## National Irrigation Policy and Strategy for Nigeria

## PART 1: THE NEED FOR A POLICY

### 1.1 The Background: Why a national irrigation policy

This policy provides the objective, principles and strategy for development of both private and public irrigation in Nigeria as the sub-sector evolves in response to domestic and regional demand for food and fibre. It is based on an update of baseline information on the status of public irrigation schemes[1] in Nigeria and indicated directions for institutional reform and public investment as established by the **Review of the Public Irrigation Sector** (ROPISIN) and guidelines provided by the Food and Agriculture Organisation of the United Nations (FAO). The proposed ROPISIN Action Plan for Development is included in Annexure A and forms an integral part of the implementation strategy of this policy.

The policy document is divided into four parts:

Part I - The need for a policy
Part II - Policy objectives, principles and strategies;
Part III - Development of Irrigation and Drainage to close production gaps;
Part IV - Implementation of the Policy – streamlined institutions and enhanced enabling environment;

Prior to this document, the FGN had produced two draft NIDPs. The FMWR has also passed a Policy on Private Sector Participation in Irrigation Development and Management. In addition there have been sector reviews on irrigation and agriculture institutions carried out by FAO in 2000 and 2003 respectively. This policy seeks therefore to link these with other relevant policies (water, agriculture and environment). In doing so, this document considers cross-cutting issues and linkages between the various institutions in the fields of water and agriculture that are essential to achieve workable strategies and pragmatic policies. This is aimed primarily at facilitating the reform of existing institutions and organisations to allow these policies to be effective.

A strategic balance between rainfed and irrigated production has to be achieved in Nigeria. Rainfed production accounts for the bulk of Nigerian agricultural production. It can be stabilised at low cost per hectare but will always be vulnerable to drought . Irrigated production can buffer the impacts of drought where it can draw on groundwater or stored surface water or a mixture of both. It is important that the policy positions irrigated production within the broader context of rainfed production and encourages a viable structure of public and private irrigation and with a balanced set of small, medium and large scale irrigated production

The policy is consistent with and expands on the Irrigation and Drainage sub-sector policy outlined in the July 2004 draft National Water Policy. The policy is also in conformance with to the FGN programme of civil service reform which seeks to improve government agency responsiveness to local demands and obtain a much more coherent and transparent targeting of public funds. At the same time, the policy is predicated on removing constraints on private sector engagement to provide irrigation services within a broader commitment to agricultural commercialisation. This is important if agricultural intensification offered by irrigation is to be taken to scale in Nigeria in order to meet the demands of a rapidly expanding urban population.

[1] and selected private and state irrigation schemes.

The policy seeks to institutionalise Integrated Water Resource Management (IWRM) which is absolutely necessary to provide citizens of this nation with adequate response to the growing demand for water and the associated problems. It seeks to coordinate the management of water, land and other resources for irrigation and drainage while taking account of all users and uses, both at the present and in the future. Furthermore it moves away from top-down development, towards transparent, accountable, participatory and basin wide approach, in which all can negotiate their legitimate interest in the water resource.

The policy essentially harmonises strategies for managing water for agriculture without compromising the integrity of productive ecosystems. The policy will be implemented as part of the proposed institutional reform of the RBDAs. The reform outlined in Annex B is required as part of FGN programme of civil service reform and to ensure coherency and transparency in the development and management of Nigeria's irrigated sub-sector.

It should be stressed that there are two dimensions to the scope of the Irrigation Policy. The primary purpose of the policy is to improve the performance of the water services in irrigated production as they fall under the mandate of the Federal Ministry of Water Resource and related water agencies at state level (as defined in the 1993 Water Resources Act). The secondary, but equally necessary, purpose is to prompt complementary policy alignment in specific aspects of agricultural production, commercial environment (the marketing and trading of irrigated production), socio-economic planning (particularly the promotion of sustainable rural livelihoods), and environmental management across Nigeria's river basins and related aquifers.

### 1.2 Nigeria's Irrigation Challenges

The specific challenges that this policy is designed to address are;

- a widening gap between demand for food and domestic supply – as result of population growth and changing patterns of consumption
- A thinning rural economy and a poorly structured irrigation industry – unable to respond to domestic demand for food and fibre at a sufficient scale and with the right quality.
- Poor performance of public irrigation investment – input driven not output led
- Very little private investment beyond fadama-level production

A key constraint to resolving these issues is the fact that water and agriculture policy are not 'joined up' and institutional mandates confused. Although the FMWR has the overall responsibility for formulating policies and programmes for irrigation development in Nigeria, the FMARD and SIDs also carry out their own programmes, notably the *fadama* project and state irrigation scheme development. This has led to a fragmented and often conflicting approach to irrigation development with the various agencies competing rather than cooperating with and complementing each other.

### 1.3 What can irrigated agriculture contribute to the national economy?

At the outset it is important to recognise that while rainfed production accounts for the bulk of Nigeria's agricultural production, rainfed systems are ultimately limited by drought. Rainfed production is prone to volatility but measures to stabilise rainfed production can be very cost-effective. Where conjunctive use of surface and easily mobilised groundwater is possible, fadama production can address local food requirements with less vulnerability to inter-annual variations in rainfall. However, fadama production cannot address the scale or quality of production needed to supply

urban populations. Formal 'precision' irrigated production and post-harvest processing of food staples and high value cash crops can offer more stability in farm income and rural employment. Modern large scale irrigation can start to reduce the gap between demand and supply.

### 1.4 Prospects for reversing current trends

The costs of not realising the advantage of irrigated production are too high. Food import bills are rising rapidly and drain foreign exchange. The National Economic Empowerment and Development Strategy (NEEDS) anticipates an agricultural development programme that will drastically reduce food imports, boost agricultural exports through stabilisation and expansion of rainfed production, intensification through irrigation and accelerated commercialisation through private sector participation.

Federal, state and local government institutions accept the need for change as part of the process of decentralisation. Farmer organisations have been recognised globally as a sustainable means of operating and managing irrigation schemes and current constraints to their engagement and performance need to be removed in Nigeria. The time is ripe to follow through on an agenda for change and institutional transformation. Government agencies are to focus on their role as suppliers of public goods (bulk water supply, power, roads) and regulators of the natural resource use. At the same time, the private sector needs to be encouraged to take up a more active role in commercialised agricultural production. Many of these commercial opportunities will hinge upon the application of irrigation.

