Improving Land and Water Resources Management in the Komadugu Yobe River Basin – Northern Eastern Nigeria & South Eastern Niger

(Phase 1: Improving the Institutional Framework for Water Management in the Komadugu Yobe Basin)

FMWR-IUCN-NCF Komadugu Yobe Basin Project

MID-TERM PROJECT EVALUATION REPORT

By

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Abstract
The Komadugu Yobe Basin (KYB) Project is about the "improving land and water resources management in the KYB – northern Nigeria and south Niger" which is implementable in Phases. The first phase of two years and three months is on the improving the institutional framework for water management in the Basin. In which case the Project is to help in improving consultation mechanisms among main stakeholders (including regulators), facilitating their participation in the development of key principles for the management of water in the Basin. It is the policy of the World Conservation Union (IUCN) to internally and externally evaluate the performance of its projects within temporal scale with the objective of providing an important organizational learning tool, and to help build confidence in the way the Union works and in the way it is regarded by its member, partners and funding agencies. Partners for the Project include the Nigeria Conservation Foundation (NCF) and the Federal Ministry of Water Resources in Nigeria (FMWR); and have the endorsement of the Lake Chad Basin Commission. Funds for the implementation of the Phase are to be contributed by IUCN-WANI (USD 500,000), FMWR (USD 200,000) and other complementary sources (USD 608,368).

This is an external mid-term evaluation report on the first Phase covering period May 2005 – February 2006. It evaluates the project performance through answering the questions the Project's of relevance, efficiency, effectiveness, sustainability and impact. Through these, lessons learnt have identified, presented and discussed. These were achieved mainly through discussions with Project's staff, literature search and purposive visits and discussion with some stakeholders and/or project partners. Major findings of the exercise include

a. the non-availability and non-usability of basic meteorological data. Moreover, information of stream gauging is also not in useable form.
b. Due to the problem as in (a) above, there is presently the problem of improper water management system. However, some of the key stakeholders are beginning to take cure.
c. Cases of conflicts between and among stakeholders over shared resources are very eminent, most of which erupt due to inadequate information and incomprehensible land use legislation.
d. There is an invasive spread of typha grass which, by now, has not shown any potential economic or social value. Its presence is causing tremendous drop in the potentials of agricultural land in the basin. However, discussions at the stakeholder have helped in bringing some understanding and cases of conflicts are now dropping.
e. It has also been found that floods are caused significantly due to the presence of the typha grass, which also leads to lower water/river discharges in the natural river courses.

It is to these that the evaluation exercise concludes that the Project is relevant to the needs of the people and environment within the Basin. Considering the focus and the activities so far carried out and ones highlighted, the Project is as well effective. Moreover, resource use is truly cost effective, only that more funds are needed for the timely execution of some of the activities proposed. Although the Project is still at its infancy, it

is evident that the activities are having some positive impact as cases of conflicts are now significantly reducing. Moreover, water audit exercise is about to be concluded which will give scientific means by which water management will be devised. With these achievements through the participation of all, most of the stakeholders may come to imbibe the culture which of course will lead to the sustainability of the gains of the Project.

Lessons learnt so far indicates that participatory approach through stakeholder involvement is a viable vehicle for sustainable development as decision-making is made simplified and acceptable/implementable. Of course, there is the need for the Project to maintain the tempo and for the funds to be improved upon.

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List of Abbreviations and Acronyms

BRAO	Bureau Regional pour l'Afrique de l'Quest (Regional Office for West Africa)
DFID	Department for International Development (of the United Kingdom)
FMEnv	Federal Ministry of Environment
FMWR	Federal Ministry of Water Resources
GEF	Global Environment Facility
HJKYBCC	Hadejia-Jama'are-Komadugu Yobe Basin Coordinating Committee
H-JRBDA	Hadejia-Jama'are River Basin Development Authority
HNW	Hadejia-Nguru Wetlands
HVP	Hadejia Valley Project
IUCN	The World Conservation Union
JEWEL	Joint Wetlands Livelihoods
J-MWR	Jigawa State Ministry of Water Resources
K-MWR	Kano State Ministry of Water Resources
KRP1	Kano River Project (Phase 1)
K-WB	Kano State Water Board
KYB	Komadugu Yobe Basin
LCBC	Lake Chad Basin Commission
MoU	Memorandum of Understanding
NCF	Nigerian Conservation Foundation
PMU	Project Management Unit
PSC	Project Steering Committee
RBDA	River Basin Development Authorities
TAC	Technical Advisory Committee
ToR	Terms of Reference
UNDP	United Nations Development Programme
WANI	Water and Nature Initiative

1.0 Introduction

The Komadugu-Yobe Basin (KYB) with a combined catchment area of 84,138 Km^2 is one of Nigeria's principal surface and groundwater basins which offers considerable development potentials (Tanko, 1999). It drains in a north-easterly direction from the Jos Plateau and about 10 percent of the inflow discharges into the Lake Chad (Carter, 1992). Geographically, it is located approximately between latitude 10^oN and $13^o20'N$ and 7^o25E and 11^oE. The Hydrological boundaries of the Basin traverse the States of Kano, Jigawa, Bauchi, Yobe and to a lesser extent, Plateau and Borno.

The KYB is one of the Nigeria's most important agricultural basins and currently produces such food and cash crops including sorghum, rice, millet, groundnuts, wheat, cowpeas and vegetables under both upland and irrigated farming. The farming system in, especially the high population density zones of the basin including the Kano-Close-Settled Zone (KCSZ) is being described as very intensive use of the agricultural land. This involves the production of more food on land already under cultivation (Harris, 1996; Tanko, 1999). In addition to these, there are also the productions of livestock, trees which yield fruits, edible leaves silk cotton and firewood. Fishing is also an important activity of the people in the basin. Of course the system supports over 10 million people who live in the basin. Part of the basin is the Hadejia Nguru Wetlands which for many years were the pride and joy of the north-eastern part of Nigeria.

In the early 1970s, dams were constructed on the up-stream locations, mainly in Kano State. Two of these dams, i.e. the Tiga and Challawa Gorge Dams are classified as large-scales. For instance Tanko (1999) has given the features of the former Dam as follows:

a. catchment size, 6,641km^2,
b. total and active storage capacities, 1,968.0 Mm^3 1,845 Mm^3 respectively.
c. surface area of the reservoir, 7,200ha
d. Emergency spillway, 200m

Of course, when it was noticed that there was the drying out of the downstream environment, the spillway of the Dam was lowered by 3.5 in 1992 which affected the total storage in the reservoir to fall to 1,400M^3, a reduction of about 568 Mm^3. Even with these, the people at the downstream locations keep agitating for more water. This is as there has been a reduced wet season flood flow which has deprived much of the communities of their annual water needs. Indeed with potential and effective water demand of the Kano city water supply (now put at 400-700 M litres per day), the Kano River Irrigation Project (KRIP) which covers about 15,000ha and the Hadejia Valley Project (HVP) of about 12,500 ha, more than half of the estimated long term annual yield of the reservoirs are already consumed.

