

No.

MINISTRY OF WATER
AND IRRIGATION (MWI)

WATER RESOURCES
MANAGEMENT AUTHORITY (WRMA)

JAPAN INTERNATIONAL
COOPERATION AGENCY (JICA)

**THE STUDY
ON
INTEGRATED FLOOD MANAGEMENT
FOR
NYANDO RIVER BASIN
IN
THE REPUBLIC OF KENYA**



**FINAL REPORT
VOLUME III: SUPPORTING REPORT**

MARCH 2009

**Nippon Koei Co., Ltd.
IDEA Consultants Inc.**

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09-039

LIST OF REPORTS

The output of the Study was submitted to Ministry of Water and Irrigation (MWI) and Water Resources Management Authority (WRMA), the counterpart agencies of the Government of Kenya for the Study. The report is organised into (i) one volume of the Summary, (ii) one volume of the Main Report, (iii) one volume of the Supporting Report, (iv) one volume of the Data Book. This volume is the Supporting Report. The complete set of the reports is listed below.

Volume I : Summary

Volume II : Main Report

Volume III : Supporting Report

Volume IV : Data Book

CURRENCY EQUIVALENTS (AS OF JUNE 2007)

1 US\$ = 66.77 Kenyan Shilling (TTB) = 121.59 Japanese Yen (TTB)

KENYAN FINANCAL YEAR

July 1 to June 30

**THE STUDY
ON
INTEGRATED FLOOD MANAGEMENT FOR NYANDO RIVER BASIN**

FINAL REPORT

VOLUME III

SUPPORTING REPORT

Annex-1: Minutes of Meeting for the Steering Committees

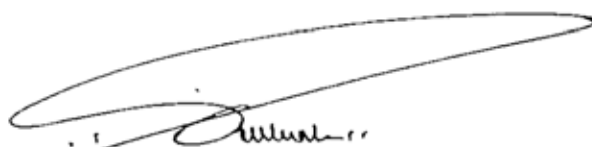
Annex-2: Guide for Community-Driven Flood Management

- (1) How to conduct Community Flood Hazard Mapping
- (2) How to establish Community Flood Management Organization (CFMO)
- (3) How to develop Community Flood Management Manual
- (4) How to design Community-Driven Structural Measure
- (5) How to conduct Operation and Maintenance of Community-Driven Structural Measures
- (6) How to execute Community-Driven Evacuation Drill
- (7) How to conduct Disaster Management Education
- (8) How to prepare and update Flood Disaster Mapping
- (9) How to utilise Geographic Information System (GIS)

ANNEX-1
MINUTES OF MEETING
FOR THE STEERING COMMITTEES

Minutes of Meeting
on
Inception Report
for
The Study on Integrated Flood Management
for Nyando River Basin
in
the Republic of Kenya

Nairobi, 7 August 2006



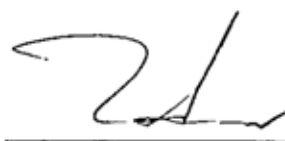
Amb. John W.K. Mukuriah, M.B.S
For: Permanent Secretary,
Ministry of Water and Irrigation



Mr. Mikio Ishiwatari
Leader of the Advisory Team
Japan International Cooperation Agency

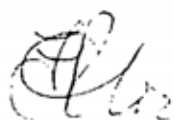


Mr. Patrick O. Oloo
Chief Executive Officer,
Water Resources Management Authority



Mr. Yoshikimi Inoue
Team Leader
JICA Study Team

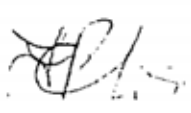
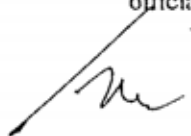
1. In accordance with the Scope of the Work for the Study on Integrated Flood Management for Nyando River Basin (hereinafter referred to as "the Study") signed between the Ministry of Water and Irrigation (hereinafter referred to as "MWI"), the Water Resources Management Authority (hereinafter referred to as "WRMA") and Japan International Cooperation Agency (hereinafter referred to as "JICA"), the JICA Study team prepared the Draft Inception Report (hereinafter referred to as "DIR"). The JICA Study Team submitted twenty (20) copies of DIR on 26 July 2006 to MWI and WRMA.
2. A Steering Committee Meeting on DIR was held on 2 August 2006. After the chairman of the committee and the Team Leader of the JICA advisory team made opening remarks, the Team Leader of the JICA Study Team explained the outline and approach of the Study. Thereafter, a series of discussions were held by the participants. As a result of the discussions, DIR was, in principal, accepted by the committee. The main points discussed and agreed by both sides are as follows:
 - i) Implementation schedule as contained in DIR was revised as attached hereto to realize outcomes of the study as early as possible. The schedule may be revised in the study period, depending on the community consultation results and physical conditions.
 - ii) The improvement of drainage network in low-lying areas is required to mitigate floods in addition to the rehabilitation and construction of the dike.
 - iii) The possibility of utilisation of excess water will be examined in the Study.
 - iv) Several studies on water resources development including the master plan by Italconsult (1983), the national water master plan by JICA (1992), strategy for flood management for Lake Victoria Basin (2004) etc. were conducted. Those results will be fully utilised for Study works.
 - v) There are various stakeholders related to the flood management. In addition to the involvement of those stakeholders into the Study, the coordination amongst stakeholders will be enhanced.
 - vi) The Study Team will have two offices; one in Nairobi (Maji house) and the other in Kisumu. The WRMA regional office will dispatch two counterparts for the study on full time basis at Kisumu office.