### 1.5 How will a national irrigation policy be implemented?

Working from a national consensus, the policy articulates realistic, time-bound strategies for the appropriate small, medium and large scale irrigation development. The policy defines the scope of the policy, the policy targets, the policy beneficiaries and who does what – what aspects of irrigation need to be in the public domain and what aspects are best served by private actors, from individual farmers to commercial agri-business.

At the heart of the policy is the institutional transformation of river basin management in Nigeria. The irrigation policy responds to the need for this change and the changing market conditions for intensive agricultural production within Nigeria and within the wider regional markets in Africa.

The FMWR is the apex organ of government which has the statutory responsibility for policy formulation and coordination for water resources and irrigation development and management throughout the federation.

The Ministry formulates policy through the National Council for Water Resources (NCWR) which is chaired by the Minister of Water Resources. The NCWR has as its members, all the State Commissioners responsible for water resources development as well as representatives of other federal ministries and agencies which are also concerned with water use, notably the FMARD, FMEnv, National Electric Power Authority (NEPA), and the National Inland Waterways Authority (NIWA),.

## PART II: POLICY OBJECTIVES, PRINCIPLES AND STRATEGIES

### 2.1 Introduction – the scope of an irrigation policy

The policy is designed to apply to a specific set of beneficiaries – direct beneficiaries and their related institutions and economic sectors. The policy has been made relevant to all methods of irrigation in Nigeria and complementary to the rain-fed farming systems. Consequently, the policy is designed to apply to the following:

Irrigation Users
- farmer owned and operated irrigation schemes (including fadama)
- the 'formal' public irrigation schemes
- the emerging commercial sector

Irrigation Service Providers
- FMWR (RBDAs)
- FMARD
- ADPs
- SIDs
- Water User Associations
- the emerging commercial sector

Regulators
- FMWR (RBDAs)
- State Governments

The irrigation policy does not stand in isolation. It needs close alignment with parallel policies in agriculture, bulk water supply (for municipal use, hydropower generation, aquaculture and related environmental services), commerce and trade and environmental management.

### 2.2 The Policy Goals and Objectives

The national irrigation policy is predicated on boosting domestic agricultural production – using irrigation to produce quality and quantity where rainfed production alone cannot meet demand. Irrigated agriculture can contribute to poverty reduction through improved food security, job creation and income generation but the overall policy goal is to improve economic and environmental performance of irrigation.

The policy has a primary purpose to improve the performance of irrigation services within the mandate of FMWR. But it has an equally important secondary purpose to solicit complementary policy and strategy alignment in all the immediately related sectors at federal and state level.

The policy has service performance at its heart. This is fundamental if public and private investment in irrigation and drainage is to be sustained. Consequently, the specific policy objectives are summarised thus:

- Raise overall irrigation productivity in all public and private initiatives,
- Achieve a strategic balance between irrigated and rainfed production,
- Improve water service to all irrigation farmers and work toward full O&M cost recovery from the users,
- Improve and sustain irrigation efficiencies at all schemes, provide extension services and facilitate the provision of inputs and the marketing of outputs,
- Stabilise the public irrigation sector and transfer O&M to the beneficiaries/private sector,
- Consolidate the responsibility for overall coordination and regulation of all irrigation development in Nigeria with the FMWR and request that the

responsibility for the coordination and regulation of all agricultural support services shall reside with the FMARD,

- Remove constraints to private sector engagement and expand the capability of the private sector in both equipment manufacture and supply and in development activities including direct project operation and management.

## 2.3 General Principles

The irrigation and drainage policy is predicated on the following principles of integrated natural resource management;

- Equitable allocation of water rights and land ownership,
- Optimise beneficial use of water within the agricultural sector, including use of stored water and the transfer of rights to use water and land,
- Functional inter-sectoral management of water across river basins, predicated on high quality information generation and exchange,
- Environmental responsibility in irrigation and drainage,
- Clear operation and regulatory roles between agriculture in production and water in supply and the establishment of a working interface between them,
- Facilitate performance of private and public sector agencies in those activities where they have comparative advantage;
- Ensure coherence of policies, planning and budgets within FMWR, FMARD and FMEnv,
- Appropriate scaling of technology and institutions to fit their purpose.

## 2.4 The Broad Irrigation Strategy:

The following are the strategy thrusts clustered into three main areas of activity to address the primary purpose of the policy – improved performance of irrigation services. The development and irrigation institutions thrusts are under the direct mandate of the FMWR. The enhanced enabling environment will require the FMWR to push for improved natural resource regulation and remove constraints to private sector participation in irrigation. The supporting parallel initiatives will require close alignment of FMWR policy with related sectors – agriculture, water supply, hydropower and environment.

***1. Irrigation and Drainage Development to close production gaps***

- *Rehabilitate Existing Public Schemes* identified in ROPISIN as a priority measure with a view to transfer on a commercial basis. This is detailed in Annex A.
- *Effect a transition from publicly funded schemes to commercially viable irrigation:* This will involve the development of new irrigation as a farmer- or farmer group-managed schemes together with medium and large scale commercial schemes which may be privately owned and operated or on a concession basis as appropriate.

  Given the state of the federally funded public sector irrigation (which dominates), the strategy will;
  - prepare a consolidation of existing investments to include rehabilitation of those schemes found to be viable (and with preference for gravity irrigation, farmer management and cash cropping),
  - promote commercialisation of irrigation. This will include a transition to a service oriented approach to operation and maintenance and an enhancement of marketing specifically for irrigated production.
- In schemes not attracting federal funding, particularly the state supported schemes and donor supported agricultural developments, the strategy will focus

on institutional enhancements to enable local commercialisation and provide essential technical and regulatory advice.

- With respect to fadama, FMWR will work closely with the National Fadama Development Office, FMARD, ADPs and others to ensure this irrigation policy is applied constructively to improve the technical and environmental performance of water control in fadama across Nigeria's river basins.

***2. Streamlined irrigation institutions***

- *Reform Irrigation Institutions:* streamline existing institutions and move toward a smarter regulatory model – separate operator and regulator and as much as possible combine all public sector irrigation – federal and state – under accountable community-centred corporate service providers with the ultimate aim to transfer the operation and management, as far as is possible, to the beneficiaries and to private service providers. Two key elements are proposed. First the Creation of a National Irrigation Commission (NIC). Second, institutional transformation of the existing RBDAs to a set of River Basin Organizations (RBOs), a reform that is also being supported by water sector management outside irrigation.

