---------------------------|-----------------|
| 12. Mr. Anjum Bari | Director |
| 13. Mr. Jan Muhammad Khan | Deputy Director |

District Co-ordination Office - RAWALPINDI

- | | |
|------------------------|-----|
| 14. Mr. Hamid Ali Khan | DCO |
|------------------------|-----|

JICA PAKISATAN OFFICE

- 15. Mr. Takahashi Makoto
- 16. Mr. Mehmood Jilini

Deputy Resident Representative
Deputy Resident Representative/Chief
Programme Officer

JICA SUUDY TEAM

- 17. Mr. Matsumoto Yoshiharu
- 18. Mr. Otagawa Makihiko
- 19. Mr. Mishina Takahiro
- 20. Mr. Noda Norihiro
- 21. Mr. Ishii Akio
- 22. Mr. Wada Akira

Team Leader
Deputy Team Leader
Structural Engineer
Specialist for Social/Environmental Affairs
Specialist for Solid Waste and Sanitation
Hydrologist/Hydraulic Engineer

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A-2

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MINUTES OF STEERING COMMITTEE MEETING
ON
THE RESULTS OF SECOND FIELD SURVEY
FOR
THE STUDY ON
COMPREHENSIVE FLOOD MITIGATION AND
ENVIRONMENTAL IMPROVEMENT PLAN OF LAI NULLAH
BASIN IN THE
ISLAMIC REPUBLIC OF PAKISTAN

AGREED UPON BETWEEN

FEDERAL FLOOD COMMISSION
MINISTRY OF WATER AND POWER

AND

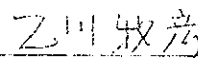
THE JICA STUDY TEAM

18th June 2003, ISLAMABAD



Mr. Zarar Aslam

Chief Engineer (DSC)/Project Director,
Joint Secretary (W & P)



Mr. Makihiko OTOGAWA
Deputy Team Leader of
JICA Study Team

SUB: MINUTES OF STEERING COMMITTEE MEETING ON THE RESULTS OF THE SECOND FIELD SURVEY FOR THE STUDY ON COMPREHENSIVE FLOOD MITIGATION AND ENVIRONMENTAL IMPROVEMENT PLAN OF LAI NULLAH BASIN UNDER JICA GRANT-IN-AID

A meeting of the Steering Committee was held on 18 June 2003 in the conference room of O/O CEA/CFFC, Ministry of Water & Power, Islamabad to clarify and discuss the results of the second field survey for the Study on Comprehensive Flood Mitigation and Environmental Improvement Plan of the Lai Nullah Basin (hereinafter referred to as "the Study") being undertaken by the JICA Study Team. The meeting of Steering Committee was chaired by the Acting CEA/CFFC, Ministry of Water and Power. List of the participants is attached as Annexure-I. Chief Engineer DSC/Project Director and Joint Secretary (W&P) could not attend the meeting due to other important pre-occupations in the Ministry of Water & Power and so Mr. Ahmed Kamal, Sr. Engineer (F) attended the meeting on behalf of P.D.

The Chairman welcomed the participants of the Steering Committee meeting. Then the JICA Study Team presented the principal findings and proposals identified through their second field survey, which started on 14 May 2003. Major points deliberated upon by the Steering Committee in the meeting are described hereinafter:

1. Project Cost as Estimated in the Concept Clearance Paper (CCP) for Flood Forecasting System:

The representative from Rawalpindi Development Authority (RDA) questioned about the estimation base for the project cost presented in the CCP of Lai Nullah Flood Forecasting and Warning System Project. Representative from Pakistan Meteorological Department (PMD) commented that the cost for the equipment of the proposed flood forecasting and warning system seemed to be overestimated as compared with the prevailing cost in Pakistan. In response the JICA Study Team explained the following items to the Steering Committee:

- (1) The major part of the project cost is estimated on the basis of the prevailing market prices in Pakistan with reference to the contract price of the on-going river channel improvement by Project Management Unit (PMU) of RDA. The cost of imported goods required for the Project is, however, based on the market price in Japan at Free On Board (F.O.B) basis.
- (2) The cost for the equipment of the flood forecasting and warning system in the CCP was still preliminary estimation, and has been re-estimated during this second field survey. The CCP for the flood forecasting and warning system will be revised, accordingly.