3. The Project Working Group (PWG) discussed DIR with the JICA Advisory Team and the Study Team on 2 August 2006. The main points discussed and agreed by both sides are as follows:
 - i) Meetings with PWG will be held on ad-hoc basis in Nairobi and bi-weekly meetings with WRMA regional office will be held in Kisumu. In addition, meetings with the PWG at site will be considered.
 - ii) DIR was accepted by the PWG. Further comments on DIR will be submitted by the PWG to the JICA Study Team before 16th August 2006, and be incorporated into the Progress Report (No.1).

4. The national workshop on the integrated flood management for the Nyando River Basin was jointly organized by MWI, JICA and World Meteorological Organization on 3 August 2006. Assistant Minister for Water and Irrigation, the officers of concerned organizations, and officers of development partners participated in the workshop. Integrated approach in the flood management, community participation, and coordination between concerned organizations, which are main study concepts, were widely accepted by the participants. The recommendations raised in the workshop will be attached in the Progress Report (No.1).

5. During the field survey of 4-6 August 2006, it was confirmed that the WRMA regional office was preparing establishment of a forum for Nyando river basin water management. The first official meeting for the forum is scheduled to be held on 18 August 2006.



ATTACHMENT: IMPLEMENTATION SCHEDULE

WORK DESCRIPTION	2006			2007			2008									
	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
PHASE I																
A. MASTER PLAN																
A.1 Review of Master Plan																
A.2 Formulation of Master Plan																
A.3 Screening of Priority Schemes																
A.4 Preliminary Design of Priority Schemes																
A.5 Preparation of Implementation Plan for Priority Schemes																
A.6 Selection of Pilot Projects																
PHASE II																
B. COMMUNITY PARTICIPATION																
B.1 Consultation with Communities																
B.2 Establishment of People's Association																
B.3 Preparation of Proposal to be Made with Community																
B.4 Preparation of Procurement																
C. PILOT PROJECTS																
C.1 Pilot Project A																
C.2 Pilot Project B																
C.3 Pilot Project C																
C.4 Pilot Project D																
C.5 Pilot Project E																

Remarks: This is a tentative schedule. The schedule is subject to community consultations and physical conditions as well as EIA process to be made by GOK.

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Appendix I: List of Participants

1. Kenyan Side

Steering Committee

- | | |
|-----------------------------------|--|
| 1) Eng. Mahboub M. Maalim, C.B.S, | Permanent Secretary (Chairman),
Ministry of Water and Irrigation |
| 2) Mrs. Rachel Arungah, C.B.S, | Permanent Secretary, Office of President |
| 3) Mr. C.N. Irungu, | Director of Water Resource,
Ministry of Water and Irrigation |
| 4) Ms. Dorothy N.A.O. Kimeu, | Representative Permanent Secretary,
Ministry of Finance |
| 5) Mr. Michael W. Ojiambo, | Representative Permanent Secretary,
Regional Development Authority |
| 6) Mr. Geoffrey O. Wekesa, | Representative Managing Director,
Lake Basin Development Authority |
| 7) Mr. Patrick O. Oloo, | Chief Executive Officer (Secretary),
Water Resources Management Authority |
| 8) Eng. P. Mangiti, | Representative Director of Water,
Ministry of Water and Irrigation |
| 9) Mr. P. Munah, | Representative Director,
Kenyan Meteorological Department |

Project Working Group

- | | |
|------------------------|---|
| 1) Eng. P.K. Njurumba, | Water Resources Management Authority |
| 2) Mr. J. R. Nyaoro, | Deputy Director of Water Resources,
Ministry of Water and Irrigation |
| 3) Eng. T. O. Ogalo, | Ministry of Water and Irrigation |
| 4) Mr. E.M. Mnyamwezi, | Catchment Manager,
Water Resources Management Authority |
| 5) Eng. Simon Mbugua, | National Water Conservation and Pipeline
Cooperation |