1.1 The Background to KYB

By whichever standard, it is obvious that the water resources of the basin are already stretched and, with the potentially large and increasing demands, these will need to be wisely apportioned among the competing users. Proper management of the water resources in the Basin becomes a major area of challenge and a source of concern. Of

course the May 2005 Version of the KYB Phase 1 Document (Appendix II) has enumerated and explained the "threats and challenges facing the Komadugu Yobe Basin". These included, fast-growing water demand, reduced river flow due to climate variability and change, fragmented regulatory responsibilities, uncoordinated development interventions etc. Thus, a joint initiative of the World Conservation Union (IUCN), Nigerian Conservation Foundation (NCF) and the Federal Ministry of Water Resources (FMWR) titled "Improving Land and Water Resources Management in the Komadugu Yobe Basin – Northern Nigeria" began in May 2005.

The Project has the objective of improving land and water management in the Komadugu-Yobe Basin. Secondly it also has the objective of improving the institutional framework for water management in the Basin. These are with the hope of catalyzing some policy and institutional change, leading to the development of agreed water management charter.

The Project which began with an initial phase of two years and three months (inclusive of its Inception Phase of three months) has the objective of improving the institutional framework for managing water resources in the KYB. This is being done through consensus on key water management principles and institutionalized consultations and coordination mechanisms. Thus, by the end of the Phase 1, it is expected that there is established a framework for broad-based and informed decision making process based on agreed principles for equitable use and sustainable management of the Komadugu-Yobe Basin.

For the achievement of this, the Project is to facilitate the participation of all stakeholder groups in the development of key principles for the management of the Basin. To achieve this, the Project is to facilitate a process to revitalize the basin-wide stakeholder forum. This forum is to be used to ensure that the various stakeholders, interest groups, water user groups and basin states take part in the discussions on water allocation and water sharing arrangements, and that their views and needs inform the overall decision-making process. However, as an important Basin, there were a number of institutions and interventions in the Basin that shared common interest, focus and objectives. These included:

a. The Hadejia-Jama'are River Basin Development Authority (H-JRBDA): This is a Nigerian Federal Government agency instituted in the 1970s which was revised by Decree No. 35 of 1987. It came through an idea of river basin planning and management within the bounds of separate river basins in Nigeria. Of course that became an important element in the planning of rural natural resources in the country. Thus the H-JRBDA is one of the eleven river basin authorities in the country with many functions, some of which are

- to undertake comprehensive development of both surface and ground water resources for multi-purpose use, with particular emphasis on the provision of irrigation infrastructure and control of flood and erosion, and for water management;

- to construct, operate and maintain dams, lakes and all irrigation and drainage systems for the achievement of the authority's functions and to hand over all lands to be cultivated on irrigation schemes to farmers;
- to supply water from completed storage schemes to all users for a fee
- to develop and keep up-to-date comprehensive water resources master plan, identifying all water resources requirements in the basin through adequate collection and collation of water resources, water use, socioeconomic and environmental data of the basin.

b. The Hadejia Nguru Wetlands Conservation Project:
This is an attempt to promote integrated and sustainable use of the extensive floodplains of the Hadejia and Jama'are rivers against pressures of upstream water abstraction, drought and demands for canalization downstream. The Project lasted for a long period of time, but it has folded up. Of course, the Consultant is made to understand that the success recorded has been the main reason why the DFID came up with the idea of intervention under the Joint Wetlands Livelihoods (JWL).

c. DFID-JWL: The aim of the DFID supported Joint Wetlands Livelihood (JWL) Project is to provide technical assistance to facilitate environmentally sustainable management of the Hadejia-Nguru wetland area (a registered Ramsar site since 2000), through a "bottom-up" participatory approach. The results of the recent participatory appraisal carried out by the project indicate that changing flood patterns are a significant concern amongst people in the area. Of specific concern is the trend over the last 15 years for water flows to be diverted into Nguru Lake, to the point of threatening the physical infrastructure of Nguru town. Associated with this issue is the reduction in flows along the Burum Gana channel which previously had supported high value dry season irrigated cropping, a major source of economic livelihood in the area.

d. Lake Chad Basin Commission (LCBC): For the implementation of the Global Environment Facility (GEF)-supported programme, a joint intervention of the LCBC, World Bank and UNDP came up with the "Reversal of Land and Water Degradation Trends in the Lake Chad Basin". One of the components of this programme is a pilot project on the integrated management of the KYB which centres on the Hadejia-Nguru Wetlands.

1.2 Achievements before KBY

Establishment of a Basin Coordination Committee: As a means of tackling the issues competing water demand between the upstream and downstream communities as well as that of conflicts between, especially, the pastoralists and the farmers groups, the Federal Government accepted the recommendation of a workshop jointly organised by the IUCN-Hadejia Nguru Wetlands Conservation Project (HNWCP) and the National Institute for Policy and Strategic Studies for a "Coordinating Council" to be formed. Thus, the Hadejia-Jama'are Komadugu Yobe Coordinating Committee (HJKYCC) was formed in

1999. The Committee, after its first meeting in November 2000 established its Technical Advisory Committee (TAC), which had its first meeting in April 2001.

Formation of a Stakeholder Forum: Through an initiative of the DFID-JEWEL Project, a Stakeholder Forum was formed. This began from 2001 when the first meeting was organised at Dutse. Subsequently, more meetings were held all of which were at the same location. However, following efforts towards the taking up of the KYP Project, UICN in partnership with the NCF initiated another meeting in January 2003. Following the success of the JEWEL Project (now JWL) the same (even though) expanded Stakeholder Forum was invited. The meeting came to be held between 06th and 07th January 2003 with the purposes of:

a. collectively reviewing the situation in the KYB
b. brainstorming on various components of sustainable land and water resources development and management strategies in the KYB
c. presenting and discussing a draft programme on sustainable development of the KYB, and
d. preparing a comprehensive and collectively acceptable arrangement for contribution and participation of all stakeholders in the programme.

For the meeting, participants[1] were drawn from:

- Federal Ministries of (Water Resources; Agriculture; and Rural Development)
- State Government Ministries in (Yobe, Borno, Jigawa, Kano and Bauchi)
- Federal Government Parastatals (H-JRBDA, CBDA)
- Universities (Maiduguri, Lagos and Bayero)
- NGOs (IUCN, NCF, LCBC)
- International Organisations (FAO; LCBC; DFID)
- Consultants (Afremedev; Hydroterra)
- Private Organisation (Guwori Petro-Allied Services Nigeria Ltd.)