***3. Enhanced Enabling Environment***

- *Introduce Progressive Enabling Legislation in land and water*: The existing legislation for land and water rights would be reviewed so that all irrigators would be able to enjoy stable and transparent rights in use either as individual users or as groups. FGN would instigate a retro-active programme of issuing and enforcing such rights based on the known history of irrigation development and on RBDA records. This will enable the correct priorities for the rights and estimates of water use to be ascertained.
- *Engage the Private Sector:* promote the development of a private sector (including irrigation companies and farmer organisations) to work hand in hand with the FGN in developing and managing irrigation schemes. In collaboration with partner ministries, work to remove constraints to private sector participation in irrigation as detailed in the FMWR Policy on Private Sector Participation in Irrigation Development and Management (passed January 2005)

## 2.4 Necessary Parallel Initiatives

The secondary purpose of the Irrigation Policy is to solicit complementary policy and strategy alignment in all the immediately related sectors. These actions lie outside the immediate scope of the irrigation policy in related economic sectors and macro-economic planning.

- *Negotiate Inter-sectoral allocation of raw water* between Nigeria's principal users of bulk supplies to be on the basis of public health, equitable access, customary use and public interest. A statement of irrigation water requirements based on observed trends and performance of irrigated agriculture needs to be reconciled with equivalent statements of water requirements from rural and municipal potable supplies, industrial users, aquaculture and hydropower generation.
- *Promote Investment in the Marketing Chain*: promote new and enhance existing infrastructure in marketing, agro-processing and access, initially at FGN expense but with a view to eventual full cost recovery as the sector matures and profitability improves. Government would allocate and maintain realistic budgets to the agencies during the transition and as the schemes are redesigned, and rehabilitated or converted to gravity for farmer friendly O&M.

- *Provide Specific Incentives to Private Sector Irrigators*: ensure constraints are removed and commercial incentives are in place to attract manufacturers and suppliers of equipment to Nigeria and to attract private investment to the sector: A review of credit arrangements, land tenure, support services trading arrangements and tax incentives to individual irrigators and commercial interests will be required.
- Work with FMARD to upgrade and expand extension and research services provided by FMARD for irrigated production
- Establish an irrigation co-ordination unit under the NIC to improve operational linkages between State Governments/FMARD/RBOs and FMWR

**Box 1: Summary:**

Objectives:

- Raise overall irrigation productivity in all public and private initiatives,
- Achieve a strategic balance between irrigated and rainfed production,
- Improve water service to all irrigation farmers and work toward full O&M cost recovery from the users,
- Improve and sustain irrigation efficiencies at all schemes, provide extension services and facilitate the provision of inputs and the marketing of outputs,
- Stabilise the public irrigation sector and transfer O&M to the beneficiaries/private sector,
- Consolidate the responsibility for overall coordination and regulation of all irrigation development in Nigeria with the FMWR and request that the responsibility for the coordination and regulation of all agricultural support services shall reside with the FMARD,
- Remove constraints to private sector engagement and expand the capability of the private sector in both equipment manufacture and supply and in development activities including direct project operation and management.

Principles:

- Equitable allocation of water rights and land ownership;
- Optimise beneficial use of water within the agricultural sector, including use of stored water and the transfer of rights to use water and land;
- Functional inter-sectorial management of water across river basins, predicated on high quality information generation and exchange;
- Environmental responsibility in irrigation and drainage;
- Clear operation and regulatory roles between agriculture in production and water in supply and the establishment of a working interface between them;
- Facilitate performance of private and public sector agencies in those activities where they have comparative advantage;
- Ensure coherence of policies, planning and budgets within FMWR, FMARD and FMEnv;
- Appropriate scaling of technology and institutions to fit their purpose.

To achieve objectives strategies will be put in place to:

- streamline existing institutions and move toward a smarter regulatory model – separate operator and regulator and as much as possible combine all public sector irrigation;
- review and evaluate the existing legislation and introduce appropriate reform as may be required or introduce new laws on land ownership/tenure, water rights and farmer organisations;
- review and evaluate the socio-economic value of existing irrigation schemes and consider the discarding of those that are unworkable and rehabilitate and expand those that are viable;
- promote the development of a private sector (including irrigation companies and farmer organisations) to work hand in hand with the FGN in developing and managing irrigation schemes;
- rehabilitate existing schemes identified in ROPOSIN
- plan and develop all new irrigation on a farmer- or farmer group-managed basis;
- transfer the operation, maintenance and management of public sector irrigation, as far as is possible, to the beneficiaries and to community-based service providers;

## Part III: IRRIGATION AND DRAINAGE DEVELOPMENT: SETTING THE INVESTMENT TARGETS

### 3.1 Introduction

Long term development of the irrigated sub-sector will depend on the commercialisation of irrigation. One of the key objectives of the policy is to effect a transition from current levels of public support to irrigation to a much more productive mix of public and private involvement. At the same time, the purpose of ANY continued public funding will be to improve the overall structure of irrigated agriculture in Nigeria to leave it in a much stronger position to compete respond to new market challenges within Nigeria and outside in regional and global markets. This section deals specifically with investment targets in irrigation and related infrastructure that will need a measure of both public and private funding.

It is also recognised that the development of some irrigated agriculture in Nigeria will continue to rely on public funding to ensure dependant communities are not abandoned in areas where the private sector cannot engage.

As far as immediate needs in irrigation are concerned, two investment priorities are recognized. First rehabilitation of priority schemes in the short to medium term. Second is the staged planning of public support to improve the overall structure of the irrigated sub-sector that is under the overall mandate of the FMWR and State Government agencies.

Beyond irrigation infrastructure, there needs to be a parallel initiative in rural infrastructure and marketing chains. These investment targets are identified even though they fall beyond the budgetary scope of FMWR and State Government irrigation agencies. This is because they are necessary conditions for the expansion of irrigated production.

### 3.2 Realise the value of existing assets: rehabilitate priority schemes (as ROPISIN - Annex 1)

As a priority it is proposed to implement Phase I of the ROPISIN recommendations:

(a) Immediately rehabilitate the two schemes KRIP1 and LAIP as proposed in Phase I of the ROPISIN recommendations
(b) From lessons learnt, prepare rehabilitation proposals for remaining 10 ROPISIN schemes based upon best use of existing assets, conversion of pumped to gravity irrigation, access and marketing potentials
(c) Introduce and develop commercial, business practices to crop production, capacity build the stakeholders and transfer O&M to user associations

This will require;

- mobilisation of funds for the two priority schemes
- preparation of scheme rehabilitation plans for 10 schemes
- build capacity of service providers and provide technical assistance in management transfer

### 3.3 Plan and develop new irrigation schemes to improve the overall structure of the irrigated sub-sector

Proposed activities are

- develop mostly FGN funded pilot projects of 100-500ha as proposed ROPISIN Action Plan either as new or as rehabilitated schemes
- encourage private/public sector investment in the pilot projects and in new, independently led development
- source and facilitate donor projects including the accelerated rice projects
- expand beyond the National Fadama Development Project II to support key fadama areas that need support

These investment targets will be defined and developed through FGN led initiatives initially, but, as the sector develops and independent funds for investment become available, a transition from public dominated financing to a pragmatic public/private mix, for both capital and O&M costs, is likely.

