



REPUBLIC OF GHANA

# NATIONAL IRRIGATION POLICY, STRATEGIES AND REGULATORY MEASURES

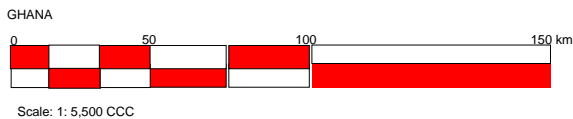
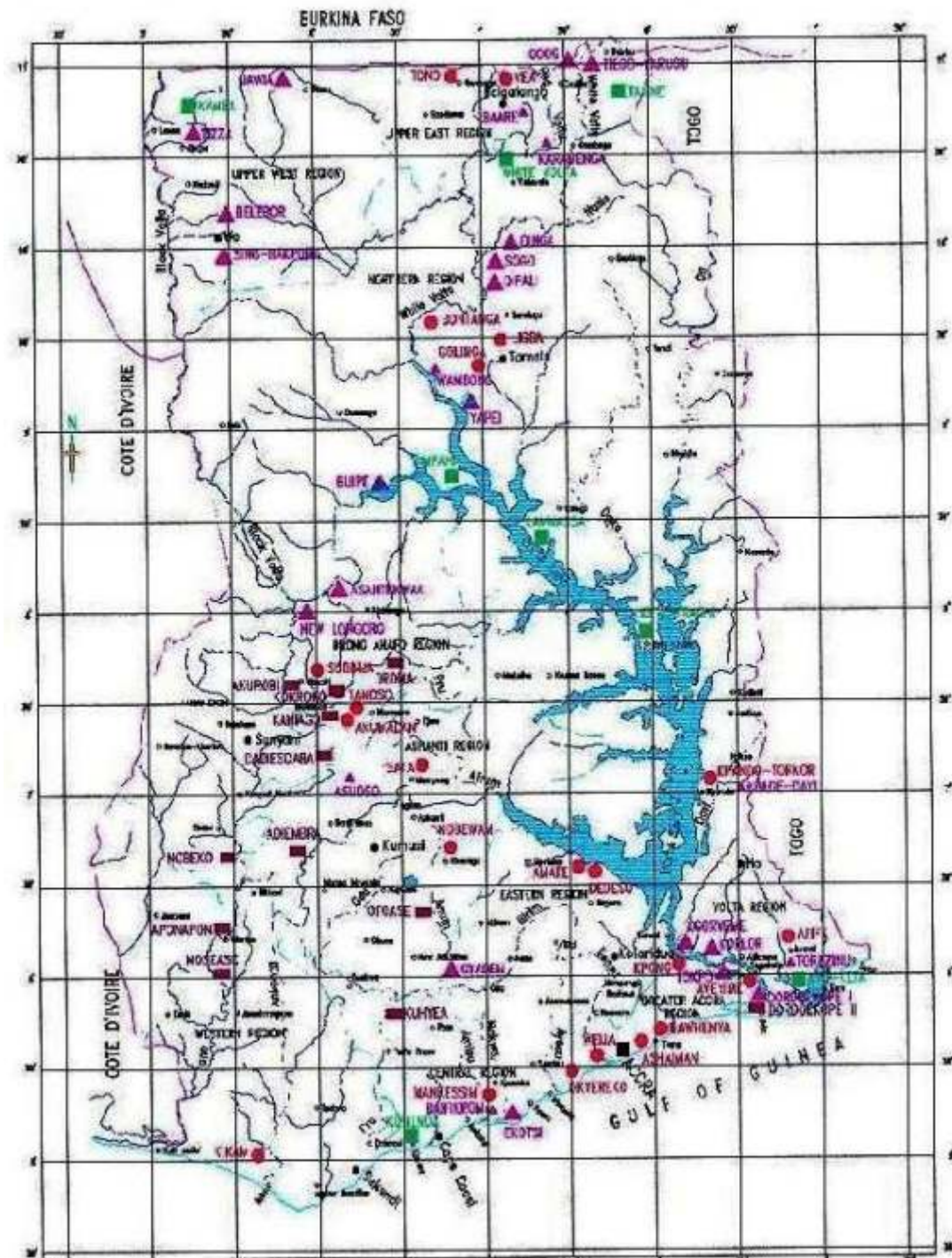