The Steering Committee agreed to the above explanation of the JICA Study Team, and decided to further scrutinize the estimated cost in due course.

2. Work Items Proposed in Each Phased Programs:

The Steering Committee confirmed the following work items to be included in each of the phased program for the structural flood mitigation measures:

- (1) Urgent Project: Construction of community pond in Fatima Jinnah Park and river channel improvement for a section of about 1km in length below Chaklala Bridge, which is left behind without any channel improvement in the on-going work by PMU of RDA.
- (2) Short-term Project: Construction of flood diversion channel and improvement works of Kurang river with design scale of 25-year return period flood, and side-protection work for the on-going and proposed river channel improvement section below Kattarian Bridge.
- (3) Long-term Project: Construction of flood diversion channel with design scale of 100-year return period together with improvement works of Kurang river.

In connection with the side-protection of the river channel improvement section to be implemented in the short-term project, the representative from Small Dams Organization of I & P Department, Punjab, commented that the wet stone masonry proposed by the JICA Study Team is not preferable as a type of side protection. He also commented that the improvement



of Kurang River should be highlighted as a part of the necessary works for the flood diversion. The JICA Study Team took note of these comments.

3. Construction of Community Pond in Fatima Jinnah Park:

Representative from CDA informed that they had constructed a small pond in the Park in 1991 but the water in the pond gave off an offensive odor to the public due to stagnant water. Based on this experience, the representative from CDA requested the JICA Study Team to consider appropriate countermeasures to stop the offensive odor upon completion of the proposed community pond. Representative from CDA also pointed out that a substantial extent of the amenity space would be submerged and damaged once the flood occurs, and therefore, the submerged area by the community pond should be minimized.

In response to the above comments, the JICA Study Team explained the following two items:

- (1) In order to minimize the offensive odor, several facilities are proposed such as the oxidation ponds to improve the water quality of inflow and the check dams to stop the garbage flowing to the pond. A diversion channel is also designed to bring the clean discharge from the adjacent river (i.e., Bedaranwali Kas) into the pond. Moreover, the inflow from Tenawali Kas, which now gives an offensive odor, is designed to take a different channel route not connected to the pond.
- (2) The area once submerged during a flood could be dried up in four (4) days at the most. There now exist a few ponds in the Park, which are under water throughout the rainy season but dried up during the dry/non-rainy season. According to the field reconnaissance by JICA Study Team, once the ponds are dried up, area of the ponds could be used as ordinary grassland. Accordingly, the extent of the submerged area, which is proposed in the Study as an open amenity space such as garden, playground and tennis court, will not have any substantial damage even after occurrence of flood. The Director Environment (Urban), CDA, who is currently in charge of management of the Park also agreed to this view of JICA Study Team during a field visit with them.

Through further discussion, the Steering Committee agreed to the above views of the JICA Study Team and further requested the representative of CDA to have a field reconnaissance, if required, together with JICA Study Team and the Director Environment (Urban), CDA, who is in charge of management of the Park so as to confirm the views of JICA Study Team.

4. River Channel Improvement below Chaklala Bridge:

In accordance with the explanation given by the JICA Study Team, the Steering Committee agreed that the section below Chaklala Bridge, which is left behind without any channel improvement work, should be urgently improved as one of the top priority projects in order to offset the adverse backwater effect to the upper on-going channel improvement section. The Government of Pakistan should make necessary budgetary arrangement for improvement of the section.