1.3 Activity and Progress Against Deliverables from Inception

From inception to date, the KYB Project has carried out a number of major activities. These included:

a. Signing of Memorandum of Understanding (MoU) with key partner institutions including the DFID-JWL and LCBC/GEF. Moreover key project staff (including the Project Coordinator and Financial Administrator) were recruited. By May 2005, first year work plans were fully developed and project budget revised.

b. Formation of Project Management Structure and Linkages with Existing Structures: Within the Project Structure, a 5-member committee forms the Project Management Unit (PMU). These are the Project Director (from the FMWR, thus seconded to the Project on Part-time), Project Coordinator,

[1] List of Participants is Attached – Appendix 1

Project Financial Administrator and three technical staff (who are the legal/social science specialist, water resources expert and a database manager. Within the structure too, there is the Project Steering Committee (PSC)[2]. The Committee is responsible for monitoring project implementation and for ensuring that the Project proceeds in a timely and efficient manner. PSC has the power to approve changes (other than those affecting project budgets) in Project activities which might be recommended to it by the PMU. Where such changes can affect budgets, referrals are necessary to IUCN and the Project donors for approvals.

Within the Hadejia-Jama'are-Komadugu-Yobe Basin (H-JKYB), the Federal Government of Nigeria has already initiated a process that is aimed at improving coordination of water resource management through the formation of a Coordination Committee (H-JKYBCC). This Committee has its Technical Advisory Committee (TAC). KYB serves as the Secretariat of the TAC thus the Project Director as the Secretary of the TAC[3].

c. Take up and review of nature and quality of baseline information. This was carried out by a Consultant. The result of which gave rise to the immediate need for a comprehensive water audit exercise. For the exercise, although the financial quotations presented by different consulting firms were found to be above the budget provision, shallow aquifers were found to be a priority area of attention. Similarly the study was also limited to water quality analysis which was found of immense and immediate importance. Hitherto, studies on water quality were not given much significance.

d. Conduct of Environmental and Socioeconomic Situation Analysis: Although there were a number of problems, most of which had to do with public holidays declared by the Federal and/or State Government, consultants were selected and engaged to carry out the studies. The expected days for the submission of their reports were mid-January 2006. However, delays are being faced which might explained by financial and technical difficulties.

e. Identification of Stakeholder Forum: in an effort to establish a culture of participation in informed decision making a Stakeholder Forum has been identified. Prior the KYB, DFID-JWL Project had already formed one, the activities of which it had been funding. For this Project, KYB finds it convenient to adopt the Forum. Thus during the Project inception 62 personalities representing different institutions attended the workshop[4].

[2] Membership of the PSC includes: Representatives of Federal Ministry of Water Resources (FMWR) (who is appointed by the Minister and chairs the Committee), Nigerian Conservation Foundation (NCF), Federal Ministry of Environment (FMEnv), Federal Ministry of Agriculture (FMA), THE World Conservation Union (IUCN), Lake Chad Basin Commission (LCBC), Stakeholder Forum, Project Director, Project Coordinator (serving as the Secretary) and Representatives of the major donor(s).
[3] Appendix 2 is the Chart of Project Linkages with existing structures.
[4] Appendix 3 is the list of identified stakeholders during the project inception workshop (in April 2005).

Efforts are currently being made by the KYB to make the membership basin-wide relevant.

Table 1: Detailed Progresses Made for each Defined Activity

ACTIVITY	*PROGRESS AGAINST DELIVERABLES*
1.1.1. Initial consultant review of the nature and quality of the information base; due considerations given to groundwater within activity	• *ToR was developed in June 2005* • *An international consultant was contracted for 2 weeks in August 2005* • *Consultant visited 5 riparian States as well as visiting key partners outside the basin with the PMU* • *Spot checks on water quality had been carried out during the consultancy period* • *A draft report was produced on August 2005* • *Draft report was shared widely with Project partners (BRAO, FMWR & NCF) for comments* • *A final report was submitted on November 2005*
1.1.2. Conduct a comprehensive water audit (including projected water availability and demand)	• *A concise ToR was developed based on the pre-water audit report* • *A list of proposed consulting firms were presented for the PSC's approval* • *The consulting firms were invited to submit technical and financial proposals in November 2005* • *A consulting firm was engaged to carry out this activity from November 2005 to March 2006* • *Two counterpart staff from FMWR were seconded to work with the consulting firm for capacity-building and sustainability* • *Inception report was produced in December 2005 and assessed* • *An addendum to the inception report was produced in January 2006* • *The PMU carried out three-rounds of discharge measurements across the basin and few stage-boards were rectified*
1.1.3. Organize stakeholder meetings on the results of water audit and projected	• *To be done after receiving the draft report of the water audit (tentatively slated for March 2006)*

water demand	
1.1.4. Establish a database at Project office	• *Introductory letters and questionnaires were sent to various organizations across the basin* • *Several follow-ups were also carried out to all the ministries and stakeholders for data collection* • *Some available data in the Project office includes:* 1. *Substantial hydro-agricultural data and hydro-meteorological data with lots of gaps in-between* 2. *Scanty socio-economic and ecological data in some States* 3. *Hydro-geological data* 4. *Over 60 hard-copies of related literature of the basin* 5. *Over 50 electronic & grey reports of related literature of the basin* 6. *Previous consultancy works for the basin* • *The available data set in the Project office had been shared with the water audit consulting firm*
1.2.1. Conduct socio-economic situation analysis	• *A ToR was developed* • *Identification of potential consultants were presented for the PSC's approval* • *Invitation for proposals and submission of technical and financial quotations for selection from consultants were done in November 2005* • *A consultant was selected and engaged to carry out this activity from December 2005 to January 2006* • *Commencement of fieldwork was from the first week of December 2005 to mid-January 2006* • *Review of the progress of the fieldwork was done in the last week of December 2005. This is a mid-term assessment of fieldwork*
1.2.2. Conduct an analysis of the state of the environment	*Same as above*
1.2.3. Conduct study on the predictable impacts of water demand scenarios and planned interventions	• *There was a meeting between the PMU and the consulting firm to carry along stakeholders in this activity*

1.2.4. Stakeholder workshop on the study results	• *To be combined with Activity 1.1.3*
1.3.1. Develop models for future water availability scenarios & demands	• *Development of a DSS alongside the water audit is in progress* • *There was a meeting between the PMU and the consulting firm to carry along stakeholders whilst designing the DSS*
1.3.2. Develop water management options	• *To be captured in the water audit report*
1.3.3. Analyze dam operation procedures	• *Yet to be done (might be done along the pilot intervention activities)*
1.3.4. Analyze advantages and disadvantages of options including cost and benefit sharing	• *Partly to be captured in the water audit report*
1.3.5. Recommend management options in order of priority	• *Prioritization to be done during the water audit stakeholders meeting planned for March 2006*
2.1. Set in place a multi-stakeholder task team to lead the charter formulation process	• *The PSC had approved that a consultant be commissioned to carry out the entire objective that should be later subjected to a stakeholders' approval. This is to save time and cost. Doing this may give the stakeholders a draft to work with, before their subsequent final approval and adoption.* • *Subsequently, a ToR has been developed to source for a consultant*
2.2. Stakeholder scoping consultations conducted in riparian States and Provinces	• *Scoping consultation with stakeholders started in October 2005 through the LCBC/GEF Project's pilot initiative, and this is to be further enriched by the consultant*
2.3.a. Provide institutional support to the stakeholder forum: training in negotiation skills, support for coordination and communication	• *Stakeholders are currently being trained by JWL on negotiation skills, writing of proposals and addressing their land and water associated challenges*
2.3.b. Commission consultancy study to provide detailed analysis of the legal, policy and institutional context which needs to be reviewed	• *A ToR was developed as stated in Activity 2.1* • *Identification of a potential consultant* • *A financial proposal has been received from the identified consultant and is being negotiated by the Project Coordinator*