MINISTRY OF FOOD AND AGRICULTURE



GHANA IRRIGATION  
DEVELOPMENT AUTHORITY

# NATIONAL IRRIGATION POLICY, STRATEGIES AND REGULATORY MEASURES



**KEY TO SCHEMES**

- EXISTING PROJECTS
- ▲ SSIDP I
- SSIDP II
- PRE-FEASIBILITY STUDIES

## GHANA IRRIGATION SCHEMES

GOVERNMENT OF GHANA  
MINISTRY OF FOOD AND AGRICULTURE  
GHANA IRRIGATION DEVELOPMENT AUTHORITY  
ACCRA - GHANA

FOOD AND AGRICULTURE  
ORGANISATION OF THE  
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ACCRA - GHANA



Copyright:© Ministry of Food and Agriculture (MOFA), Ghana  
Published by Ghana Irrigation Development Authority, Ghana  
MOFA - 2011

ISBN:016031101213

Editing: Mr. Daniel Lamptey, Dr Ben Nyamdi, Mr. Asare Minta

Layout/Printing: Information Support Unit/Directorate of Agriculture  
Extension Service, MOFA - 2011.

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## ACKNOWLEDGMENTS

The Ghana Irrigation Development Authority (GIDA) of the Ministry of Food and Agriculture (MoFA) acknowledges the contribution and support of many MoFA staff towards the preparation of this Irrigation Policy and Strategies document. Our special thanks go to all technical staff of GIDA who helped organize workshops and facilitate roundtable discussions and finally prepared this document.



## FOREWORD

It has been recognized, the world over, that any country that depends on agricultural production as basis for industrial development is most likely to fail if irrigation is not part of the agricultural development plan. Indeed in some parts of the world, irrigation remains the dividing line between abundant food and no food at all.

Given this, one finds it difficult to understand why Ghana has, since independence, been without a consistent and comprehensive policy to guide its irrigation development and expansion. Irrigation development has been dictated and affected by ad-hoc government agricultural strategies and programmes. Consequently, it became necessary for the development of a workable irrigation policy which is a pre-requisite for the realization and sustenance of agricultural development in Ghana.

The irrigation policy is the outcome of a consultative process, which began with a national forum on irrigation development and management in 2004. There were many stakeholder validation workshops to deliberate on findings and recommendations by teams of local and international consultants. The inputs of these workshops were consolidated in a final draft that was reviewed by the Irrigation Policy Project Steering Committee in May 2007. The first submission to Cabinet was in December 2007. Cabinet requested additional review by identified stakeholders after which the document was resubmitted in January 2008. After the election of December 2008, the irrigation policy document was again submitted to Cabinet in May 2010. On June 30<sup>th</sup> 2010, Cabinet approved the policy.

This policy addresses the problems, constraints and opportunities, which cut across the whole irrigation sub-sector; and specifically for informal, formal and commercial irrigation.

It will be complemented with a strategic framework to be called National Irrigation Development Master Plan (NIDMAP) to specify how the strategies in this document will be implemented in order to put an area of 500,000ha under irrigation in the medium term.

Thus the policy is designed to open up the investment space for intensified and diversified irrigated crop production in Ghana where there is clear comparative and competitive advantage. It will essentially allow more involvement of farmers in irrigation facility management, operation and maintenance. It aims at effecting improved operation and maintenance, cost recovery and ultimately improve the performance of the irrigation sub-sector. This will make it possible for Government to reduce its expenditure on irrigation projects development, operation and maintenance while ensuring sustainable management of both the facilities and water resources.

It is my hope that with the implementation of the proposed strategies, Ghana can look forward to overcoming the challenges of the irrigation sub-sector especially at this time when climate change and its effects on rainfall patterns is making it increasingly clear that irrigation is key to the agricultural development agenda of Ghana