5. Program posterior to Long-term Project:

The JICA Study Team explained that according to the urban plan of Islamabad, about 50% of Lai Nullah in Islamabad would be kept as the non built-up area, which will not cause any significant increment of peak flood discharge even in 2030, and the flood mitigation structures proposed as the components of the long-term project could guarantee the design safety level of 100-year return period. However, should the land developers expand their development area more than the limit projected in the Islamabad Urban Plan, the flood peak discharge may increase to a critical level. Under such conditions, the JICA Study Team pointed out the necessity of certain countermeasures such as the on-site flood detention pond as the program posterior to long-term project to offset the increment of peak discharge.

In connection with the above explanation by the JICA Study Team, the representative of CDA commented that CDA will not allow the excessive land development and therefore, it is not necessary to consider any excessive increment of peak flood discharge to happen.

The Steering Committee took note of the above explanation by the JICA Study Team as well as relevant comments by CDA.

6. Flood Forecasting and Warning System:

In connection with the draft of the Concept Clearance Paper (CCP) for the flood forecasting and warning system, which is subject to request to Japanese grant-aid, following comments were given from the relevant agencies:

- (1) Representative from RDA strongly requested that the office of WASA, RDA should be included as one of the monitoring stations of the proposed flood forecasting warning system so as to pre-empt the flood conditions in its jurisdiction area and take the necessary actions for flood prevention and evacuation.
- (2) Representative from PMD asked about the possibility of the Japanese grant-aid to cover construction of one or two new operation rooms for the flood forecasting and warning system within premises of PMD headquarters in Islamabad.

In response to the comments, the Steering Committee made the following conclusions/decisions:

- (1) The office of WASA should be included as one of the monitoring stations, and the CCP be revised accordingly.
- (2) Construction of the new operation room is not required considering that the proposed data processing equipment for flood forecasting and warning system would not require any extensive space.

7. Study Items Programmed in Urban Water Supply and Sanitation Project, Phase-II (UWSSP-II):

As announced in the last Steering Committee Meeting held on 16 May 2003, RDA had programmed to study effectiveness of additional improvement works of Lai Nullah under Phase-II of UWSSP, which will start in August 2003 with an execution period of 5-months. The major study items programmed in Phase II-UWSSP include realignment of meandering section just downstream from Kattarian Bridge and modification of side slopes of the on-going improvement section.

The JICA Study Team preliminarily clarified and confirmed the hydraulic effectiveness about the additional improvement works. However, the JICA Study Team also pointed out several unknown factors such as possibility of house evacuations required for the subject realignment of the meandering section and details of bank materials used in the on-going channel improvement. These unknown factors are essential to confirm the eligibility of the additional improvement works programmed by RDA.

After supplementary explanation by RDA about the above programmed study, the Steering Committee finally concluded that the study might effect the increase of the channel flow capacity of Lai Nullah, but it is necessary to confirm the unknown factors as pointed out by the JICA Study Team through the programmed study.

8. Flood Diversion Channel:

The representative from CDA commented that the optimum route of the diversion channel along Khayaban-e-Johar would hamper the plan for the new service road prepared by CDA. In response to the comment, the JICA Study Team explained that the cross-section of the optimum diversion channel was modified in accordance with the plan of the new service road. In spite of the modification, the representative from CDA declined to concur to the proposed diversion channel.

In connection with the comment by CDA, Steering Committee members also pointed out the following items:

- (1) Discussions on the diversion channel have been made through a series of Steering Committee Meetings based on CDA's initial commitment on the greenbelt along Khayaban-I-Johar to be used for the diversion channel.
- (2) All the reports prepared by the Study Team had been shared between the members of the Steering Committee for their valuable comments. Although comments from other members of the Steering Committee were received, no comments were received from CDA on the Progress Report as well as on the Interim Report despite reminders.
- (3) FFC also submitted an official letter to CDA requesting its final commitment on the diversion route, but reply on the issue is yet to be received.
- (4) It was observed that comments from CDA's representative are likely to jeopardize the whole plan of the proposed diversion channel against the consensus of the Steering Committee.