2.4. Organize a basin-wide stakeholder forum meeting to synthesis results of state-level scoping consultations and agree on the scope of the following components of the Project: water audit, situation analysis, and needed institutional arrangement and policy review	• *It was done as part of the Project inception workshop in April 2005. List of participants has been provided in appendix 3.*
2.5. (tied to Activity 1.1.3.) Organize second forum meeting to review initial results from the various components of the Project and prepare state-level consultations	• *This is tied to Activity 1.1.3*
2.6. State-level consultations to review study results and draft water management principles and options	• *Yet to be carried out*
2.7. Organize third and final forum meeting to reach consensus on water management principles, and water management options and required institutional changes	• *To be carried out later (getting to end of this phase of the Project)*
2.8. Present findings and recommendations from stakeholder forum to: (a) high-level Federal Government officials; (b) legislators in riparian States; and (c) the National Council of Water Resources	• *Initial steps of this task is tied to Activity 2.7* • *The PMU would be more involved in this task at a later time (getting to the end of this phase of the Project)*
3.1. (tied to Activity 2.1. and contribute to Activities 2.2. and 2.4.) Initial stakeholder meetings discuss and agree on types and sites of priority interventions	• *Already done during the Project inception phase* • *It will be strengthened through the LCBC/GEF Project' pilot funding*
3.2. Conduct feasibility study	• *Carried out but the report writing is still in progress*
3.3. Carry out intervention	• *Expected to start actively by March 2006*
3.4. Conduct study to review	• *Yet to start (to start during and after the*

results and lessons learned	*interventions)*
3.5. Present results of study at stakeholder forum meeting	• *To be tied to Activity 2.7*
4.1. Carry out review of existing Catchment Management Plan and develop a new Catchment Management Plan	• *In progress with the water audit consulting work*
4.2. Validate Catchment Management Plan by stakeholder forum meeting (tied to Activity 2.7.)	• *Tied to Activity 1.1.3*
4.3. Development and disseminate communication brief of the Catchment Management Plan	• *To be done later by the PMU, possibly with the assistance of a consultant*
4.4. Organize donor round-table on Catchment Management Plan and on coordination structure	• *Not yet done (will come towards to the end of this phase of the Project)*
5.1. Sign necessary MoU with key partner institutions	• *MoU with DFID-JWL and LCBC/GEF Projects is being prepared.* • *MoU between BRAO and NCF*
5.2. Recruitment of key Project staff (Project Coordinator, Financial Administrator and other core staff)	• *ToRs for staff produced* • *Project Coordinator was at post in January 2005* • *Water Resources Expert was at post in March 2005* • *Head Driver was at post in April 2005* • *Financial Administrator was at post in mid-April 2005* • *Database Manager and Administrative Assistant were at post in mid-May 2005* • *Legal/Social Science Specialist was at post in July 2005* • *The second driver was at post in August 2005* • *The entire PMU staff was fully in place as at August 2005*
5.3. Develop annual work plans	• *First year annual work plan was produced in May 2005* • *Revised Project budget was finalized in November 2005*
5.4. Conduct Project audit on a yearly basis	• *Not yet*
5.5. Carry out Project evaluation	• *This is being carried out now (covered by this report (February 2006)*
5.6. Organize supervision missions	• *from BRAO*

5.7. Organize Project Steering Committee (PSC) meeting	• *Brief report on TAC-HJKYBCC meeting held in June 2005* • *Minutes of PSC meeting held in September 2005 available*

2.0 Evaluation in IUCN

Evaluation has always assumed an important position in IUCN, as it is a vital responsibility of managers at policy, programme and project levels. It is also a key responsibility of the IUCN Council at the governance level. Evaluations provide performance information necessary for all levels of management's accountability requirements. It is made as an essential mechanism for feedback, learning and change process.

Thus, evaluation at IUCN performs two fundamental functions:

a. Learning and Improvement: This assumes that evaluation provides learning environment for, especially project managers and policy makers in IUCN. It engages staff and their partners in creative ways to learn how to improve all works, thus making the work more effective through the provisions of feedbacks and a commitment to act on the feedback.

b. Accountability: This sees evaluations as ways by which IUCN answers its member, partners and donors whether policies, programmes and operations are working well, and whether its resources are used in a responsible way.

This submission is on the mid-term evaluation of the KYB Project which began in May 2005. The exercise has been carried out within a period of 3 days in the manner described below.

3.0 Methodology

3.1 Consultancy Agreement, Study and Visit Schedules

The exercise followed a consultancy contract agreement reached between the Consultant and the FMWR-IUCN-NCF for the evaluation exercise to be carried out on the basis of a four day service. Following this a work schedule was drawn and agreed by the team. Documents were passed on to the Consultant. Based on the contents reviewed, visits were proposed to be made by a team of Daniele Perrot-Maitre (IUCN-WANI, Switzerland), Engr. J. Kwanashei (Project Director, KYB), Mrs. Ronke Olubamise (NCF, Lagos) and the Consultant, to the DFID-JWL in Dutse (Jigawa State), Headquarters of the Hadejia-Jama'are River Basin Development Authority (H-JRBDA), Ministry of Water Resources and Water Board both in Kano State.

After the initial plans, it was realized that DFID-JWL group would be out of office during the course of the week, thus, it was quickly arranged for the team to visit Jigawa State Ministry of Water Resources at Ringim. Similarly, on the final day, it was understood

that the H-JRBDA had an unscheduled visitation by the national authorities, and the officers concerned were inaccessible. Thus, we had to cancel the visit there completely.