HON. KWESI AHOI  
MINISTER FOR FOOD AND AGRICULTURE

## Acronyms

AAGDS	-	Accelerated Agricultural Growth and Development Strategy
AfDB	-	African Development Bank
AgSSIP	-	Agriculture Sector Services Improvement Project
CBOs	-	Community Based Organizations
CIDA	-	Canadian International Development Agency
CSIR	-	Council for Scientific and Industrial Research
CU	-	Co-operative Union
CWSA	-	Community Water and Sanitation Agency
DAs	-	District Assemblies
DCE	-	Deputy Chief Executive
EHA	-	Environmental Health Assessment
EIA	-	Environmental Impact Assessment
EPA	-	Environmental Protection Agency
FAO	-	Food and Agriculture Organization
FAPIM	-	Farmers' Participation in Irrigation Management
FAGE	-	Federation of Associations of Ghanaian Exporters
GDP	-	Gross Domestic Product
GIDA	-	Ghana Irrigation Development Authority
GoG	-	Government of Ghana
GPRS	-	Ghana/Growth Poverty Reduction Strategy
GTZ	-	German Agency for Technical Co-operation
GWCL	-	Ghana Water Company Limited
IFAD	-	International Fund for Agricultural Development
IWMI	-	International Water Management Institute
IWRM	-	Integrated Water Resources Management
JICA	-	Japan International Co-operation Agency
KNUST	-	Kwame Nkrumah University of Science and Technology
LAC	-	Land Allocation Committee
LC	-	Lands Commission
LI	-	Legislative Instrument
MDAs	-	Ministries, Departments and Agencies
MMDAs	-	Metropolitan, Municipal and District Assemblies
MDGs	-	Millennium Development Goals
MLG,&RD	-	Ministry of Local Government and Rural Development
MoE	-	Ministry of Education
MoFA	-	Ministry of Food and Agriculture
MEST	-	Ministry of Environment, Science and Technology
MoFEP	-	Ministry of Finance and Economic Planning
MOH	-	Ministry of Health
MoTI	-	Ministry of Trade and Industry
MoWCA	-	Ministry of Women and Children Affairs
MWR, W&H	-	Ministry of Water Resources, Works and Housing
NDPC	-	National Development Planning Commission
NEPAD	-	New Partnership for African Development



NGOs	-	Non-Governmental Organizations
NIDMAP	-	National Irrigation Development Master Plan
NLCD	-	National Liberation Council Decree
NWP	-	National Water Policy
OMR	-	Operations, Maintenance and Repairs
SEA	-	Strategic Environmental Assessment
SFIP	-	Small Farms Irrigation Project
SSIDP	-	Small Scale Irrigation Development Project
SMCD	-	Supreme Military Council Decree
UCC	-	University of Cape Coast
UG	-	University of Ghana
UDS	-	University of Development Studies
VRA	-	Volta River Authority
WHO	-	World Health Organisation
WIAD	-	Women in Agricultural Development
WRC	-	Water Resources Commission
WUA	-	Water Users Association



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***Annex 1: Policy Matrix***

***Annex 2: Irrigation Policy and Development Path***



## EXECUTIVE SUMMARY

Ghana's irrigation policy (and the strategy for its implementation) is designed to open up the investment space for intensified and diversified irrigated crop production in Ghana where there is clear comparative advantage. The policy is designed to accomplish this by addressing four key 'problem' areas concerning the formal, informal and commercial irrigated sub-sectors that have been identified during an extensive consultative review. These problems are:

- (a) Low agricultural productivity and slow rates of growth
- (b) Constrained socio-economic engagement with land and water resources
- (c) Environmental degradation associated with irrigated production
- (d) Lack of irrigation support services.

Four policy objectives or 'thrusts' are proposed to address these with the view to achieving accelerated and sustained irrigation development in Ghana.

- ▮ **Policy Thrust A. Performance and Growth.** Realize the productive capacity of existing assets and respond to new demands for irrigated production through a mix of well coordinated public and private initiatives
- ▮ **Policy Thrust B. Socio-Economic Inclusion.** Remove constraints to a balanced socio-economic engagement with land and water resources
- ▮ **Policy Thrust C. Responsible Production:** Raise the environmental performance of all types of irrigation and related agricultural practice.
- ▮ **Policy Thrust D. Enhanced Services.** Extend cost-effective, demand driven irrigation services to public and private irrigators.

The strategy for implementing this set of policy objectives is to transform GIDA) into a pro-active promoter of both public and private irrigation development with much more effective, functional links within the agriculture sector. The key collaborating agencies outside the Ministry of Food and (MoFA) are WRC, EPA and local government but equally important are effective links with NGOs and private sector service providers. An essential component of this transformation is the establishment of revised regulatory provisions to clarify liabilities and responsibilities among public and private institutions in Ghana.