Ministry of Water and Irrigation

- | | |
|---------------------|--|
| 1) Mr. I.G. Kimani, | Japan Desk, Ministry of Water and Irrigation |
| 2) Eng. C. Gitahi, | Japan Desk, Ministry of Water and Irrigation |

ANNEX-1

2. Japanese Side

JICA Advisory Team

- | | |
|--------------------------|---|
| 1) Mr. Mikio Ishiwatari, | Leader,
Japan International Cooperation Agency |
| 2) Mr. Takeshi Saheki, | Member,
Japan International Cooperation Agency |

JICA Kenya Office

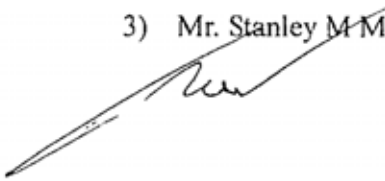
- | | |
|-------------------------|--|
| 1) Ms. Chie Esaki, | Assistant Resident Representative,
Japan International Cooperation Agency |
| 2) Mr. John Ngugi, | Senior Program Officer,
Japan International Cooperation Agency |
| 3) Mr. Humphrey Mwathe, | Consultant,
Japan International Cooperation Agency |

JICA Study Team,

- | | |
|-------------------------|---|
| 1) Mr. Yoshikimi Inoue, | Team Leader/Flood Management Plan |
| 2) Mr. Tetsunari Gejo, | Co-Team Leader/Community-based Disaster
Management |
| 3) Mr. Takayuki Nobe, | Expert for River Plan/River Structure |
| 4) Mr. Yuki Ishikawa, | Institutional Expert/Coordinator |

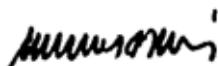
3. World Metrological Organization (WMO)

- | | |
|----------------------------|---|
| 1) Mr. Mohamed M. Tawfik, | Chief, Hydrology Division,
World Metrological Organization |
| 2) Mr. Hisaya Sawano, | Professional Officer, TSU,
World Metrological Organization |
| 3) Mr. Stanley M Mbagathi, | Consultant, GS Consultant |



Minutes of Meeting
on
Progress Report No.1
for
The Study on Integrated Flood Management
for Nyando River Basin
in
the Republic of Kenya

Nairobi, 5 December 2006



Eng. Mahboub M. Maalim, C.B.S,
Permanent Secretary,
Ministry of Water and Irrigation

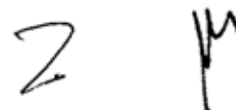


Mr. Yoshikimi Inoue
Team Leader
JICA Study Team



Mr. Patrick O. Oloo
Chief Executive Officer,
Water Resources Management Authority

1. In accordance with the Scope of the Work for the Study on Integrated Flood Management for Nyando River Basin (hereinafter referred to as "the Study") signed between the Ministry of Water and Irrigation (hereinafter referred to as "MWI"), the Water Resources Management Authority (hereinafter referred to as "WRMA") and Japan International Cooperation Agency (hereinafter referred to as "JICA"), the JICA Study team prepared the Progress Report No.1 (hereinafter referred to as "PR1"). The JICA Study Team submitted forty (40) copies of PR1 on 28 November 2006 to MWI and WRMA.
2. A Steering Committee Meeting on PR1 was held on 4 December 2006. After the chairman of the committee made opening remarks, the Team Leader of the JICA Study Team explained the outline of progress including Draft Master Plan. Thereafter, a series of discussions were held by the participants. As a result of the discussions, PR1 was accepted by the committee. The main points discussed and agreed by both sides are as follows:
 - i) Permanent Secretary of MWI (hereinafter referred to as "PS") pointed out the possibility of financial assistance for the schemes proposed in the Draft Master Plan. PS asked the Study Team whether JICA or Japanese Government can assist in funding of some of the schemes. JICA Study Team answered that the question will be conveyed to JICA Tokyo.
 - ii) Early Warning System to be prepared by Western Kenya Community Driven Development and Flood Management Project (WKCDD+FM) will be examined and considered in this Study.
 - iii) It is reported that various comments were raised by local authority and communities in the workshop on catchment management at Kisumu. Those comments were considered in the study results.
 - iv) In order to raise feeder roads as evacuation routes, authorities at the district level should take initiatives for the actual implementation.
 - v) The Study should pay attention to the existing intakes for irrigation, since those intakes should be maintained in case of development or formulation of structure measures. JICA Study Team will consider the existence of these intakes during the Initial Environmental Examination (IEE) process.