1st Day – February 6, 2006
Point of Visit: Jigawa State Ministry of Water Resources (J-MWR), Ringim
Time of Visit: 2.10p.m.
Officer(s) consulted: Dr. Muslim Idris, Director Water & Quality Control

2nd Day – February 7, 2006
Point of Visit: (a) Kano State Ministry of Water Resources (K-MWR), Kano
Time of Visit: 11.30a.m.
Officer(s) consulted: i. Alh. Salihu Sagir Takai (Hon. Commissioner)
ii. Alh. Baffa Bello (Permanent Secretary)
iii. Alh. Sanusi Usman (Director, PRS)
iv. Alh. Danladi Muhammad (Director, Irrigation)
v. Ahamed Muhammad Riruwai (Ag. Director, Hydrology)
vi. Aminu Ahmed (Director, Rural Resources)

Point of Visit: (b) Kano State Water Board (K-WB)
Time of Visit: 1.10p.m.
Officer(s) consulted: i. Engr. Muhammad Adamu Wudil (Director)
ii. Engr. Ibrahim Tsakuwa (Special Project Liason Officer)
iii. Engr. Ibrahim Dederi

3rd Day – February 8, 2008
As officers in H-JRBDA still inaccessible, the team resorted to discussing outstanding issues. Primary, it looked at the several interventions and as well sort some level of explanation of the structure and collaboration that exists between KYB and especially DFID-JWL and LCBC.

4th Day – February 17, 2006
Submission of Report.

3.2 IUCN Evaluation Criteria

Evaluations in IUCN explore five major criteria. However, modifications are made in the cases of Commissions or Regional Offices that not all five need be systematically reviewed. Specific situations call for specific nature of the evaluation. Nonetheless, in all cases, an IUCN evaluation must first consider all these criteria and decide which are the most important for the situation. These criteria are:

Relevance – This report considers the extent to which KYB is contributing to the strategic direction of IUCN. It further considers whether the Project is appropriate in the context of its environment.

Effectiveness – The report also seeks to understand the extent to which KYB is meeting its objectives and whether it is performing well.

Efficiency – It seeks the answer as to whether KYB is using its resources cost-effectively. Whether the quality and quantity of results so far achieved justify the resources expended. We venture to see whether there is a more cost effective methods of achieving the particular result.

Impact – The report also tries to measure the positive, negative, primary and secondary long-term effects produced by the Project.

Sustainability – The sustainability of KYB is considered by looking at the enabling environment that is supportive to its continuity after support is withdrawn.

Attempts were made to also look at other criteria such as financial viability, equity, gender, poverty etc. and to see how the Project attempts to address them.

4.0 Findings

Information collected and collated both through project document and field visits indicated:

4.1. None availability of data/information – The KYB is in the dryland of northern Nigeria. Thus for any meaningful development/management initiative on water resources, there is the need for data. Of course, information is lacking even on some sensitive water issues which proves very challenging. For instance, most state Ministries of Water Resources and also the H-JRBDA lack basic data set on weather and climatic characteristics, stream water levels, discharge, quality etc. Where these are present it was understood the "figures" are only merely collected and improperly kept.

However, indications from both Kano and Jigawa States suggest that data collection has been regular. They both indicated their readiness to cooperate with the KYB to share the available data. These indications have been corroborated by the Project Officer.

One key development in this regard is the fact that in Jigawa State they have been made to understand the need for a database. Now they have the will and the zeal to do it. Thus a new Department of Water and Quality Control has been created (in the Ministry of Water Resources). It is mainly to assist in the derivation and management of information.

4.2. Improper Water Management – As most water within the catchment is known to have been dammed at the upstream locations, water management is crucial. Of course, as highlighted above no adequate information exists on the amount of water behind the dams, and information is not available on the water needs at all locations within part of the year. The only available information that exists in this direction is the amount of water withdrawals for urban water supplies in Kano State. Figures of 400 – 700 M liters have been provided. Even then, the adequacy or not of such water is not known.

For this, the basic understanding is that the water releases from the dams (especially at Tiga and Challawa Gorge) need to be properly managed. But it is apparently clear lack of

adequate data may not allow for such level of management. In this direction, all establishments are willing to cooperate in the drive towards water audit. This is one of the primary works that the KYB is focusing on.

4.3. Conflicts Between and Among Stakeholders – existence and annual recurrence of conflicts between different stakeholders especially pastoralists and farmers is a reality in the basin. For several years the herding community and the farmers' groups are in serious battle over the communality of the resources (both water and land) available. The understanding of everybody is the Land Use Act (1979) does not adequately cater for the needs of the herding groups, giving a lot to the farmers. Of course, as both groups are always on the field together, conflicts do happen.

One basic understanding of the cause of this is the fact of lack of adequate information during all times. Of course, should there be a forum at which all issues are spelt out clearly and discussed, then informed decision would be taken. Thus, the formation and strengthening of the stakeholder forum is an important area of the KYB.

4.4. Typha Invasion – The invasive spread of typha grass (known locally as "Kachalla") over the last 20 years along the water courses and subsequently the floodable lands (fadama) has been the single greatest threat to the local economy. Many of the local communities only began to notice typha in the late 1980s, but by 2000 more than 60% of low lying floodable agricultural lands had been taken over by typha grass. According to a DFID-JWL document, in 1985 only 12ha of farmland in Madachi village had been invaded by the grass, but by 2000 this figure had expanded to 216ha; roughly 80% of the fields hitherto under cultivation. On the average therefore, production dropped to around 20% of the land's potential.

Downstream of Madachi, along Marma Channel and around Nguru Lake, the general picture is much the same as typha covers an estimated 200km^2 of formerly arable land. Along some stretches of the Marma Channel, e.g. at Kirigidi and Matafari in Kirikasamma LGA, typha grass has taken over local farming and grazing land to such an extent that it now fills the horizon, as far as the eyes can see in every direction. Of course for most of the basin tracts of productive land once given over to wheat and rice cultivation are now totally swamped by typha.

Some problems of the typha includes the provision of vast breeding ground for fresh water snails, mosquitoes and other insects, leading to increased incidence of diseases like bilhazias and malaria in humans and liver fluke in livestock. Moreover, typha provides a roosting place for flying crop-pests, like quelea birds, resulting in bird infestation and extensive crop damage, particularly rice, wheat and sorghum. In another development, the presence and invasion of typha is associated to the rise in the level of ground water tables causing potash intrusion of surrounding land, salising the soil and rendering it useless to farmers and grazers.

It is the belief of the KYB that the water audit exercise will lead to some levels of control and proper management of the water releases from both Tiga and Challawa. It is for this

reason that the water audit exercise is given a lot of prominence in the works of the project.

4.5. Flood occurrence due to blockages of natural water/river courses – consequent to the presence of the typha in water courses leads to lower river/stream discharges and higher siltations of the river and stream channels. In this way narrow and shallow channels are completely blocked leading to over-flooding of the surrounding farmlands and settlement. Within the past few years, the combined effects of all these hydrological changes has had even direr consequences for people living in the Hadejia-Nguru Wetlands (HNW) and immediately upstream. Of course, this means that the water is diverted to somewhere else; where it is not needed.