The Policy is predicated on a commitment to decentralization of irrigation services and private sector participation from individual farmers to commercial operators. It is supported by comprehensive *diagnostic studies* summarized in its accompanying synthesis report.

***Irrigation Policy Goal:*** Sustainable growth and enhanced performance of irrigation contributing fully to the goals of the Ghanaian agriculture sector.

***Policy Targets:*** National food security; intensified and diversified production of agricultural commodities; increased livelihood options; optimum natural resource use; reduced negative environmental impacts; expanded investment space for irrigated production.

***Policy Beneficiaries:*** The Ghanaian economy as a whole. All existing and potential irrigators and related farmer and farmer-based organizations, including private sector service providers.



# **CHAPTER 1**

## **THE NEED FOR AN IRRIGATION POLICY**

### 1.1 Rationale for Policy Development - the Drivers of Change

Ghana's growing and urbanizing populations together with changing dietary preferences are calling for a more diverse range of food and industrial crops that could be grown under irrigated conditions to obtain higher quantity and quality. At present, much of this demand is translating into commercial food imports. The principal question for the irrigated sub-sector is whether it can:

- (a) begin to make a dent in Ghana's commercial food import bill in the crops for which Ghana has comparative advantage
- (b) maintain the stream of public goods generated by public sector investment and
- (c) offer informal irrigators more opportunities to develop livelihoods based on irrigated production.

Ghana's development agenda is also predicated on accelerating agricultural growth and reducing poverty. Irrigation development is driven presently by the Accelerated Agricultural Growth and Development Strategy (AAGDS) and made operational under the Agriculture Sector Services Improvement Project (AgSSIP). The strategy recognizes the need for the preparation of comprehensive policy for irrigation to guide development in the sub-sector. The AAGDS has specified a strengthened role for GIDA, the role of irrigation related research and technology transfer and priority targets in small and micro-scale irrigation schemes.

More fundamentally, the Development Agenda for Ghana is driven by the programme of the National Development Planning Commission (NDPC) and the Ghana Poverty Reduction Strategy (GPRS I and II), which is based on Ghana's commitments to the Millennium Development Goals (MDGs) and New Partnership for Africa's Development (NEPAD), among others. Ghana's Poverty Reduction Strategy was launched in 2003. The strategy recognized water in its various occurrences, uses, and management systems as an essential component of human development, also as a crosscutting factor in the current development priorities of the country. The provision of water is highlighted in the relevant section of the strategy as, "Increasing access to water is key to achieving health and sustained poverty reduction. The major way of using water to reduce poverty is through the development of irrigation". The Strategic Environmental Assessment (SEA) of the GPRS describes water "as a crosscutting thematic issue" and highly relevant to improving the livelihood dimension of Ghanaians.

Ghana is endowed with freshwater resources and shares a number of river basins with neighbouring countries. Ghana is also a signatory to a number of international agreements that place obligations in the management and uses of water resources and the environment.



In recent years, major efforts have been placed in the development of a comprehensive *National Water Policy* (NWP) for Ghana. The policy recognises water as a finite resource that requires an integrated approach to ensure its sustainable development and utilization. It therefore provides an overall framework for the sustainable development of the water resources of Ghana, based on the principles of Integrated Water Resources Management (IWRM) and recognises the various cross-sectoral issues related to water use and the role of agricultural water management in the country. It is the understanding of the National Irrigation Policy to provide the necessary details to support the Water for Food Security policy objective of the National Water Policy.

## 1.2 Institutional and Regulatory Framework

Implementing any policy reform requires strong, well-focussed institutions. The institutional landscape with respect to irrigation development in Ghana is not sufficiently structured resulting in unclear mandates and responsibilities. Irrigation service capacity in the public and private sector is not adequate to cope with the planning, design, construction, operation and maintenance and regulation of the sub-sector. A new institutional framework is proposed as part of this policy to deliver comprehensive irrigation support services.

## 1.3 The Structure of the Irrigation

### Sector in Ghana

The policy recognizes three principal categories of irrigation in Ghana with their specific opportunities and constraints:

- (a) Informal [smallholder] irrigation,
- (b) Formal irrigation, and
- (c) Large Scale Commercial Irrigation.