3. The Project Working Group (PWG) also discussed PR1 with the Study Team on 4 December 2006. The main points discussed and agreed by both sides are as follows:
- i) One of structural measures proposed in PR1 is the raising of national road including reconstruction of bridges and culverts. These works would be done under the management of the Ministry of Public Works (MoPW). The close coordination between MWI and MoPW is inevitable for expediting the implementation as short-term measures.
 - ii) Raising of feeder roads in flood prone areas will be necessary in addition to the raising of community roads proposed in PR1.
 - iii) Watershed management is one of important issues in the Nyando river basin, especially in the upper catchment. More detailed information for watershed management should be included in the Master Plan.
 - iv) Roof catchment is proposed for the supply of safety drinking water to the dislocated families in the evacuation centres, since the groundwater is contaminated during flood inundation period. Piped water supply from the springs of Kibos river basin might be one of alternate water sources.
 - v) The members of PWG should visit the site to familiarise with the situation of flood prone area. For this reason, some of PWG meetings will be held in the Study Area.



Appendix I: List of Participants

1. Kenyan Side

Steering Committee

- | | |
|-----------------------------------|--|
| 1) Eng. Mahboub M. Maalim, C.B.S, | Permanent Secretary (Chairman),
Ministry of Water and Irrigation |
| 2) Mr. Samson Kome | Hydrological Superintendent, Office of
President |
| 3) Mr. C.N. Irungu, | Director of Water Resource,
Ministry of Water and Irrigation |
| 4) Mr. Patrick O. Oloo, | Chief Executive Officer (Secretary),
Water Resources Management Authority |
| 5) Mr. James A. Arem | Chairman, National Irrigation Board |
| 6) B.J. Leparmarai | Rep. Permanent Secretary, Ministry of
Environment and Natural Resources |

Project Working Group

- | | |
|-------------------------|---|
| 1) Mr. Patrick O. Oloo, | Chief Executive Officer (Chairman),
Water Resources Management Authority |
| 2) Mr. J. R. Nyaoro, | Deputy Director of Water Resources,
Ministry of Water and Irrigation |
| 3) Eng. T. O. Ogalo, | Ministry of Water and Irrigation |

Ministry of Water and Irrigation

- | | |
|--------------------|--|
| 1) Mr. I.G Kimani, | Japan Desk, Ministry of Water and Irrigation |
|--------------------|--|

Water Resources Management Authority

- | | |
|----------------------|--|
| 1) Mr. S.P Kiai | Technical Manager, Water Resources
Management Authority |
| 2) Mr. Patrick Khisa | Flood Management Officer, LVSC-WRMA |
| 3) Mr. Willis Memo | Community Liaison Officer, LVSC-WRMA |



2. Japanese Side

JICA Kenya Office

1) Mr. Humphrey Mwathe,

Consultant,
Japan International Cooperation Agency

JICA Study Team

1) Mr. Yoshikimi Inoue,

Team Leader/Flood Management Plan

2) Mr. Tetsunari Gejo,

Co-Team Leader/Community-based Disaster
Management

3) Mr. Takayuki Nobe,

Expert for River Plan/River Structure

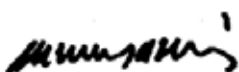
4) Mr. Yuki Ishikawa,

Institutional Expert/Coordinator

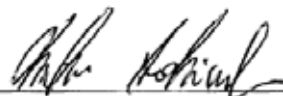


Minutes of Meeting
for
The Study on Integrated Flood Management
for Nyando River Basin
in
the Republic of Kenya

Nairobi, 2nd July 2007



Eng. Mahboub M. Maalim, C.B.S,
Permanent Secretary
Ministry of Water and Irrigation



Mr. Mikio Ishiwatari
Leader of Advisory Team
Japan International Cooperation Agency