4.6. Lack of adequate community sensitization and participatory scheme towards amicable and effective management of the water resources – It is evidently clear that despite the presence of many interventions in the basin, there had never been any significant attempt to establish adequate community sensitization and participatory scheme before the DFID-JWL. Some community participation through communal clearance of channels has been introduced. The people where sensitized at different levels (hamlets, villages and towns) and organised to carry out the desired activities. The works were started with short-term measures at the grassroots with the hope of building firm foundations for long-term improvements. Through DFID-JWL a great deal of work has been done in bringing together the worst affected rural communities along Burum-Gana and Marma Channel, to recognize their common problem and seek for a common solution. As flood and typha are identified as their utmost problems, priority has been given to the clearance and opening up of the main river channels. Several groups of 50-100 volunteers are so enthusiastic to work together to remove the grass and silt by hand. Some of them, knowing fully well the enormous task have sought support through their local authorities. With some success they have so far managed to get a mechanical excavator from the governments and are beginning to work on the most troublesome stretches of the channels that have had been completely taken over by typha.

5.0 The Evaluation

Having reviewed the outputs of the Project so far we are now at the position to clearly see the extent to which the activities so far may lead to an establishment of a framework for broad-based and informed decision making process, based on agreed principles for equitable use and sustainable management of the KYB, and hence the overall objective of the Project. These are to be evaluated following the IUCN Evaluation Criteria (as above).

5.1. Effectiveness: Indications so far are that a very strong and broad-based stakeholder forum is being utilized by all the three sister-Projects (JWL, LCBC and KYB). Project documents indicate that an opportunity for the Forum to meet again, after the last meeting in September 2005, is scheduled for March 2006. This is with the hope that by then report of water audit has been received. Of course there is great need for water audit report to be available as its need has been observed and recommended by the Forum at inception phase. It might help significantly in identifying what is to be done and what decision to take. This is as the water audit is to present information on various

parameters of interest including water availability at points in time, water quality, water demand and analysis of trend.

Of course, the identification at the very initial stage of key partners including JWL and making them part of the stakeholder forum has a lot in strengthening KYB. Similarly, the works and focus of the FMWR and other States' ministries (of water resources) in initiation of Integrated Water Resource Management Committee is an excellent vehicle.

One key difficulty that is being faced is the limited budgetary provision (of $20,000 - $22,500) for the organisation of the first stakeholder forum and its tasks. Indications suggest that previously the DFID-JWL supported all previous meetings: provisions of transportations, accommodation and feeding, as well as honourarium for each of the participants could be an expensive venture. Now as the effort has been to make it basin-wide relevant and to put a strong and viable structure to ensure the sustainability of the gains of the interventions, there may be the need to have a bigger budget for the meeting. Moreover, in order to catch up with the schedule, there is the need for the consultants working on water audit to hasten up to submit report. So many activities, including the presentation and discussion on draft water charter, hang on the report. By the initial time-table, the workshop/meeting to discuss the results of the finding was to have been in the last quarter of 2005. Further delays should be discouraged and avoided.

Another area of difficulty is to do with the assumption. It is quite simplistic to assume that the Federal Government and the Lake Chad Basin Commission will endorse outcomes of the stakeholder consultations and agreed principles. The difficulty as has been pointed out during the visits. Political class in Nigeria at all levels (Federal, States and Local governments) is not so quick in understanding technical issues and showing commitments. Thus, there is no harm where some form of workshop is in-built exclusively for them. This is to sensitize them and draw their commitments.

5.2. Efficiency: Most of the activities of KYB within from inception have been to set-up and to contract consultants and study groups. Data collection has been supported especially at the levels of the State Governments. There are, though, indications that the Project has taken over, completely, the activities of data collections in some locations. Thus, going by the initial budgetary provisions, it is clearly evident of efficient utilization and management of resources. Instances of these can be seen where recruitments were concluded within the budgetary provisions. Similarly, despite the difficulties faced, consultants have been made to work within the provisions.

However, it needs to be indicated that the Consultant has not looked at the detailed procedures of financial reporting and budgeting. But available records suggest that resources are committed to activities as in the budgetary provisions. Of course, there exists mid-year budgets, and these are reviewed regularly. There are efforts to ensure that budget spending and project activities are in line with IUCN financial rules.

It needs to be indicated that consultancies are expensive activities in Nigeria, and for this reason, the Project has been having difficult times negotiating with the consultants. This causes a lot of delays when it comes to the execution of jobs.

Assets as vehicles, offices and housings, are being used efficiently, each for the purpose meant. So far all Project staff are recruited and each is drawing salary as in the budgetary provision.

Unforeseen problems are being addressed. For instance, adjustments have been made to be in line with the budgetary provisions. Contracts are entered into after long process of negotiation in order to come to the levels of the provisions.

5.3. Relevance: There is no doubt that project that focuses water management in a wide basin within a dryland is desirable. Of course, the KYB is the most complex Basin in terms of the human utilization needs in Nigeria. The upstream environment has for long been dammed making the northern dry region even dryer. Thus, Project on water management with broad-based participatory agreement is very relevant.

The approach being taken of strengthening the capacities of the local communities, providing for them avenues to understand their needs and the needs of other communities through stakeholder meeting/workshops is sure to bring understanding and a sense of responsibility to all. Collectively, the local communities are now getting to decide and work together in an informed way. While this has been started by a sister-project, a wider scheme is needed to open the horizon of the understanding and collaboration.

At this level, already there are indications that, even from the most volatile areas (of Jigawa State) last year did not record any instance of (farmer Vs pastoralist) conflict. Moreover, state governments and agencies are getting to understand the need for data management and ministerial units are being created for the purpose. This is a huge success. It is significant to point out that where Project succeeds in coming up with the report of water audit and a draft of water management charter, so much would have been achieved. This of course is to have gone a long way in achieving the goal of IUCN in the basin.

5.4. Impact: The Project is yet to make significant impact on the people at the grassroot. This is as the framework for that has not been fully developed. By March 2006 when another meeting of the Stakeholder Forum is scheduled to take place, the grassroot participation would be clear and the impact will show. Nonetheless, indications now seem strong that people are happy with the project and understanding is growing. For which reason, the case of “no conflict within the year” is a wonderful development. People will come to have high sense of equity and will be immensely happy to participate in decision making.

Of course, several working groups as Miyetti Allah (a Fulani/herder group), women’s groups, the youth organisations etc., are happy with their participation in decision

making. This must have accounted for the achievements highlighted above. It will certainly be even more with more time.

One major environmental problem that has been there within the past 20 years is to do with water management and the growth and invasion of typha grass, leading to diversion of river/stream flows and floods. Although the Project has not, as yet presented the result of water audit, there is a strong indication that with better water management system, the environmental situation/conditions will improve. Scientific means of addressing the siltation and typha invasion will be addressed. Free flows of the river natural systems will resume and human use of the nature in a more acceptable manner will also resume.