**1.3.1 Informal Irrigation.** This may be defined as irrigation practised by individual who cultivates an area of up to about 0.5ha or more by using simple structures and equipment for water storage, conveyance and distribution. Capital investments are relatively very small and are provided from the farmer's own resources. Currently, informal irrigators that do not depend on public infrastructure for their water supplies dominate

**Informal Irrigation** comprises traditional and community initiated schemes, which are typified by the cultivation of about 2,000ha of shallots in the Southeastern coastline of Ghana, informal irrigation around the hundreds of small reservoirs in the North, informal irrigators cultivation in inland valleys, groundwater irrigation e.g. near Bawku and irrigated urban and periurban agriculture. Although there is little data on the overall extent of informal irrigation in the country, it was established that around Kumasi alone, there are at least 12,700 smallholders irrigating more than 11,900 ha in the dry season, which is more than the area currently functioning under formal irrigation in the whole of the country. A particular concern affecting many urban and peri-urban farmers is the lack of reliable land tenure and safe water sources in and around the cities.

the bulk of irrigated output in Ghana. In most cases, manual fetching of water with watering cans and buckets is dominant, while motorized pumps and hoses are also used along the streams and reservoirs. This subsector has been neglected in the past although it is larger than the formal one (see Box). Lack of recognition resulted in typical constraints, such as limited access to credit and tenure insecurity. As a consequence there is hesitation to invest in infrastructure.



**Informal Irrigation Type**

**1.3.2 Formal Irrigation.** Formal irrigation may be defined as one that is reliant on some form of permanent irrigation infrastructure funded by the public sector. The development of formal irrigation schemes in Ghana dates back to 1960s. Under the First Republic (1957-1966), studies in existing water bodies that identified an estimated area of 500,000ha suitable for irrigation was undertaken. Some irrigation schemes,



**Formal Irrigation system**

including those at Dawhenya and Ashaiman and sugar-cane cultivation under irrigation at Komenda and Asutsuare for sugar production were initiated and implemented.

During the era of the National Redemption Council, the Dawhenya Scheme was completed while others at Afife, Mankessim, Okyereko, Tono and Veve were initiated. The Afife and Bontanga Schemes were completed and commissioned under the Provisional National Defence Council (PNDC).

By 2003, GIDA had 22 irrigation schemes under its jurisdiction covering about 14,700 ha of which 60% were developed and about 9,000ha actually put under irrigation. In many schemes the rates of utilization are low due to poor operation and maintenance of the facilities. The Government plans to add a total irrigable area of 500,000ha or more.

### ***1.3.3 Large Scale Commercial Irrigation.***

This category of irrigation falls actually under both formal and informal sub-sectors. Large scale commercial irrigation is formal when Government provides the headworks, conveyance and primary distribution infrastructure, while the private investor provides secondary distribution and water application machinery and equipment.



**A Canal from large scale dam**

On the other hand, under the informal subsector, the headworks and the rest of the infrastructure machinery, equipment are provided by the private investor. Large scale commercial irrigation is usually export oriented and comprises farm size of between 25ha and 1,000ha or more. High value fruits and vegetables are usually the main crops cultivated.



## CHAPTER 2

### SPECIFIC PROBLEMS ADDRESSED BY THE POLICY

Ghana's experience with irrigation is limited and appears to be affected by shifting cultivation, whilst irrigation requires stable farmsteads and other farm inputs to cultivate regularly. High infrastructural costs involved in developing irrigation have limited its expansion. In addition, irrigation development requires long lead times in terms of assembling resource inventories, planning, design, construction and training of farmers to adapt to irrigation as a way of life. The absence of a logical follow-up of earlier studies on the irrigation potential in the country to produce a national irrigation development plan and a workable policy framework for the implementation of such a plan has been a drawback. Therefore it would appear that most of the projects constructed in the 1970s and thereafter were based on recommendations of individual studies rather than from a well-planned strategy or programme.

A wide range of constraints on successful, sustainable irrigation has in fact been identified in the stakeholder fora during preparation of this policy. Notwithstanding a degree of overlapping and inter-linkages, they can be clustered as;

- (a) Low agricultural productivity and slow rates of growth
- (b) Constrained socio-economic engagement with land and water resources
- (c) Environmental degradation associated with irrigated production
- (d) Lack of irrigation support services.