Based on the discussions as above, the Steering Committee authorized Acting CEA/CFFC to have further discussion over this issue with the Chairman, Member (Planning) and Member (Engineering) of CDA so as to confirm the final commitment of CDA on the route of diversion channel.

9. Schedule of Next Field Survey:

The JICA Study Team proposed the following schedule for the next field survey, which includes the Steering Committee Meeting on the Draft Final Report and a Seminar for exchange of knowledge on the issue of flood management.

Date in 2003	Activities in Morning	Activities in Afternoon
31 Jul. Thu.	• Arrival of Study Team in Islamabad	
1 to 5 Aug.	• Field survey by Study Team	
6 Aug. Wed.	• Arrival of Advisory Team in Islamabad in the early morning • Courtesy call to JICA, Embassy of Japan, Ministry of Water and Power and CDA	• Steering Committee Meeting on Draft Final Report at FFC (Notice of the meeting to be issued by FFC)
7 Aug. Thu.	• Courtesy call to RDA and TMA	• Discussion on Minutes of August 06, 2003 Meeting at FFC
8 Aug. Fri.	• Signing on the Minutes of Meeting at FFC	• Report on the results of Meeting to Embassy of Japan etc.
9 Aug. Sat.	• Preparation for the Seminar	
10 Aug. Sun.	• Field reconnaissance	• Field reconnaissance
11 Aug. Mon.	• Seminar	• Seminar • Departure of Advisory Committee
12 Aug. Tue.		• Departure of Study Team

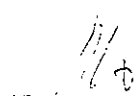
The above schedule was agreed to by all the members. In connection with the schedule as proposed above, the Steering Committee made the following decisions:

- (1) The relevant agencies will make necessary arrangement for the courtesy call of the Advisory Committee. The time expected for courtesy call is as below:

Ministry of Water and Power	:	09:00 AM on 06 Aug. (Wed.)
CDA	:	10:00 AM on 06 Aug. (Wed.)
RDA	:	09:00 AM on 07 Aug. (Thu.)
TMA	:	10:00 AM on 07 Aug. (Thu.)
- (2) All members of the Steering Committee will attend the Steering Committee Meeting on the Draft Final Report on 06 August 2003. Difficulties are, however, foreseeable in distributing the advance copies of the Draft Final Report to the members before the meeting due to the time constraint. The Study Team will present the contents of the Draft Final Report at the meeting, and the members are requested to give their comments within one month. The comments will be incorporated into the final report.
- (3) About 45 Pakistani participants and 4 Pakistani speakers for the Seminar will be listed up through coordination of the Project Director. The logistic works for the Seminar will be

undertaken by the local staff of the Study Team and for that purpose JICA Study Team Office will remain in operation with the local staff till the arrival of the team again on July 31, 2003.

Summing up the discussions, the Chairman thanked all members for their participation in the meeting. The meeting was thereafter adjourned.



ANNEXURE-I

LIST OF THE PARTICIPANTS WHO ATTENDED THE MEETING OF STEERING COMMITTEE FOR THE STUDY ON COMPREHENSIVE FLOOD MITIGATION AND ENVIRONMENTAL IMPROVEMENT PLAN OF LAI NULLAH BASIN HELD ON MAY 18, 2003 IN THE COMMITTEE ROOM OF O/O CEA/CFFC, ISLAMABAD

MINISTRY OF POWER/FEDERAL FLOOD COMMISSION (FFC)

- | | |
|-----------------------|--------------------------|
| 1. Mr. I.B.Sheikh | Acting CEA/CFFC |
| 2. Mr. Ahmed Kamal | Senior Engineer (Floods) |
| 3. Mr. Masaki Shimizu | JICA Expert for FFC |