5.5. Sustainability: By design the Project is a participatory scheme. Groups are to be brought to the understanding of natural provisions and thus the utilizations of such resources should be within what they discuss and agree. Where this principle is accepted, group formations are concluded, strong sustainability scheme is, therefore, implanted. The difficulty might be the sustainability of meetings and the executions of meeting resolutions. It is in this respect that the different committees on Integrated Water Management need to be drawn strongly into the system.

It has been clearly indicated that the different state government ministries and parastatals are keen and have shown some levels of commitments to the Project. This is to be encouraged and strengthened.

6.0 Lessons Learnt

6.1 Project Structure

Existing project structure is built in a way that it will collaborate/link with the Nigeria water agencies (at the Federal, States and Local Councils) and stakeholder forum (made up of key project partners including the DFID-JWL, LCBC etc.). From information gathered both from the existing documents and field, it is important to state that the Project has gained tremendously that participatory approach is a viable vehicle for grassroot sustainable development. In which case, people come collectively to discuss openly their problems and especially feelings. Amicable positions are presented and informed decisions are made. This has been pointed out especially at the stakeholders meetings before the Project and as well as during its inception. Similarly, it is the opinion of many that the political class (at all levels) needs to be adequately mobilized and/or sensitized if meaningful achievements are to be made. It is the opinion of some of the people consulted that workshops targeting the two objectives of mobilization and sensitization be organised regularly. Of course, this group has been identified (in the structure) to provide consultations. Doing exactly what the people suggest is not demanding for something new.

Decision making is made simplified and scientific. Inputs are received from all levels of the existing structures – governors of riparian states, key parastatals of the federal, and states' water ministries, who are made to form administrative and technical committees, as well as the Stakeholder Forum, in this way decisions are collectively taken and implemented. This is a structure that is workable and sustainable.

Although it has not been deeply looked by the Consultant, existing Project reports suggest that the processes of monitoring, reporting and assessment is very credible. Project Coordinator who reports to both the Project Director and to IUCN-West Africa Regional Office is the key Project manager. He collaborates with the Legal/Social Science Specialist, Water Resource Expert and Database Manager on all technical issues relating to each of the key areas. He also directs and supervises the Project Financial Administrator who in turn is responsible for ensuring the technically sound use of financial resources. Together decisions are taken – individuals monitoring and reporting on the performance of one another. Of course, this ensures prudence and accountability.

6.2 Project Strategic Approach

Stakeholder involvement is primary to the success and sustainability of the gains of the Project. Stakeholders in as defined by the KYB include such partners as LCBC/GEF, DFID-JWL, FMWR, H-JRBDA, States Ministries of Water Resources, universities (within the basin), farmers, herders and fishermen groups, etc. Indications from some of these indicated that decisions, so far, are respected. Of course, information is shared among and between different groups. This has the advantage of educating each group, and especially between the up and downstream communities. Nowadays, the enmity that used to exist between the groups has now eased up. Tension is being carefully addressed.

According to some of the State Directors (in Water Ministries), no eminent crisis was registered in anywhere within the Basin. Different communities are beginning to understand the symbiosis between and among them. This will go a long way in making all achievements very viable, strong and sustainable.

At this level, KYB has been able to identify the different (older) interventions. KYB is building on some of the successes of these interventions. It is important to state that despite the fact that the DFID-JWL Project seems to have similar objectives as the KYB it needs to be pointed out that the former has more to do with the wetland areas while the latter with the basin wide. Related to this, the LCBC is another important partner. There was an initial plan for the LCBC to assist the KYB in mounting workshops as well as improving the awareness among member states (Nigeria, Niger Republic, Chad, and Cameroun). Moreover, LCBC indicates to be in-charge of the process of finalization of the water management charter which will be established by KYB.

So far the Project implementation strategies of identifying relevant stakeholders, collect relevant data sets for use and contacting/collaborating with them over issues is clearly important. With these, focusing water audit and the establishment of water management charter are very relevant. Through these, the Project is expected to contribute immensely in the establishment of mechanisms for early warning system within the entire Basin. Moreover, as the data collection in most of the locations are likely to be regular, and database kept and used, early warning system is likely to be improved upon. Another key lesson learnt that is related to the operational strategies is the fact that waterlogging and incessant flooding aggravates the typha situation. Of course, typha problem is now a priority one to all the people in the basin. It has now been established that typha is

connected to the problem of inhibited water flow within the natural water course, causing more blockages, more typha and more flood. The water management charter within the basin is one key management tool that needs to be completed and tested in good time. Many of the stakeholders are looking forward to the draft and they all indicated their willingness to make viable inputs when the time comes.

One bitter lesson learnt is the fact that financial funds for the Project are very limited. Efforts are always being made to address the financial difficulties. Of course this key point was made during the inception meeting and a call for preparedness for some adjustments and reformulation of problems was made. In addition, there is the problem of lack of enthusiasm on the part of politicians to support projects that do not mature during their tenure of office, hence the need to develop a different strategy for selling one's ideas to them. Thus all ways through which political leaders will be made to honour their obligations should be made to remain open.

7.0 KYB Vs Initial Assumptions and Hypotheses

The initial assumption was that water management problems in the KYB were numerous and present a lot of difficulties, the many intervention schemes within the basin have no proper coordination of activities. Of course there are many duplications and inconsistent objectives all of which lead to a lot of disorganizations and conflicts.

Although the KYB is still at infancy stage, it is apparent that the focus is sound. Many of the objectives will certainly be achieved. It is important to point out that the Project is providing some synergy to the existing projects as well as paving ways for the up coming ones to take up on sound footing.

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Appendices

Appendix 1: List of Participants at First Stakeholder Workshop (5 – 6, January, 2003)

Name of Participant	***Organisation Represented***
Dr. Muhtari Aminu-Kano	*NCF, Lagos*
Olumide Akinsola	*NCF, Lagos*
Dr. Madiodio Niasse	*IUCN*
Prof. Lekan Oyebande	*University of Lagos*
David Onwukanjo Anyanwoke	*NCF, Lagos*
Engr. Nicholas D. Madu	*DRO-FMWR, Abuja*
Michael N. Adebiyi	*Federal Ministry of Agric, Abuja*
Akinsola V. Amire	*Federal Ministry of Agric, Abuja*
Denis U. Iyelih	*Afremedev Con. Serv., Abuja*
Fada G. Abubakar	*Afremedev Con. Serv., Abuja*
Reginald O. Ikpeanujo	*DRO-FMWR, Abuja*
Engr. Idi M. Daya	*Yobe State Ministry of Water Resources*
Abba J. Gashua	*Yobe ADP*
Audu A. Daya	*Yobe Ministry of Agric.*
Olufemi Odumosu	*H&H-FMWR, Abuja*
Okechukwu M. Offie	*H&H-FMWR, Abuja*
Jubril A. Hamidu	*Hydroterra Consult*
Prof. Francis A. Adeniji	*University of Maiduguri*
Imam Umar	*FAO/UN, Abuja*
Shittu E. Dumbai	*Chad Basin Development Authority*
Dr. Muslim Idris	*Jigawa Ministry of Water Resources*
Engr. Mshelizah D. Ibrahim	*Chad Basin Dev. Authority*
Yahaya Mustapha	*Bayero University, Kano*
Ado S. Babura	*Jigawa Min. of Water Resources*
Engr. Usman A. Ibrahim	*Bauchi, ADP, Bauchi*
Engr. Yahaya Dalha Kazaure	*H-JRBDA*
Johnson A. Oguntola	*LCBC*
Shehu D. Abdulkadir	*HJRBDA, Kano*
Mohammed I. Abubakar	*HJRBDA, Kano*
Engr. Nakande S. Mahmoud	*HJRBDA, Kano*
Garba D. Magaji	*HJRBDA, Kano*
Ya'u Mohammed	*HJRBDA, Kano*
Zakari Z. Abubakar	*HJRBDA, Kano*
Imrana M. Mohammed	*HJRBDA, Kano*
Boubakari Mana	*LCBC*
Engr. M.S. Adamu	*LCBC*
Auwalu M. Garko	*HJRBDA, Kano*