Mr. Patrick O. Oloo
Chief Executive Officer
Water Resources Management Authority



Mr. Yoshikimi Inoue
Team Leader
JICA Study Team

1. In accordance with the Scope of the Work for the Study on Integrated Flood Management for Nyando River Basin (hereinafter referred to as “the Study”) signed between the Ministry of Water and Irrigation (hereinafter referred to as “MWI”), the Water Resources Management Authority (hereinafter referred to as “WRMA”) and Japan International Cooperation Agency (hereinafter referred to as “JICA”), the JICA Study team prepared the Interim Report (hereinafter referred to as “IT/R”) (Draft). The JICA Study Team submitted twenty (20) copies of IT/R (Draft) on 26 June 2007 to MWI and WRMA.
2. The project working group discussed on IT/R (Draft) on 26 June 2007. Main points discussed and agreed by participants are as follows:
 - i) The master plan will include the component of community driven flood management, which is the main pillar of the study concept, with the cost required.
 - ii) The status of the master plan of IT/R (Draft) is presumed as the final configurations of structural, non-structural and community-driven flood management measures. The master plan will be revised in the final report to be submitted in August 2008 after compiling lessons learnt from pilot projects.
 - iii) WRMA Lake Victoria South Catchment regional office should be the member of disaster management committee at provincial and district levels to take initiative of the integrated flood management in the Nyando river basin.
 - iv) The short, medium and long term targets as shown in Table 5.9.1 of IT/R (Draft) should be clarified.
 - v) Ministry of Roads and Public Works will be invited as the member of the steering committee to discuss on road improvement proposed in IT/R (Draft).
3. Nyando river basin water management forum was held on 29 June 2007. Main points discussed and agreed by the participants were as follows:
 - i) The outline of IT/R (Draft) was accepted by the forum.
 - ii) The forum plays an important role as a platform for discussing river management issues, therefore its members will be encouraged to join relevant, existing and new Water Resource Users Associations in the Nyando river basin.
 - iii) Sustainability of pilot projects and replication from the experiences are very important. WRMA will encourage the community driven flood management organizations established in the pilot projects to be the member of Water Resource Users Associations.



4. IT/R (Draft) was accepted by the steering committee chaired by the permanent secretary of MWI on 2 July 2006. The main points discussed and agreed by the participants are as follows:
- i) Discussion held at the project working group and Nyando river basin water management forum were confirmed.
 - ii) To take over activities of the study team, WRMA should establish a flood management unit consisting of two personnel at the Lake Victoria South Catchment regional office. In addition to the current full-time counterpart, another full-time counterpart with engineering background, should be attached to the Study Team. WRMA will notify the plan of this staff assignment to JICA before 31 July 2007.
 - iii) IT/R (Draft) will be finalised before 31 July 2007 taking comments raised by the committee into consideration.
 - iv) WRMA will encourage and facilitate the formation of umbrella WRUA for the Nyando river basin to implement the recommendations of the master plan
 - v) WRMA will take necessary actions that WRMA Lake Victoria South Catchment regional office will become the member of disaster management committee at provincial and district levels. Joint disaster management committee meeting will be held by 31 July 2007.
 - vi) WRMA will prepare, in collaboration with JICA, the road map which specifies necessary actions taken by the concerned organisations before 31 December 2007.
 - vii) Progress Report No. 2 will be submitted in March 2008 to include mid-term evaluation result of pilot projects.
 - viii) WRMA will encourage and facilitate WRUAs to put up water pans in Nyando river basin.
 - ix) WRMA will facilitate clearing Odesso drainage channel.



1. Kenyan Side

Steering Committee

- 1) Eng. Mahboub M. Maalim, C.B.S, Permanent Secretary (Chairman),
Ministry of Water and Irrigation
- 2) Mr. Ibrahim Maalim Special Programme, Office of President
- 3) Mr. Patrick O. Oloo, Chief Executive Officer (Secretary),
Water Resources Management Authority
- 4) Eng. Joseph K. Muchemi Managing Director, National Water
Conservation and Pipeline Cooperation
- 5) Anthony Juna Rep. Permanent Secretary, Ministry of
Environment and Natural Resources
- 6) M.K. Kanagi Rep. Permanent Secretary, Ministry of
Finance

Project Working Group

- 1) Mr. Patrick O. Oloo, Chief Executive Officer (Chairman),
Water Resources Management Authority
- 2) Eng. T. O. Ogalo, Ministry of Water and Irrigation
- 3) Eng. P. K. Kanyora, Senior Engineer, National Water
Conservation and Pipeline Cooperation

Ministry of Water and Irrigation

- 1) Eng. R. Gakubia, Director of Water Service, Ministry of Water
and Irrigation
- 2) Mr. Fred Mwangi, SDD, Groundwater Department, Ministry of
Water and Irrigation
- 3) Mr. P.O. Mangiti Deputy Director of Donor Coordination,
Ministry of Water and Irrigation
- 4) Mr. I.G. Kimani, Japan Desk, Ministry of Water and Irrigation

Water Resources Management Authority

- 1) Eng. J.M. Kinyua Operations Manager, Water Resources
Management Authority
- 2) Dr. M. Abira Regional Manager, LVSC- Water Resources
Management Authority
- 3) Mr. Willis Memo Community Liaison Officer, LVSC- Water
Resources Management Authority



Japanese Side

JICA Advisory Team

- 1) Mr. Mikio Ishiwatari,
- 2) Mr. Takeshi Saheki,

Leader,
Japan International Cooperation Agency
Member,
Japan International Cooperation Agency

JICA Kenya Office

- 1) Ms. Chie Ezaki,
- 2) Mr. John Ngugi,
- 3) Mr. Humphery Mwathe,

Assistant Resident Representative,
Japan International Cooperation Agency
Senior Programme Officer,
Japan International Cooperation Agency
Consultant,
Japan International Cooperation Agency

JICA Study Team.