### 3.4 The Expected Outputs

- A reverse in the trend of declining irrigation acreages,
- A closing of the gap between actual and planned irrigation development
- Harmonising fadama development with other aspects of irrigation
- Development and regulation of the sub sector
- More private sector involvement in irrigation development and service provision
- The transfer of O&M to user associations

### 3.5 Parallel Initiatives

Part II provides details of parallel initiatives required to implement the policy. These include marketing chain investment and incentives to allow the emerging commercial sector to develop further for service provision and investment.

However, for the implementation of the strategy and its action plan, namely the rehabilitation of existing and the new development of sustainable irrigation schemes, additional activities and infrastructure will be required.

This complementary infrastructure is to be provided in close consultation with the beneficiaries and relevant local institutions and shall include:

Physical infrastructure provision:

- Access roads and power lines to project boundaries,
- Shelters, storage and cooling facilities where they cannot be provided by the private sector,
- Rural water supply and sanitation.

Legislation (see Part IV for details):

- Land and water legislation that assures tenancy and access to water on a long term basis,
- Legislation to allow water user association to be established.

Capacity building and service provision:

- Capacity building farmers, local leaders and Government staff to enhance the establishment, record keeping and accountability of water user associations with a long term aim of PIM at all schemes,
- Irrigation technology and operation and management extension services on two levels: specialised technical support services on a national or regional level and basic agricultural extension services for all irrigation farmers. This may require accelerated programmes of training and experience building at Government training establishments and recruitment of on the job specialists to impart field training of inexperienced staff,
- Irrigation agronomy and research services,
- Monitoring and reporting services.

## PART IV: IMPLEMENTATION – STREAMLINED INSTITUTIONS AND ENHANCED ENABLING ENVIRONMENT

### 4.1 Institutional Reform

The need for institutional reform within the water sector as a whole has been highlighted, particularly the status of the current RBDAs. In line with current economic reforms the bulk irrigation service deliveries from existing dams will become part of the new mandates for 8 newly constituted River Basin Organisations that reflect hydrological units (as described in Annex B). The proposed implementation arrangements outlined here concern only the irrigation service functions and the basin management functions related to the allocation of bulk water and the protection of rights in use for irrigation.

The reforms proposed under this National Irrigation Policy are integrated into the National Water Resources Policy and the National Agricultural Policy and be made complementary to the National Environmental Policy;

#### 4.1.1 Objectives of the Institutional Reform

The objectives are to apply the irrigation policy and implement the strategy: This will include

- streamline the activities of the various agencies involved in irrigation development to avoid duplication of functions and wastage of resources;
- ensure probity, accountability, and transparency
- enhance the efficiency and effectiveness of irrigation agencies in service delivery to the irrigation farmers;
- create the enabling environment for private sector participation in the sub-sector.

#### 4.1.2 Strategies

It is proposed that these objectives will be met by the following actions

- A clear mandate for the RBOs to allocate bulk water for irrigation within the hydrological units and to monitor and ensure effective and efficient usage on behalf of FMWR and to keep records ;
- Creation of a National Irrigation Commission (NIC) which shall be responsible for facilitating government intervention and also be responsible for the development of publicly funded projects
- Through the NIC rehabilitate, modernise and expand existing irrigation schemes that are economically viable and hand over the management of such schemes to the farmer owned Irrigation Agencies/Companies upon completion;
- Encourage, support and facilitate the establishment of Irrigation Agencies/Companies substantially owned by the farmers to take responsibility for the management of completed irrigation schemes as autonomous commercial entities
- In line with its policy on private sector participation, encourage the production of irrigation equipment and farming equipment in Nigeria by inviting reputable manufacturers of such equipment and provide attractive incentives until the sector develops;
- In collaboration with FMARD, upgrade research and service facilities to provide high quality advisory services to farmers - again initially supplied to the farmers at low cost but gradually increasing to an economic level as the sector develops

### 4.3 Enabling legislation

With respect to the existing land tenure system, it is anticipated that the Government will regulate acquisition of irrigable land in such a way;

- To ensure that small holder farmers are not dispossessed of their land in favour of large-scale farmers.
- That land acquired from small holder farmers for the purpose of an irrigation scheme will on completion of the development be allocated to the original owners.
- That the allocation will be carried out in such a way as to ensure that land holdings are not fragmented;
- To encourage private ownership of irrigated lands.
- To ensure that gender equality is considered and that women are encouraged to acquire irrigated land and facilities as well as participate in training programmes.

With respect to water use rights in irrigation, it is anticipated that Government will introduce legislation at State level to

- Register WUAs and identify them as legal entities (see 4.4 below)
- Facilitate the transfer of responsibility for operation and maintenance of tubewells, washbores and irrigation and drainage facilities to water users association (WUA) and or private sector.
- Permit transfer of water use rights within WUAs

### 4.4 Formation and Role of Water Users Associations (WUAs)

Government has in the past been the initiator, developer, operator and maintainer of irrigation schemes to the exclusion of farmer participation. Furthermore, rising operation and maintenance costs coupled with deteriorating irrigation infrastructure have brought into focus the issue of sustainability of the schemes under the existing operation and maintenance arrangement. Objectives are to empower the farmers to take over the responsibility for the operation and maintenance of their schemes and to encourage and support the formation of WUAs, so as to institutionalize Participatory Irrigation Management (PIM). To do this FGN will introduce legislation to register WUAs as legal entities. Additionally provision will be made to use Irrigation Superintendents to facilitate formation of WUAs and prepare them for transfer of responsibility for operation and maintenance.

### 4.5 On-farm Water Management & Cultural Practices

The objective is to increase the effectiveness and efficiency of on-farm water usage and to increase awareness among irrigation farmers of the need to adopt sound irrigation and drainage management practices. This objective will be achieved through a mix of vocational and professional training programmes combined with the development of graduate and post-graduate training in irrigation and engineering programmes and irrigation agronomy.