Haruna Abubakar	*Kano Min. of Agric., Kano*
Mohammed B. Saidu	*Kano Min. of Agric., Kano*
Engr. I.K. Musa	*I&D-FMWR, Abuja*
Mrs. Helen Eweka	*I&D-FMWR, Abuja*
Sani Bala	*I&D-FMWR, Abuja*
Nathan A. Song	*I&D-FMWR, Abuja*
S.I. Ogunlaja (Mrs)	*I&D-FMWR, Abuja*
Engr. Danladi Mohammed	*HJRBDA, Kano*
Salisu U. Kofar-Wambai	*HJRBDA, Kano*
Abdulsalam I. Yaroson	*HJRBDA, Kano*
Mohammed Haruna	*HJRBDA, Kano*
Mohammed J. Chiroma	*HJRBDA, Kano*
Dr. Hassan Bdliya	*JEWEL*
William A. Oladele	*FMA, Kano*
Veronica N. Muthui	*IUCN*

Appendix 3: List of Identified Stakeholders (So far)

Personalities	***Institution***
Mr. E.C.J. Okafor	*FMEnv*
John K. Auta	*FMEnv*
R.K. Ahmed	*FMEnv*
Mrs Osusanya	*FMEnv*
Alh M.M. Umar	*FMEnv*
Mr. Paul Ibeka	*FMWR*
Umar Hassan	*FMA&NR (NLPD)*
M.S. Ahmed	*FMA&NR*
I.P. Davwet	*NPC*
Mrs. Joshua	*NPC*
Engr. Yahaya Dalha Kazaure	*H-JRBDA*
Dahiru Msheliza	*CBDA*
Ayoola Muraina	*Chad Basin National Park*
Alh. Yahaya Abubakar	*J-MA&NR*
Garba Sabo Abdullahi	*J-MA&NR*
Dr. Nasiru Musa	*J-MA&NR*
Musa S. Usman	*J-MA&NR*
Mohammed DanYaro	*J-MEnv*
Audu Audu Daya	*Yobe State Min. of Agric*
Alh. Ahmed Tika	*Yobe State Min. of Agric. & Natural Res.*
Muhammad I. Machina	*Yobe State Min. of Agric & Natural Res.*
Mohammed Maina Ibrahim	*Yobe State Min. of Agric & Natural Res.*
Garba Tahir Usman	*Yobe State Min. of Env.*
Mr. Absalom Kushi	*Bauchi State Min. of Agric & Natural Res.*
Mal. Umar Abba Tilde	*Bauchi State Min. of Agric & Natural Res.*
Alh. Liman Bello	*Bauchi State Min. of Agric & Natural Res.*
Alh. Muhammadu H. Shehu	*Bauchi State Min. of Water Res.*
Tsalha A. Zailani	*Bauchi State Min. of Agric & Natural Res.*
Dr. Dauda Abdullahi	*Bauchi State ADP*
Muhammadu G. Magaji	*Bauchi State ADP*
Mr. John A. Uba	*Borno State ADP*
Mallum A Izge	*Borno State ADP*
Mal. Ibrahim Ali Izge	*Borno State ADP*
Engr. John Daniel Dawha	*Borno State ADP*
Engr. Haruna Abubakar	*Kano State MWRR&CD*
Alh. Muhammadu Hurdi Haruna	*Jigawa ADP*
Alh. Ado Sulaiman	*Jigawa State MWR*
Dr. Muslim Idris	*Jigawa State MWR*
Abubakar Liman Baba	*Yobe State Min. of Agric. & NR*
Alh. Abba J. Gashua	*Yobe State ADP*

Mal. Muhammad Nasir Sani	*Jigawa State Environmental Protection*
Mohammed T. Hussaini	*Jigawa State Environmental Protection*
Mamuda Musa	*Sec. Fadama Users, Nguru*
Yau Mohammed	*Jigawa State Cattle Breeders Ass.*
Ismaila Abdullahi Hadejia	*Secco Consultancy Services*
Bello Abdullahi B.	*Guri LGC*
Alh. Musa Hassan Birnuwa	*Kirikasamma LGC*
Aliyu Musa	*HOD Agric, Zaki LGC*
Alh. Hassan Gazali	*Chairman Caretake, Nguru LGC*
Hajja Salamatu Bogo	*Women in NEAZDP*
Ahmad T. Barde	*NEAZDP*
Hajjia Hadiza Abdulwahab	*Jigawa State Millennium Village Comm.*
Furera Abdullahi B.	*Jigawa State Min of Women Affairs*
Elizabeth E. Dakama	*Bauchi State Min. of Women Affairs*
Mal. M. Garba	*WOFAN*
Mrs. Salamatu Garba	*WOFAN*
Titi Yakubu	*DEC, Bauchi*
Tasalla Chibok	*WDI, Kano*
Alh. Abubakar Dogona	*Dagona Community Rep.*
Alh. Ibrahim Sarkin Ruwa of Bade	*Fisher's Association*
Ahmad T. Inuwa	*NCF, Kano Chapter*
Abdullahi Musa I.	*CEPSEEA, Kano*
Kolawale Adebiyi	*S.H.A. Rep., Damaturu, Yobe State*
Alh. Grema	*A.S.N.E.C. Nguru*
Alh. Muhammad Sale – District Head	*Bade Emirate Council*
Prof. Adeniji	*Afromedia/UNIMAID*
Dr. Augustine U. Ezealor	*Ahmadu Bello Univ, Zaria*
Dr. M. Aminu-Kano	*Savannah Conservation, Nigeria*
Mal. Usman Dukku	*ATBU, Bauchi*
Dr. Salisu Muhammad	*Bayero University, Kano*
Esther Walabai	*World Bank Rep.*