ENGINEERING DIRECTORATE, GHQ, RAWALPINDI

- | | |
|---------------------------|--------------------|
| 4. Lt. Colonel Ijaz Ahmed | Lieutenant Colonel |
|---------------------------|--------------------|

CAPITAL DEVELOPMENT AUTHORITY

- | | |
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| 5. Mr. Shafiq Ali Siddiqui | Director, Regional Planning |
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WASA, RAWALPINDI DEVELOPMENT AUTHORITY

- | | |
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| 6. Mr. Yaseer Ahmed Gauhar | Managing Director |
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RAWALPINDI DEVELOPMENT AUTHORITY

- | | |
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| 7. Lt. Col (R) Aksar Khan | Chief Engineer |
|---------------------------|----------------|

TEHSIL MUNICIPAL ADMINISTRATION (TMA), RAWALPINDI

- | | |
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| 8. Mr. Aftab Chohan | Chief Officer, TMA, Rawalpindi |
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SMALL DAMS ORGANIZATION, IRRIGATION & POWER PUNJAB

- | | |
|-------------------------------|--------------------|
| 9. Mr. Javed Afzaal Khan | Project Director |
| 10. Mr. Abid Alluddin Qureshi | Executive Engineer |

PAKISTAN METROLOGICAL DEPARTMENT

- | | |
|---------------------------|-----------------|
| 11. Mr. Anjum Bari | Director |
| 12. Mr. Jan Muhammad Khan | Deputy Director |

DISTRICT CO-ORDINATION OFFICE - RAWALPINDI

- | | |
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| 13. Mr. Khalid Yamin | ADO (Revenue) |
|----------------------|---------------|

JICA PAKISATAN OFFICE

14. Mr. Takahashi Makoto
15. Mr. Mahmood Jilani

Deputy Resident Representative
Deputy Resident Representative/Chief
Programme Officer

JICA SUUDY TEAM

16. Mr. Otagawa Makihiro
17. Mr. Mishina Takahiro
18. Mr. Noda Norihiro
19. Mr. Muramatsu Yasuhiko
20. Mr. Muhammad Qasim Saeed

Deputy Team Leader
Structural Engineer
Specialist for Social/Environmental Affairs
Economist
Institutional Setup Planner

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J/K

MINUTES OF STEERING COMMITTEE MEETING

ON

THE DRAFT FINAL REPORT

FOR

**THE STUDY ON
COMPREHENSIVE FLOOD MITIGATION AND
ENVIRONMENTAL IMPROVEMENT PLAN OF
LAI NULLAH BASIN
IN THE ISLAMIC REPUBLIC OF PAKISTAN**

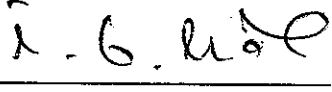
AGREED UPON BETWEEN

**FEDERAL FLOOD COMMISSION
MINISTRY OF WATER AND POWER**

AND

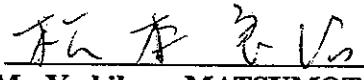
THE JICA STUDY TEAM

8th August 2003, ISLAMABAD



Mr. Illahi B. Shaikh
Acting Chief Engineering
Advisor/Chairman
Federal Flood Commission,
Ministry of Water and Power

8/8/03



Mr. Yoshiharu MATSUMOTO
Team Leader of
JICA Study Team

Witness



Mr. Yuji MIYAGAWA
Chairman of JICA Advisory Committee

SUB: MINUTES OF STEERING COMMITTEE MEETING ON THE DRAFT FINAL REPORT FOR THE STUDY ON COMPREHENSIVE FLOOD MITIGATION AND ENVIRONMENTAL IMPROVEMENT PLAN OF LAI NULLAH BASIN

A meeting of the Steering Committee was held on August 6, 2003, in the Committee Room of o/o CEA/CFFC, Ministry of Water & Power, Islamabad, to clarify and discuss on the contents of the Draft Final Report for the Study on Comprehensive Flood Mitigation and Environmental Improvement Plan of the Lai Nullah Basin (hereinafter referred to as "the Study") being undertaken by the JICA Study Team. The meeting was chaired by Mr. Illahi B. Shaikh, the Acting CEA and Chairman of the Federal Flood Commission, Ministry of Water and Power. List of the participants is attached as Annexure-I.