### 4.6 Promotion of Research in Irrigation and Drainage

Irrigation research in Nigeria is in its infancy. Presently the research tends to emphasise more on the agronomy practices. Furthermore codes of practice and specifications

utilized for designs are foreign and not always in tandem with the Nigerian settings. It is proposed that irrigation and drainage research in Nigeria will focus primarily on raising overall crop water productivity, mitigating environmental impacts and the dissemination of good, well adapted practices.

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### 4.7 Promote parallel initiatives

Beyond the immediate competence of the FMWR and the RBOs, implementation will need strong support from FMARD, ADPs and State agricultural agencies in the provision of

- irrigation extension services
- mechanisation – adoption of good practice and standards
- improved seed and fertiliser distribution
- expanded credit facilities geared to the term investment requirements of irrigation
- marketing services and marketing chains for irrigated production

### 4.8 Funding

#### 4.8.1 Funding of Irrigation Agencies

All agencies and actors in the field of irrigation will need funding. Initially some funding shall come from the FGN but as the sector matures and profitability improves and incomes for farmers increase, a phasing out of these subsidies is anticipated. Allocating and maintaining realistic budgets to the NIC would be essential as this transition occurs and schemes go through the process of re-design and re-construction for rehabilitation, conversion to gravity and for farmer friendly O&M. Project funding shall include funding for institutional development of the Irrigation Agencies to empower them to take over full responsibility of O&M of the schemes on completion of their development. Only working, economic schemes would be considered at this stage (unless other overriding issues are considered too important). In some cases, where it may be more cost effective to construct, new schemes that have been designed for efficient gravity irrigation and farmer orientated management, would be considered on their merit. All new construction would be carried out this way for the future.

#### 4.8.2 Funding Arrangements:

- Federal Government in collaboration with the State and Local Governments is to fund the rehabilitation and completion of ranked projects (See Action Plan = Annex 1). The estimated total cost for the rehabilitation of the 12 schemes including institutional development and empowerment amounts to ₦15 billion over a period of four years beginning from year 2005.
- For small-scale community-based demand driven projects, the cost-sharing formula shall be: Federal Government – 50%, State Governments – 30%, Local Governments – 15%, and Communities – 5% for the development of such projects.

**ANNEX A**

## The Action Plan for Development

### Introduction

Currently we have a total of 30 projects in the Medium – Term Water Sector Strategy irrigation schemes being handled directly by RBDAs. ROPISIN had ranked 12 schemes for immediate rehabilitation intervention some of which are among the ongoing projects. The total cost for the rehabilitation of these 12 schemes amount to Naira 15,000 million or about $112.8 million which equates to $2,142/ha.this amount includes the cost for modernisation, institutional development and capacity building.

It is recommended that the action plan be considered in two phases:

**Phase 1** (***Pilot Phase) 2005-2006:***

The three schemes to be fully rehabilitated in Phase 1 will run concurrently with the institutional reforms involving the formation of the RBOs, NIC and the IAs/ICs. These schemes shall initiate modernisation techniques as well as capacity building of the WUAs. The schemes are:

- **KRIP I**
  - gravity scheme of 15,000 ha
  - located in the north
  - rehabilitation estimated at N3.5 billion ($26.3 million)
  - institutional development cost at N 875million ($6.7million)
- **LAIP**
  - pumped scheme of 3,850ha
  - located in the south
  - rehabilitation estimated at N2.2 billion ($16.5 million)
  - institutional development cost at N 550 million ($4.15million)
- **BAKOLORI**
  - Gravity scheme of 8,000ha and sprinkler 15,000ha
  - located in the north
  - rehabilitation estimated at N3.5 billion ($26.3 million)
  - institutional development cost at N 875million ($6.7million)

The following on-going new expansion projects shall be fully completed. The schmes shall be reviewed to include capacity building of the WUAs to enable them take responsibility of O&M of the schemes.

**Phase 2 (*Development Phase) 2007-2014:***

The Ranking, policy and strategy shall be reviewed at this stage and those schemes considered viable given priority.

During this phase, the rest of the short listed projects (10) shall be developed and will include the outputs of the modernisation techniques and the institutional reforms carried out in Phase I.

**Key Provisions**

For both phases the following key provisions shall apply:

- Involvement of beneficiaries and the engagement of the private sector shall need to be positively encouraged.
- Institutional reforms must be put in place for effective service delivery.
- Integration of all activities with other aspects of irrigation development such as small scale fadama type development and the SPFS both of which are expected to continue but integrated in an overall development scenario to allow use of common resources in research, extension, credit, markets, etc,
- Finalisation of policies and strategies for both irrigation and agriculture to ensure a co-ordinated rather than competitive approach to both irrigation and agricultural development in Nigeria.

Proposed activities:

- Reform schemes on the based on respective ROPISIN scheme status reports policy guidelines. This shall be done in close collaboration with farmers, existing management staff and others to allow improved technical performance and optimum PIM.
- Simplify operations and adjust pipelines and canals to allow effective and efficient WUA operation.
- Estimate institutional and capacity building requirements, extension needs and in order to effect a transition from outside management to farmer management where possible.
- Prepare detailed cost estimates and tender documents.
- Involve FAO with the supervision of consultants for initial investigations and design works.
- FGN shall budget funds to carry out works estimated at N5.7 billion ($43.2 million)
- Establish pilot projects from 100 to 500 ha to assess the best management style to be adopted.
- Future guidelines for development. shall be based on the merits of both the rehabilitated and new schemes.