#### 2.1 Low Agricultural Productivity and Slow Rates of Growth

The irrigated sector is not performing to expectation, despite a firm commitment from government since the 1960's. Formal public schemes are operating at approximately half their design capacity (low yield/low cropping intensity) and the informal sector is not recognized and serviced sufficiently to contribute at full potential. One major factor in formal irrigation schemes is poor operation and maintenance linked to inadequate cost recovery and insufficient attention given to post-harvest processing and marketing strategies. Unsold produce and unamortized debt compromise a farmer's ability to finance the next season's production. As a consequence, the depreciation on public assets is far too high and when taken with the associated loss of human skills, the costs of rehabilitation and modernization become prohibitively un-economic. The high capital costs are typical of Sub-Saharan Africa as a whole due to high costs of social connectivity; the use of expensive planning and design service and limited economies of scale.

For the informal sub-sector, expensive, untimely, inappropriate and inaccessible credit products coupled with limited risk assessment capacity among formal credit service providers sets a severe limit on small-scale private initiatives. Limited tenure security is another key issue especially in urban and peri-urban areas.

Clearly there is a role for much more consistent approach to both public and private irrigation development in which both public and private agencies can participate within an enhanced institutional framework and under conditions of improved information flows, technology transfer, economic incentives and financial services.

Public supply initiatives will still be important in providing critical public services to accelerated growth to obtain a balanced and much more responsive sub-sector structure, but this can only accelerate and be sustained with much more attention to the 'pull factors' – the factors that generate demand for irrigated production and irrigation services.

## **2.2 Constrained Socio-Economic Engagement with Land and Water Resources**

Vital socio-economic engagement with land and water is inhibited by the existing set of policies, enabling legislation and supporting regulations. Water use efficiency definitions, criteria and objectives along with definitions of customary rights are unclear yet both are of profound importance when allocating scarce water in a way that helps with each of economic growth, poverty alleviation and environmental sustainability. Equally, land tenure arrangements especially in informal irrigation do not encourage responsible management of land while denying an obvious source of collateral for seasonal and other credits.



Irrigation water also serves domestic needs

Formal irrigation has been very much supply driven with little regard paid to stakeholder awareness and aspirations. This has become particularly apparent in relation to water user associations that are currently established under Cooperative law. While this is pragmatic where no alternative is available, it is less than perfect as i) statutory processes such as formal audits and the issue of shares may be more complicated than required; and ii) the desirability of maintaining voluntary memberships of cooperatives are lost when common public infrastructure justifies forced membership of user organisations.

Irrigation habitually fails to take into consideration existing imbalances between men and women's ownership rights, division of labour and incomes. Water resource development programmes have proven detrimental to women's land rights and, therefore, to sustainable management and use of water.

## 2.3 Environmental Degradation Associated with Irrigated Production

Irrigated agriculture's environmental 'footprint' in Ghana is no larger than that of any other sub-Saharan country, but concentration of intensive agriculture in a relatively narrow and densely populated coastal margin will exacerbate degradation of land and water resources. The management of agricultural chemicals and drainage across irrigation schemes will be of crucial importance in relieving these pressures and maintaining the productive services of the natural resource base. This is as much an economic opportunity as an environmental imperative. Also human health has to be considered due to water-related diseases like malaria and as some parts of the informal sector have only access to marginal quality water for irrigation.

## 2.4 Lack of Irrigation Support Services.

Institutional mandates on irrigation development are unclear, especially in the areas of informal and commercial irrigation. This is coupled with unclear water service and allocation arrangements associated with low awareness and unclear ownership structures lead to low service charges collection rates and hence unsustainable service delivery. A glaring example of this is the fact that no agency accepts responsibility for training in on-farm water management and farming system decision making.

There seems to be a pervading lack of awareness of either the opportunities or the challenges that irrigation offers. Similarly, there seems to be no conception that with rights also come responsibilities. Combined with lack of planning and monitoring information, limiting inter-alia, institutional project ranking/programming skills; assessments of local resource endowments; excessively optimistic feasibility studies and assumptions regarding farmer skills and aspirations.

Unresponsive research/extension linkages result in package based extension and severe limitations on the intrinsic advantages of irrigation as a facilitator of increased choice (a very important issue given Ghana's likely competitive advantage with respect to high value export crops, or crops with high added value potential).

GIDA's limited human and financial resources have severely compromised the extent and quality of delivery while further constraining both the development and productivity of the formal sub-sector. Of particular concern is GIDA's predominantly engineering bias as compared with the social mobilisation and agronomic skills necessary for the sustainable and profitable operation and maintenance of the infrastructure.