The Chairman welcomed the participants of the Steering Committee meeting. The JICA Study Team then presented the contents of the Draft Final Report. Major points deliberated upon by the Steering Committee in the meeting are described hereinafter:

1. Cross-sectional Arrangement of the Proposed Diversion Channel:

The JICA Study Team proposed in the Draft Final Report that the diversion channel would run on the center of the existing greenbelt along the Khayaban-E-Johar Road and be flanked on both sides with the two (2) lanes of service roads projected by CDA. In connection with the proposal, the representative from CDA commented that the two (2) lanes of the road should not be separated by the diversion channel, and instead they should be placed on one side of the greenbelt and the diversion channel on the other side. The Committee agreed to incorporate the comments into the Final Report.

2. Width of the Proposed Diversion Channel:

The JICA Study Team proposed in the Draft Final Report that the width of 126ft. is required as the minimum requirement of the diversion channel along the Khayaban-E-Johar Road to accommodate the design flood discharge of 100-year return period. The representative from CDA commented that the allowable maximum width of the channel should be restricted to 105ft. taking the CDA's Master Plan into account. After detailed discussion on the proposal by the JICA Study Team and the comments from CDA, the Steering Committee finally decided to have the following statements in the Final Report.

- (1) The width of 126ft. was provisionally estimated according to the information so far collected through this Master Plan Study. In this connection, the further detailed Feasibility Study should be made to confirm whether the maximum allowable width offered by CDA is feasible for the target flood mitigation level of 100-year return period based on the detailed topographic survey, river channel survey and other relevant field surveys.
- (2) The Feasibility Study should also include clarification on effectiveness of supplementary measures to reduce the width of the diversion channel such as construction of the vertical wall along the diversion channel, providing a flood detention pond at the confluence of channel with Kurang river and supplementary routes of diversion channel.
- (3) If the allowable width offered by the CDA is judged not to be economically and/or technically feasible even through the above re-estimation/clarification, the Feasibility Study should be also made in accordance with the concept of lowering of the target design level of 100-year return period, whereby the width of the diversion channel could be set within the limit offered by CDA.

3. Necessity of Implementation of the Proposed Diversion Channel:

The representative from RDA emphasized the necessity of the implementation of the proposed diversion channel to get rid of the potential flood damage in Rawalpindi in particular. From these viewpoints, he commented that the feasibility study on the proposed diversion channel should be executed at the earliest, and the Steering Committee agreed to

his comment. The representative from RDA appreciated CDA's agreement to the proposal of diversion channel from within Islamabad.

4. Strengthening of Institutional Setup for Consistent Basin-wide Administration of Lai Nullah:

The Steering Committee highlighted the necessity of an Integrated Coordination Body among the relevant agencies such as CDA, RDA and RCB, in order to enhance the coordination capacity for the consistent basin-wide management and administration of Lai Nullah.

5. Rehabilitation of the Proposed Community Pond after a Flood:

The representative from CDA commented that the Draft Final Report should specify the detailed measures and the definitive execution body for rehabilitation of the community pond damaged by a flood. In response to the comments, the JICA Study Team explained the following items, which were agreed to by all.

- (1) The rehabilitation would be made by using a set of heavy construction equipment such as backhoe and dump trucks. Detailed methodologies as well as the required cost of rehabilitation (Rs. 3.3 million/year) are also described in the Draft Final Report.
- (2) A Management Committee as well as a Task Force is proposed to implement the overall proposed flood mitigation plan. The objective rehabilitation works would be undertaken through these entities.
- (3) All of the above statements will also be reflected in the Summary of the Final Report to emphasize them.