## Table A1 Summary of Public Irrigation Schemes for the Medium Term Strategy (2006-2008)

| GOAL | OBJECTIVE | PROJECT CATEGORY | S/N | PROJECT TITLE | COSTS (₦ MILLION) | | | | PHASING (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2006 | 2007 | 2008 | TOTAL | 2006 | 2007 | 2008 |
| To harness efficiently and effectively the nation's water resources in and integrated and sustainable manner to meet present and future needs | To develop irrigable land by additional 25,000 hectares from the current 100,000 hectares | **(A)** Completion of on-going projects | 1 | Kano River Irrigation Project Phase 1 | 3,300.00 | 2,200.00 | 1,212.00 | 6,712.00 | 49.17 | 32.78 | 18.06 |
| | | | 2 | Hadejia Valley Irrigation Project | 2,144.00 | 1,430.00 | 800.00 | 4,374.00 | 49.02 | 32.69 | 18.29 |
| | | | 3 | Kampe Irrigation Project | 1,000.00 | 625.60 | 0.00 | 1,625.60 | 61.52 | 38.48 | 0.00 |
| | | | 4 | Chouchi Irrigation Project | 1,000.00 | 1,000.00 | 0.00 | 2,000.00 | 50.00 | 50.00 | 0.00 |
| | | | 5 | Middle Rima Irrigation Project | 1,500.00 | 0.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 |
| | | | 6 | Oniong Nung Irrigation Project | 300.00 | 170.00 | 0.00 | 470.00 | 63.83 | 36.17 | 0.00 |
| | | | 7 | Imo River Irrigation Project (Ibu) | 100.00 | 0.00 | 0.00 | 100.00 | 100.00 | 0.00 | 0.00 |
| | | | 8 | Gurara Irrigation Project | 2,500.00 | 1090.00 | 0.00 | 3,590.00 | 69.64 | 30.36 | 0.00 |
| | | | 9 | Gari Irrigation Project | 2,500.00 | 2,100.00 | 0.00 | 4,600.00 | 54.35 | 45.65 | 0.00 |
| | | | 10 | Sabke Dam Irrigation Project | 700.00 | 350.00 | 0.00 | 1,050.00 | 66.67 | 33.33 | 0.00 |
| | | | 11 | Shagari Dam Irrigation Project | 2,100.00 | 1,400.00 | 0.00 | 3,500.00 | 60.00 | 40.00 | 0.00 |
| | | | 12 | Niger Valley Irrigation Project | 300.00 | 100.00 | 0.00 | 400.00 | 75.00 | 25.00 | 0.00 |
| | | | 13 | Middle Ogun Irrigation Project | 1,000.00 | 1,000.00 | 1,000.00 | 3,000.00 | 33.33 | 33.33 | 33.33 |
| | | | 14 | Lower Ogun Irrigation Project | 1,000.00 | 1,000.00 | 1,000.00 | 3,000.00 | 33.33 | 33.33 | 33.33 |
| | | | 15 | Bagwai Irrigation Project | 1,000.00 | 500.00 | 459.87 | 1,959.87 | 51.02 | 25.51 | 23.46 |

## Table A1 Summary of Public Irrigation Schemes for the Medium Term Strategy (2006-2008)

| GOAL | OBJECTIVE | PROJECT CATEGORY | S/N | PROJECT TITLE | COSTS (₦ MILLION) | | | | PHASING (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2006 | 2007 | 2008 | TOTAL | 2006 | 2007 | 2008 |
| To harness efficiently and effectively the nation's water resources in and integrated and sustainable manner to meet present and future needs | To develop irrigable land by additional 25,000 hectares from the current 100,000 hectares | **(B)** Rehabilitation of existing projects ( Physical and Institutional) | 16 | Bakolori Irrigation Project | 310.00 | 200.00 | 96.00 | 606.00 | 51.16 | 33.00 | 15.84 |
| | | | 17 | Lower Anambra Irrigation Project | 600.00 | 461.00 | 0.00 | 1,061.00 | 56.55 | 43.45 | 0.00 |
| | | | 18 | Itoikin Irrigation Project | 300.00 | 150.50 | 0.00 | 450.50 | 66.59 | 33.41 | 0.00 |
| | | | 19 | Lake Geriyo Irrigation Project | 270.00 | 200.00 | 0.00 | 470.00 | 57.45 | 42.55 | 0.00 |
| | | | 20 | Jibiya Irrigation Project | 350.00 | 200.00 | 0.00 | 550.00 | 63.64 | 36.36 | 0.00 |
| | | | 21 | Baga Irrigation Scheme | 700.00 | 500.00 | 0.00 | 1,200.00 | 58.33 | 41.67 | 0.00 |
| | | | 22 | Doma Irrigation Project | 300.00 | 190.00 | 0.00 | 490.00 | 61.22 | 38.78 | 0.00 |
| | | | 23 | Tunga Kawo Irrigation Project | 400.00 | 300.00 | 0.00 | 700.00 | 57.14 | 42.86 | 0.00 |
| | | **(C)** Technical assistance and intervention for effective irrigation | 24 | Equipment for Desitlting and Removing Aquatic weeds | 450.00 | 0.00 | 0.00 | 450.00 | 100.00 | 0.00 | 0.00 |
| | | | 25 | Technical Cooperation with IUCN, FAO, etc | 8.00 | 4.00 | 4.00 | 16.00 | 50.00 | 25.00 | 25.00 |
| | | | 26 | Technical Assistance to State Schemes (Bagwai) | 1,000.00 | 950.00 | 0.00 | 1,950.00 | 51.28 | 48.72 | 0.00 |
| | | | 27 | Technical Assistance to State Schemes (Adani) | 500.00 | 400.00 | 120.00 | 1,020.00 | 49.02 | 39.22 | 11.76 |
| | | | 28 | Streamline and reform institutions of the irrigation subsector | 300.00 | 200.00 | 100.00 | 600.00 | 50.00 | 33.33 | 16.67 |
| | | | 29 | Enhance enabling environment for Private Sector Participation | 1,000.00 | 1,000.00 | 1,000.00 | 3,000.00 | 33.33 | 33.33 | 33.33 |
| | | **(D)** Small-scale community-based Irrigation Project | 30 | One model project in each RBDA | 1,200.00 | 1,200.00 | 600.00 | 3,000.00 | 40.00 | 40.00 | 20.00 |

## Annex A2: Ranking of Schemes

### Introduction

During the ROPISIN, the FMWR requested FAO, in preparing the guidelines on irrigation policy and strategy, to also draw up a preliminary ranking of all 62 irrigation schemes to allow FGN to ascertain which schemes shall be considered on a priority basis for future development (initially for rehabilitation and then later for expansion).

The ranking of the public sector irrigation schemes followed completion of the field work and the write up of the ROPISIN. It was a joint exercise carried out by the consultant Enplan, FMWR counterpart staff (the Peer Review Group) and FAO. It is expected that the FMWR will further refine the ranking(s) to take into account FGN priorities and other factors beyond the scope of the ROPISIN exercise.

Criteria for the ranking were developed[2] and were applied to the schemes on an standardised basis for both the RBDA and zonal areas. The table below summarises the results of this exercise. Subsequently a ranking on a national basis was carried out. For the latter, the basic criteria were used for the baseline but further external factors were then considered by the teams. These included field knowledge of the sites and the local conditions, experience of the farmers and local staff with irrigation, proximity to urban centres (for marketing and input supplies), potential for expansion, change from pumping to gravity (unless already under gravity irrigation), participatory management (PIM and WUA status were considered) and economic and political factors.

The basic criteria for the RBDA and zonal ranking were:

- Technical performance. This was given a weighting of 40%, including present status, water delivery means (pumping or gravity) and efficiency and rehabilitation required. Present status and rehabilitation required were given most weight (up to 12.5% each was possible).