## CHAPTER 3

### THE POLICY

Four major policy objectives or 'thrusts', goals, targets and beneficiaries are proposed to remove existing constraints and achieve accelerated and sustained irrigation development in Ghana. These are:

**(a) Thrusts/Objectives**

- i. Performance and Growth.
- ii. Socio-Economic Inclusion
- iii. Responsible Production.
- iv. Enhanced Services.

**(b) Goal**

The Irrigation Policy Goal is: “To achieve sustainable growth and enhanced performance of irrigation contributing fully to the goals of the Ghanaian agriculture sector” as outlined in the Growth and Poverty Reduction Strategy (GPRS I & II)

**c) Targets**

The specific Targets of the policy are: national food security; intensified and diversified production of agricultural commodities; increased livelihood options; optimum natural resource use; reduced negative environmental impacts and expanded investment space for irrigated production.

**(d) Beneficiaries**

The Policy Beneficiaries will be the Ghanaian economy as a whole, but more specifically, the Policy is designed to improve the livelihood of all existing and potential part- and full-time irrigators and related farmer and farmer-based organizations. The Policy also ensures that private sector service providers will be given new opportunities to perform.

#### 3.1 Performance and Growth

Accelerating and sustaining growth in Ghana's irrigated production will only be achieved by realizing the productive capacity of the informal sector and existing public and private assets and responding to new demands for irrigated production. This will need to be done through a mix of well-coordinated public and private initiatives.

Specific sub-objectives are:

- (a) To raise productivity of agricultural water for irrigation, livestock watering and aquaculture.

- (b) To enhance production potential of ongoing irrigation activities
- (c) To develop new irrigation areas according to demand and feasibility
- (d) To establish appropriate funding mechanisms for public irrigation
- (e) To increase private sector investment in irrigation

### 3.2 Socio-Economic Inclusion

The current arrangements governing access to land and water resources inhibit long-term, productive engagement, particularly with respect to women. Hence a key policy thrust will be to remove current constraints and promote a balanced socio-economic engagement with land and water resources. Central to this policy objective is the need to reform land tenure and water use right provisions to give women equal voices in natural resource management and to ensure that local water management arrangements are all inclusive. In addition, clear economic incentives for farmer participation in scheme management, operation and maintenance will be set under Enhanced Services (Policy Thrust (d)).

### 3.3 Responsible Production

Agriculture has to be responsible for internalising its impact on environment and human health thereby ensuring that economic advantages of limited water resources can be realised downstream and down-gradient. Impacts on water quantity and water quality are equally important. Raising the environmental performance of all types of irrigation and related agricultural practice will be a prime policy objective that will be met through a broad adoption of good agricultural practice on irrigated land.

### 3.4 Enhanced Services

In response to the low levels of operation and maintenance, farmer participation in scheme management will need a major boost. A service-oriented approach is emphasised under this policy thrust, which will extend cost-effective, demand driven irrigation services to public and private irrigators through a series of clear economic incentives for farmer participation. The specific policy sub-objectives are:



**Farmers growing vegetables under irrigation**

- (a) To develop well-focussed and service oriented public institutions
- (b) To provide cost-effective, demand driven irrigation support services to both public and private irrigators
- (c) To develop appropriate human resource capacities targeting farmers and institutions.

## **CHAPTER 4**

### **GUIDING PRINCIPLES**

The guiding principles informing this policy are as follows:-

#### **4.1 Performance and Sustainability**

Irrigation development planning should pay due regard to the need for sustainability in terms of operation, maintenance, competing needs and the conservation and responsible use of natural resources.

#### **4.2 Ownership**

The “ownership” benefits accruing to participation in capital cost recovery are acknowledged; but so are the limited abilities of typical rural communities to do so; capital cost recovery in the irrigation sub-sector is therefore likely to be partial for the foreseeable future and levels will be set pragmatically and in accordance with the prevailing macro-economic policy guidelines.

#### **4.3 Women's Participation and Rights**

In acknowledgment of their central role in the provision, management and safeguarding of water, women should enjoy equitable access to the benefits of irrigation services while participating fully in the activities and leadership of water user associations.