6. Facilities for Purification of Water Quality of the Proposed Community Pond:

The representative from CDA commented that the Draft Final Report should clearly describe the proposed facilities to purify the water quality of the inflow into the community pond. The JICA Study Team explained that the subject facilities are described only in the Draft Supporting Report but would also be put into the Final Summary Report and the Main Report. The Committee agreed to the response.

7. Amenity Facilities Attached to the Proposed Community Pond:

The amenity facilities were proposed in the Draft Final Report, as the necessary attachments to the community pond from the viewpoint that the community pond is constructed in the existing national park and, it should not spoil the amenity and scenery of the park. From these backgrounds, the Government of Pakistan would request the Japanese Grant Aid, through the CCP and PC-1, to extend construction of the community pond including the amenity facilities. The JICA Study Team, however, noted that the Government of Japan would appraise the eligibility of the community pond as the objective of the Grant Aid based on a policy such that the priority of the Grant Aid should be given to the basic human needs.

8. Expected Flood Mitigation Effect of the Proposed Community Pond against Consecutive Large Floods:

The chairman of the Steering Committee questioned about the expected flood mitigation effect of the proposed community pond in case that two consecutive large floods occur and flow into the pond. In response to the question, the JICA Study Team explained the following items, which were agreed to by all members of the Steering Committee:

- (1) The community pond could store almost all of a probable flood runoff discharge of 25-year return period, and the water once impounded in the pond could be fully released within 72 hours after the flood.
- (2) If a flood discharge of more than 25-year flow into the pond, the floodwater would fill up to the surcharge water level of the pond. Under this condition, if another consecutive flood discharge flow into the pond, the whole of the inflow discharge to the pond would be released through the emergency spillway of the pond, and the pond

loses its flood mitigation capacity. However, the outflow discharge from the pond is not more than the inflow discharge. Accordingly, the outflow discharge from the pond would never affect the present flood conditions in Lai Nullah Basin.

9. Revision of the Draft Final Report:

The Steering Committee requested to revise the following items presented in the Draft Final Report and the JICA Study Team agreed to revise them in the Final Report.

- (1) The figures of discharges, which may be emblematic of the contents of the Draft Final report, should be presented in both of the cubic meter per second (m^3/s) and cubic feet per second (cusec).
- (2) The word of "Khayaban-E-Siryed Road" written in the second paragraph on page 9 in the Draft Summary Report should be corrected to "Khayaban-E-Johar Road" and elsewhere.
- (3) The symbol for the Chaklala station presented as the water level gauging station on Fig. 24 in the Draft Summary Report should be corrected to the symbol as the rainfall gauging station.

10. Concept Clearance Papers (CCP) for the Urgent Projects:

The Steering Committee confirmed that the members of the Committee have no more principal comments on the CCPs and agreed to forward them for implementation. It was informed to the participants by representative of M/O Water & Power that two CCPs for the Urgent Projects have already been sent to EAD for conveying formal request to Government of Japan.

11. PC-1s for the Urgent Projects:

The Steering Committee agreed that the members of the Committee should give their written comments on the Draft PC1s to Federal Flood Commission by August 21, 2003. Copies of draft of two PC1s were circulated among the Steering Committee members during the meeting.

12. Comments on the Draft Final Report:

The Steering Committee agreed that the members of the Committee would give their written comments on the Draft Final Report to the Federal Flood Commission by August 21, 2003, and the Federal Flood Commission would send the comments to JICA Study Team through JICA Pakistan Office by the end of August 2003. The JICA Study Team agreed to incorporate the comments into the Final Report.

13. Seminar on 11th August 2003:

The Steering Committee members were invited for August 11, 2003 Seminar at Hotel Marriott, Islamabad.

Summing up the discussions, the Chairman thanked all members for their participation in the meeting. The meeting was thereafter adjourned.