- Agricultural performance. This was given a weighting of 20%, including interest and numbers of farmers, crops grown, inputs, mechanisation, soil status, crop water requirements and supplementary benefits.

- Socio-economic performance. This was given a weighting of 15%, including pastoralist/farmer conflicts, water user groups status, privatisation prospects, cost of delivery and the status of cost recovery, land tenure and potential for improved scheme governance.

- Marketing performance. This was given a weighting of 15% including physical (access and distance to market and for purchasing inputs.

- Environmental performance. This was given a weighting of 10% including salinity, water logging, pests and diseases, weed problems and erosion.

For the national ranking, the schemes were viewed for economic rather than rural development prospects.

[2] Approved by the Minister of Water Resources October 2004.

**Table A2: Results of the RBDA and Zonal Ranking**

| Zone | RBDA | Scheme | Ranking | |
|---|---|---|---|---|
| | | | RBDA | Zone |
| North East | Chad Basin | Baga Polder | 1 | 3 |
| | | South Chad | 2 | 6 |
| | Hadejia Jama'are | KRIP I | 1 | 1 |
| | | Hadejia Valley | 2 | 2 |
| | | Katagum | 3 | 4 |
| | | KRIP II | 4 | 5 |
| | | Jama'are Valley | 5 | 7 |
| North West | Sokoto Rima | Bakolori | 1 | 1 |
| | | Middle Rima (Goronyo) | 2 | 4 |
| | | Jibiya | 3 | 5 |
| | | Zauro Polder | 4 | 9 |
| | Lower Niger | Kampe | 1 | 3 |
| | | Oke Oyi | 2 | 7 |
| | | Tada Shonga | 3 | 8 |
| | | Geriyan | 4 | 10 |
| | | Erin-Ile/Ajase | 5 | 12 |
| | | Kaima | 6 | 14 |
| | Upper Niger | Tunga Kawo | 1 | 2 |
| | | Swashi | 2 | 6 |
| | | Suleja (Tafa) | 3 | 11 |
| | | Galma | 4 | 13 |
| Central | Upper Benue | Lake Geriyo | 1 | 1 |
| | | Dadin Kowa | 2 | 2 |
| | | Cham | 3 | 6 |
| | | Waya | 4 | 8 |
| | | Lower Taraba | 5 | 10 |
| | Lower Benue | Doma | 1 | 3 |
| | | Katsina Ala | 2 | 4 |
| | | Longkat | 3 | 5 |
| | | Bokkos | 4 | 7 |
| | | Ofarachi | 5 | 9 |
| | | Dep River | 6 | 11 |
| | | Naka | 7 | 12 |
| | | Ejule-Ojebe | 8 | 13 |
| | | Makurdi | 9 | 14 |
| | | Jato Aka | 10 | 15 |
| South West | Ogun Oshun | Itoikin | 1 | 1 |
| | | Middle Ogun | 2 | 2 |
| | | Lower Ogun | 3 | 3 |
| | | Sepeteri | 4 | 6 |
| | | Oke Odan | 5 | 7 |
| | | Ofiki | 6 | 9 |
| | | Iwo | 7 | 13 |
| | Benin Owena | Ilushi-Ega-Otta | 1 | 4 |
| | | Ilah Ebuh | 2 | 5 |
| | | Ikere-Ogbese | 3 | 8 |
| | | Ukhun-Erha | 4 | 10 |
| | | Obayantor | 5 | 11 |
| | | Erusu | 6 | 12 |
| South East | Anambra-Imo | Lower Anambra | 1 | 1 |
| | | Imo (Igwu & Ibu) | 2 | 5 |
| | | Isi Uzo | 3 | 4 |
| | Cross River | Onion/Numg | 1 | 2 |
| | | Ogoja | 2 | 7 |
| | | Abak | 3 | 3 |
| | | Obudu | 4 | 8 |
| | | Obubra | 5 | 11 |
| | | Ijega Yala | 6 | 13 |
| | Niger Delta | Isampou | 1 | 6 |
| | | Perimabiri | 2 | 9 |
| | | Kpong | 3 | 10 |
| | | Kolo | 4 | 12 |

## Annex B

## INSTITUTIONAL REFORM

These proposed Instiutional Reforms have been formulated in line with the Water Resources policy and in line with the Draft Irrigation policy

### The Organization River Basin Commission
### Overview

Ongoing economic reform anticipates the creation eight River Basin Organizations (RBO) along hydrological boundaries. These RBOs shall be a partnership between the governments and the communities. These will be established to give effect to sets of Agreements to be entered into by the governments within the hydrological boundaries of the basins. The purpose of the Agreements shall seek to promote and co-ordinate effective planning and management for the equitable, efficient and sustainable use of the water, land and other environmental resources of the various basins. They would reflect governments' commitment to integrated catchments management, covering the watersheds of the river basin.

The RBO Reform is in recognition of the fact that no one government or group of people is able to deal with the emerging water resources and associated natural resource management problems and that the existing management arrangements were not able to cope with them. The involvement of the community is recognition of the fact that the task was not one that governments could fulfil on their own. Management of the River System and sharing water between the Basin states would remain an essential part of the current arrangement.

The Basin Agreement which would be the main working documents of the Commissions would be signed by the governments of the Federation, the riparian States in the Basin and could be revised from time to time to reflect changing circumstances. There could thus be up to six formal partner governments in the Agreement, with many departments and agencies involved.

Figure 1 shows the overall governance of the Agreement, i.e. the management structure set up to help achieve its purpose.

### Key elements to be specified in the Agreement are:

- The Basin Ministerial Council, the *organizations* decision-making forum
- The Basin Commission, the executive arm of the *organization* and an *arm of FMWR* which advises the Council and carries out its decisions.
- The Stakeholders Advisory Committee, which provides the Ministerial Council with advice and provides a two-way communication channel between the Council and the community.

### Ministerial Council

The Ministerial Council and the Commission would have representatives from each of the partner governments. The Stakeholder Advisory Committee shall represent the Basin's wider community, and its chairperson shall attend meetings of both the Ministerial Council and the Commission. To make Commission lean but muscular it

shall also be advised by a number of high-level Project Boards and Committees that would advise and be supported by the Office of the Commission.