- 1) Mr. Yoshikimi Inoue,
- 2) Mr. Tetsunari Gejo,
- 3) Mr. Yuki Ishikawa,

Team Leader/Flood Management Plan
Co-Team Leader/Community-based Disaster
Management
Institutional Expert/Coordinator



Appendix II: List of Participants for Nyando River Basin Water Management

Forum

- | | |
|---------------------|--|
| 1) Francis Mutuku | Env. Manager, AGROCHEMICAL |
| 2) Francis Wadegu | FEP. Facilitator, World Vision |
| 3) Gideon Miyigo | Hydrologist, LVEMP |
| 4) Chirchir J.K. | Task Coordinator, LVEMP |
| 5) Agunda Joseph | Field Officer, CARE |
| 6) Lucas Awino | Chairman, R. NYANDO WRUA |
| 7) Patrick Meya | D.Coordinator, WRMA |
| 8) Geoffrey Wekesa | Hydrologist, LBDA |
| 9) L.K. Kiplagat | P.I.O., MWI |
| 10) Willis Memo | CMO/SRO, WRMA |
| 11) William Okello | CAAC Chairman, WRMA |
| 12) Joseph Kimani | Organising Secretary, Ainapngetunyi River WRUA |
| 13. Rose Asamba | Accounts, SANA Int. |
| 14. Gordon Kojo | Zonal Coordinator, IDCCS Ltd. |
| 15. John Mumbo | Deo Nyando, NEMA |
| 16. John Chirchir | Chairman, Kipkwes WRUA |
| 17. Peter m. Mwangi | D.O. Nyando, Prov. Admin. |
| 18. Evans Agola | Chairman, Awach Kano WRUA. |
| 19. Dan Ongor | Coordinator, UHAI Lake F. |
| 20. Joyce a. Olando | Treasurer, Ombeyi KWE W/G |
| 21. Margaret Abira | Regional Manager, WRMA |
| 22. Eng.J.M. Kinyua | Operations Manager, WRMA HQS. |
| 23. Dorcas Ojwang | Chairlady, Kano Plains WRUA. |
| 24. Joseph Ngome | Coordinator, HEMNET. |
| 25. Athumani M. | S. DRIVR, WRMA |
| 26. J.B. Okeyo | Chairman, Forum |
| 27. Odoyo Justus A. | Secretary, R.Nyando WRUA |
| 28. Adhiambo Lomo | Chairman, Okana Mbega |
| 29. Dan Asaka | Coordinator, Red Cross |
| 30. Nick Omondi | Env. Edc. Officer, OSIENALA |
| 31. Reuben Dienya | WCO, WRMA |
| 32. Leah Onyango | Lecturer, Maseno Univ. |
| 33. David Dulo | Project Coordinator, VIRED Int. |
| 34. Owalla Chris | Coordinator, Nyanza Youth |
| 35. Vincent Orayo | Secretary, Kano Plain WRUA |
| 36. Dorcas A. Kosse | Field Officer, CSO Network for W. Kenya. |

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AM

Minutes of Meeting
on
Progress Report No.2
for
The Study on Integrated Flood Management
for Nyando River Basin
in
the Republic of Kenya