LIST OF THE PARTICIPANTS

WHO ATTENDED THE MEETING OF STEERING COMMITTEE FOR THE STUDY ON
 COMPREHENSIVE FLOOD MITIGATION AND ENVIRONMENTAL IMPROVEMENT
 PLAN OF LAI NULLAH BASIN
 HELD ON 6th AUGUST, 2003 IN THE COMMITTEE ROOM
 OF O/O CEA/CFFC, ISLAMABAD

< PAKISTAN SIDE >

MINISTRY OF WATER & POWER, FEDERAL FLOOD COMMISSION (FFC)

- | | |
|-------------------------|---|
| 1. Mr. I. B. Shaikh | Acting CEA/CFFC and Engineering Advisor (Civil) |
| 2. Mr. Asjad Imtiaz Ali | Chief Engineer (Floods) |
| 3. Mr. Rashid Ali | Deputy Secretary (Water) |
| 4. Mr. Ahmed Kamal | Senior Engineer (Floods) |
| 5. Mr. Shimizu Masaki | JICA Expert for O/O CEA/FFC |

GHO, RAWALPINDI

- | | |
|---------------------------|--------------------|
| 6. Brig. Nusrat Ullah | Brigadier |
| 7. Lt. Colonel Ijaz Ahmad | Lieutenant Colonel |

CAPITAL DEVELOPMENT AUTHORITY (CDA)

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|------------------------------|-----------------------------|
| 8. Mr. Shafique Ali Siddiqui | Director, Regional Planning |
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WASA, RAWALPINDI DEVELOPMENT AUTHORITY (RDA)

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| 9. Mr. Aslam Sabzwari | Managing Director |
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RAWALPINDI DEVELOPMENT AUTHORITY (RDA)

- | | |
|----------------------------|----------------|
| 10. Lt. Col (R) Aksar Khan | Chief Engineer |
|----------------------------|----------------|

TEHSIL MUNICIPAL ADMINISTRATION (TMA), RAWALPINDI

- | | |
|-------------------------|-----------------|
| 11. Mr. Kh. Javed Latif | TMO, Rawalpindi |
|-------------------------|-----------------|

SMALL DAMS ORGANIZATION (SDO), IRRIGATION & POWER DEPARTMENT, PUNJAB

- | | |
|-------------------------------|--------------------|
| 12. Mr. Javed Afzaal Khan | Project Director |
| 13. Mr. Abid Alluddin Qureshi | Executive Engineer |

PAKISTAN METROLOGICAL DEPARTMENT (PMD), ISLAMABAD

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|---------------------------|-----------------|
| 14. Mr. Jan Muhammad Khan | Deputy Director |
|---------------------------|-----------------|

DISTRICT CO-ORDINATION OFFICE - RAWALPINDI

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| 15. Mr. Khalid Yamin | Assistant District Officer (Revenue) |
|----------------------|--------------------------------------|

RAWALPINDI CANTONMENT BOARD (RCB)

- | | |
|---------------------------------|------------------|
| 16. Col. (R) H. A. Rehman Malik | Project Director |
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< JAPANESE SIDE >

JICA ADVISORY COMMITTEE

17. Mr. Miyagawa Yuji

Chairman of the JICA Advisory Committee

JICA HEADQUARTERS

18. Mr. Taniguchi Kotaro

Staff in charge of Study Management

JICA PAKISTAN OFFICE

19. Mr. Takahashi Makoto

Deputy Resident Representative

JICA STUDY TEAM

20. Mr. Matsumoto Yoshiharu

Team Leader

21. Mr. Otagawa Makihiko

Deputy Team Leader

22. Mr. Mishina Takahiro

Structural Engineer

23. Mr. Noda Norihiro

Specialist for Social/Environmental Affairs

Handwritten marks: a vertical line with a circle at the bottom, a stylized signature, and the letter 'm'.