The strategic plan and philosophical framework for achieving the Agreement shall be developed into a 3 yearly Natural Resources Management Plan and submitted for approval by the Ministerial Council. The Plan shall provide the broad charter for a community-government partnership to develop control structures and plans for the integrated management of the Basin's water, land and other environmental resources on a catchment basis. The Strategy shall provides a planning, evaluation and reporting framework for the Natural Resources Management, and covers all government and community investment for sustainable natural resources management in the Basin. The Natural Resources Management Strategy would be the foundation of the Commission's basin wide planning processes for natural resource management.

The complexity of managing water resources spans over the jurisdiction of more than one government. There may therefore be a number of Other Inter-Jurisdictional Agreements in the Basins which would continue to be operated, with continuity provided by inviting the government ministers and officers involved with them to be involved with the Basin *Organizations*.

The Commission's Secretariat and Offices shall provide access to a wide range of technical, educational and promotional material relating to the work carried out by the Commission to enable informed contribution to be made by the public.

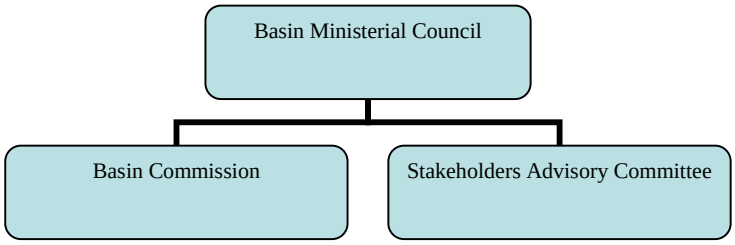


Figure 1 Governance of the Basin Organization

**The Basin Commission**

The Commission shall be the executive arm of the FMWR and of the Basin Ministerial Council and shall be responsible for:

- managing specific lake and river system of the 8 hydrological basins, and
- advising the Ministerial Council on matters related to the use of the water, land and other environmental resources of the Basin.

The Commission shall be an autonomous organization responsible to the governments represented on the Ministerial Council as well as to the Council itself. It shall however be a statutory body of the Federal government.

The main functions of the Commission shall be:

- to advise the Ministerial Council in relation to the planning, development and management of the Basin's natural resources;
- to assist Council in developing measures for the equitable, efficient and sustainable use of the Basin's natural resources;
- to coordinate the implementation of, or where directed by Council to implement, those measures;
- to give effect to any policy or decision of the Ministerial Council; and
- to equitably and efficiently manage and distribute the water resources of the River basin in accordance with the Basin Agreement to obtain the highest achievable quality and efficiency of use of such resources.

The Commissions shall therefore undertake works and measures at the direction of their Ministerial Council, and also in coordinating the efforts of the government partners. It shall have the mandate to initiate, support and evaluate integrated natural resources management across the Basin.

The Commissions shall each comprise of an independent Chairman, two representatives from each Contracting Government and a representative of the FMWR. Apart from the Chairman, at least one each of the governments' representative shall be normally chief executives and senior executives of the agencies responsible for management of land, water and environmental resources. The chairperson of the Stakeholder Advisory Committee shall also attend all Commission meetings. The Commission would be required to normally meet at least four times a year, with the meetings being held predominantly in rotation among at the State Headquarters of the partner governments within the Basin.

The Commissions shall work cooperatively with the partner governments, committees and Stakeholder/community groups to develop and implement policies and programs aimed at the integrated management of their catchment as well as managing and distributing the water of their Rivers and lakes in accordance with their subsisting Agreement. This cooperative approach would reflect the importance placed on Government-community partnerships and brings to participants and end-users the benefit of shared concerns and expertise, jointly developed and integrated solutions, and avoids duplication of effort.

The Office of the Basin Commission shall provide the Commission with support services necessary for administering the Basin Agreement and helping to deliver the Commission's programs. This shall include support for technical matters and policy formulation, and secretariat and administrative services to the Ministerial Council, Commission, Project Boards and the various committees advising the Commission.

The Office shall comprise of the following functional areas.

**River Water Branch:**

- shall be the unit responsible for managing the Commission's water business in accordance with the Basin Agreement;
- shall be responsible for providing States with their shares of water under the Agreement and for the multipurpose headworks and other assets including salt interception schemes.

**Natural Resources Branch:**

- shall coordinate the development and facilitate the implementation of Commission policies, strategies and investigations and basin-wide planning;
- shall administer other statutory functions related to the Basin Agreement
- provides secretariat and administrative support to project boards and Commission working groups

**Secretariat:**

- shall provide secretariat services to the Ministerial Council, Commission and high-level committees,
- shall provide secretariat and administrative services to the Stakeholders Advisory Committee.

**Corporate Unit:**

- to manage the Commission's budget and finances
- to manage the Commission's human resources and business administration

**The Stakeholders Advisory Committee**

The Stakeholders Advisory Committee (SAC) of the Basin Ministerial Council shall be a formally appointed group of people with a wide range of expertise and with networks throughout the Basin. The role of the SAC shall be to advise the Ministerial Council, from a community viewpoint, on critical natural resource management issues.

Their terms of reference (TOR) shall include:

1. To advise the Ministerial Council on:

    - the natural resource management issues referred to the Committee by the Ministerial Council; and
    - the full range of views of Basin communities on natural resource management issues of significance within the Basin.

2. To assist the Basin Commission by disseminating within Basin communities, Ministerial Council's decisions in a way that promotes clear understanding of their context and rationale, and enhances their ownership and adoption.
3. To participate, as directed by Ministerial Council, in Basin community engagement programs and provide Ministerial Council with advice on the effectiveness of that engagement.
4. To participate, as directed by Ministerial Council, in policy development processes of the Commission and Ministerial Council.

The committee shall compose of not more than 20 members plus their independently appointed Chairman. Members of the SAC shall be appointed for four year terms and shall be selected on the basis of their skills, expertise and networks. In addition, members shall be chosen so as

- to achieve an agreed jurisdictional balance

- for their expertise in six key sectors - one member for each – irrigation, urban water supply, fishery/livestock farming, environment, forestry and local government

- to provide two indigenous members.

The SAC shall be required to meet four times a year around the Basin. It may also meet jointly with the Council annually and periodically holds joint meetings or workshops with the Commission. SAC members may be appointed to Commission working groups and committees whenever a community representative is required.

The SAC would be supported by a secretariat based at the office of the Basin Commission. The Committee in addition to community awareness to increase the role of the community in the development and implementation of natural resource management strategies to resolve the issues facing the Basin, it shall also help to provide regional and Basin-wide perspectives on these issues. The SAC shall be required to convene community forums to canvas a wide range of views from the Basin communities on topical issues. Extensive advice arising from these, and from the SAC's own business processes, shall be provided to Council.