Nairobi, 19th September 2008



Eng. David Stower, C.B.S,
Permanent Secretary,
Ministry of Water and Irrigation



Mr. Yoshikimi Inoue
Team Leader
JICA Study Team

1. In accordance with the Scope of the Work for the Study on Integrated Flood Management for Nyando River Basin (hereinafter referred to as “the Study”) signed between the Ministry of Water and Irrigation (hereinafter referred to as “MWI”), the Water Resources Management Authority (hereinafter referred to as “WRMA”) and Japan International Cooperation Agency (hereinafter referred to as “JICA”), the JICA Study team prepared the Progress Report No.2 (hereinafter referred to as “PR2”). The JICA Study Team submitted forty (40) copies of PR2 on 6th August 2008 to MWI and WRMA.
2. A Steering Committee Meeting on PR2 was held on 16th September 2008. After the chairman of the committee made opening remarks, the Team Leader of the JICA Study Team explained the outline of progress including Master Plan, Priority Schemes and Pilot Projects. Thereafter, a series of discussions were held by the participants. As a result of the discussions, the progress of the Study was appreciated and PR2 was accepted by the committee.
3. The main points discussed and agreed by both sides are as follows:
 - i) It was suggested that assessment of soil condition will be required, since eroded sediment triggered in upper catchment will deposit in lower catchment and decrease river flow capacity. Besides, the encroachment of agricultural activities into forest areas in upper catchment was perceived as one of the most seriously concerned issues. It was also pointed that sediment due to gully erosion causes the decrease of river flow capacity in flood prone area. It is the largest problem in lower Nyakachi. The Study Team responded that the satellite images indicated that forest areas in the upper catchment increased gradually. Therefore, soil erosion in middle catchment is getting more serious and it was accordingly proposed in the Master Plan that the sediment traps in place in middle catchment.
 - ii) It was also suggested that dyke with specific tree planting shall be considered since tree planting will contribute to increase dyke stability.
 - iii) The Western Kenya Community-driven Development and Flood Mitigation Project under the Office of President explained their activities, and more information sharing with JICA Study was recommended. NWCPC also considers more integration to the Study, since NWCPC is constructing dyke along the Nyando River.
 - iv) The importance of flood forecasting system was emphasized. The Study Team responded that only one automatic logger at river gauging station is operational in the Nyando river basin. Prior to the establishment of flood forecasting system, hydrological monitoring network should be provided by installing automatic loggers at river gauging stations and automatic recorders at rainfall stations, which were proposed in the PR2.
 - v) The Study Team recommended that the Ministry of Public Works shall be involved in the Steering Committee, since such involvement was proposed in the previous meetings in the Steering Committee and Project Working Group. In addition, roads rehabilitation and road raising proposed as Priority Scheme are very effective measures for ensuring evacuation



activities during flood by the local people. It was agreed that a copy of PR2 and handout of the Study will be given to the ministry for future involvement.

- vi) It was suggested that the committee member would visit the sites around Nyando River for better understanding of the Study and regional conditions. It was commented that the Stakeholders Workshop in Kisumu scheduled in December 2008 could be an opportunity for the site visit.



Appendix I: List of Participants

1. Kenyan Side

Steering Committee

- | | |
|---------------------------|---|
| 1) Eng. John. R. Nyaoro, | Director of Water Resources, chaired on behalf of Permanent Secretary (Chairman),
Ministry of Water and Irrigation |
| 2) Eng. Macharia Waithaka | Rep. Chief Executive Officer, Water Resources Management Authority |
| 3) Mr. Johnson Maina | Meteorologist, Rep. Director, Kenya Meteorological Department |
| 4) Mr. Joseph N. Gichimu, | Economist, Rep. Permanent Secretary, Ministry of Regional Development Authorities |
| 5) Mr. Onderi N. Ontweka | Rep. Permanent Secretary, Ministry of Finance |
| 6) Eng. Samuel Wambua | Project Engineer, WKCDD/FM Project, Rep. Permanent Secretary, Ministry of State for Special Programmes |
| 7) Mr. Engen Mwandoe | Project Hydrologist, WKCDD/FM Project, Ministry of State for Special Programmes |
| 8) Mr. Inganga S. Francis | Chief of Environmental Research, Rep. Director General, National Environment Management Authority |
| 9) Mr. James Kamula | Marine Officer, National Environment Management Authority |
| 10) Mr. Isaac G. Kimani | Head / Asia & Pacific, Ministry of Water and Irrigation |
| 11) Mr. M M. Saboke | Managing Director, National Water Conservation and Pipeline Corporation |
| 12) Mr. Samson Njulica | Kenya Forest Service, Rep. Permanent Secretary, Ministry of Forest and Wildlife |
| 13) Mr. John Wanyiri | Rep. Permanent Secretary, Ministry of Environment and Mineral Resources |



2. Japanese Side

JICA Kenya Office

- 1) Mr. Yoichi Inoue
- 2) Mr. John N. Ngugi
- 3) Mr. Sebastian Odanga

Resident Representative,
JICA Kenya Office
Senior Programme Officer, JICA Kenya Office
Consultant, JICA Kenya Office

JICA Study Team

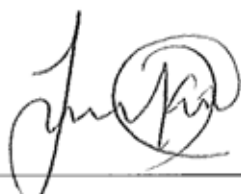
- 1) Mr. Yoshikimi Inoue
- 2) Mr. Tetsunari Gejo
- 3) Mr. Yuki Ishikawa

Team Leader/Flood Management Plan
Co-Team Leader/Community-based Disaster
Management
Institutional Expert



Minutes of Meeting
On Draft Final Report for
The Study on Integrated Flood Management
for Nyando River Basin
in
the Republic of Kenya

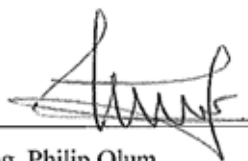
Kisumu, 11 December 2008



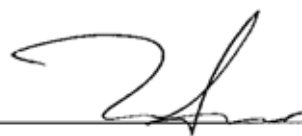
Eng. David Stower,
Permanent Secretary
Ministry of Water and Irrigation



Mr. Mikio Ishiwatari
Leader of Advisory Team
Japan International Cooperation Agency



Eng. Philip Olum
Chief Executive Officer
Water Resources Management Authority



Mr. Yoshikimi Inoue
Team Leader
JICA Study Team

1. In accordance with the Scope of the Work for the Study on Integrated Flood Management for Nyando River Basin (hereinafter referred to as “the Study”) signed between the Ministry of Water and Irrigation (hereinafter referred to as “MWI”), the Water Resources Management Authority (hereinafter referred to as “WRMA”) and Japan International Cooperation Agency (hereinafter referred to as “JICA”), the JICA Study Team prepared the Draft Final Report (hereinafter referred to as “DF/R”). The JICA Study Team submitted forty (40) copies of DF/R on 8 December 2008 to MWI and WRMA.
2. A steering committee meeting on DF/R chaired by the permanent secretary of MWI was held on 8 December 2008. DF/R was basically accepted by the committee. The main points discussed and agreed by participants are as follows:
 - i) The comments, if any on the DF/R will be forwarded from WRMA to JICA Kenya Office by 10 January 2009.
 - ii) Three schemes are proposed for realising the Master Plan, namely 1) Implementation Plan for Yen loan, 2) JICA technical cooperation for capacity development in nationwide flood management, and 3) JICA program grant aid for environment and climate change. Of the three schemes, the program grant aid is now already under outline design stage for implementation.
 - iii) WRMA will establish a flood management and climate change adaptation unit to spread out the practices of the Study throughout the country and to promote adaptation measures.
 - iv) The established Nyando River Water Management Forum should be sustained after completion of the Study. The forum should become an umbrella body for Water Resources Users Associations (WRUAs). WRMA will support the forum to sustain activities after the Study.
 - v) WRMA Lake Victoria South Catchment regional office became the member of disaster management committee at provincial and district levels. WRMA will be expected to contribute in preventive measures such as flood forecasting and early warning.
 - vi) Further financial support by Water Services Trust Fund to communities in Nyando river basin should be considered. WRMA will coordinate continuous support to the communities through WRUAs.
3. Workshop on the Study was held on 11 December 2008. MWI, WRMA, the forum members, pilot communities, and others participated in the workshop. The Master Plan and other contents of DF/R was accepted by the participants.



Appendix I: List of Participants**1. Kenyan Side**

- | | |
|----------------------|--|
| 1) Eng. David Stower | Permanent Secretary (Chairman),
Ministry of Water and Irrigation |
| 2) Eng. John Nyaoro | Director of Water Resources, Ministry of
Water and Irrigation |
| 3) Eng. R.K. Gaita | Director of Irrigation, Ministry of Water and
Irrigation |
| 4) Eng. Philip Olum | Chief Executive Officer (Secretary),
Water Resources Management Authority |
| 5) Eng. J.M Kinyua | Operation Manager, Water Resources
Management Authority |
| 6) Mr. I.G. Kimani | Japan Desk Officer, Ministry of Water and
Irrigation |
| 7) Mr. K.W. Mwathi | Representative, Kenya Meteorological
Department |
| 8) Mr. J.K Wainaina | Representative, National Water Conservation
and Pipeline Corporation |

2. Japanese Side**JICA Advisory Team**

- | | |
|-------------------------|---|
| 1) Mr. Mikio Ishiwatari | Mission Leader,
Japan International Cooperation Agency |
| 2) Mr. Masatoshi Murao | Procurement Planning,
Japan International Cooperation System |
| 3) Mr. Shohei Matsuura | Cooperation Planning,
Japan International Cooperation Agency |

JICA Kenya Office

- | | |
|--------------------|---|
| 1) Mr. John Ngugi, | Senior Programme Officer,
Japan International Cooperation Agency |
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JICA Master Plan Study Team

- | | |
|-------------------------|---|
| 1) Mr. Yoshikimi Inoue, | Team Leader/Flood Management Plan |
| 2) Mr. Tetsunari Gejo, | Co-Team Leader/Community-based Disaster
Management |
| 3) Mr. Yuki Ishikawa, | Institutional Expert/Coordinator |

JICA Outline Design Study Team

- | | |
|----------------------|------------------|
| 1) Mr. Masaru Tokura | Chief Consultant |
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