#### **4.4 Awareness and Sensitisation to Create Demand**

Government expends the necessary amounts of budgetary resources for extensive public sensitization and awareness creation, in order to generate demand for irrigation by communities that are aware not only of the benefits of irrigation and their obligations as users of public sector infrastructure, but also the need for a well enforced regulatory framework.

#### **4.5 Decentralisation and Subsidiarity**

Government remains committed to ongoing decentralization process across board, including Ministries, Departments and Agencies (MDAs) and Metropolitan, Municipal and District Assemblies (MMDAs). Equally, irrigation sector institutions need to adhere to the principle of subsidiarity, with management responsibilities of public infrastructure devolved to users to the greatest practical extent, with public participation in decision making at all levels.

## CHAPTER 5

### POLICY IMPLEMENTATION STRATEGY

#### 5.1 PERFORMANCE AND GROWTH

The strategy to implement this major policy objective will realize the productive capacity of the informal sector and existing public and private assets and responding to new demands for irrigated production through a mix of well coordinated public and private initiatives. The key implementing units will be GIDA (for MoFA) the District Assemblies (DAs) and WRC with close collaboration from the Department of Cooperatives, the private sector and field based NGOs and farmer associations. Supporting regulations and guidelines will include a revised Legislative Instrument (LI) 1350. Details are elaborated in the appended Policy Matrix and Draft Regulation Proposals. A roadmap for irrigation development in Ghana is presented in Annex 3 under which a total of 500,000ha is expected to be put under irrigation in the medium to long term.

##### 5.1.1 To Raise Productivity of Irrigation Water

###### **Strategic actions:**

- (a) Promote water saving techniques, farming systems and incentives among existing irrigators.
- (b) In collaboration with WRC, promote improved water allocation and re-allocation mechanisms among farming communities and irrigation schemes.
- (c) In collaboration with WRC, optimise inter-sectoral allocation of raw water between agriculture and other competing uses.
- (d) Support best practices for the safe use of marginal quality water in accordance with World Health Organisation (WHO) Guidelines for the Safe Use of Wastewater, Excreta and Grey-water in agriculture.

##### 5.1.2 To Enhance Production Potential of Ongoing Irrigation Activities

###### **Strategic actions:**

- (a) Undertake participatory appraisals to analyse needs and potential of existing schemes
- (b) Undertake participatory rehabilitation/upgrading of existing schemes where feasible.
- (c) Characterize informal and commercial irrigation in Ghana for efficient and demand-driven service delivery
- (d) Devolve management of public irrigation schemes to the greatest extent possible
- (e) Improve Operation and Maintenance by a combination of Water Users Association (WUA)/ Cooperatives capacity building and improve recurring cost recovery
- (f) Clarify ownership of irrigation infrastructure
- (g) Set access criteria and regulations for WUA/Cooperatives membership



### 5.1.3 To Develop New Irrigation Areas According to Demand and Feasibility

#### **Strategic actions:**

- (a) Review existing studies and experiences
- (b) Analyze local demand, feasibility and viability for irrigation agriculture.
- (c) Establish an inventory of potential irrigation areas for formal and commercial schemes as well as informal irrigation including areas already scheduled for development.
- (d) Develop a National Irrigation Development Master Plan (NIDMAP)
- (e) Ensure beneficiary participation throughout the planning process and project cycle of new development projects including awareness raising.
- (f) Set ownership criteria for new public infrastructure.
- (g) Undertake awareness raising and sensitisation for private investments.

### 5.1.4 To Establish Appropriate Funding Mechanisms for Public Irrigation

#### **Strategic actions:**

- (a) Align donor financing with NIDMAP through basket funding
- (b) Provide increased direct budgetary allocation to GIDA for public irrigation
- (c) Set and enforce capital cost contribution criteria for public schemes within five years
- (d) Develop innovative term and seasonal financial products for irrigators
- (e) Institute measures to ensure 100% recurrent and replacement cost recovery subject to equitable energy sector considerations

### 5.1.5 To Increase Private Sector Investment in Irrigation

#### **Strategic actions:**

- (a) Identify and implement Public-Private Partnerships in irrigation where feasible
- (b) Create an enabling environment for profitable privately funded irrigation
- (c) Establish an economically meaningful incentive system for private sector irrigators
- (d) Identify, evaluate and where feasible introduce appropriate, promising and affordable technologies for the informal sector

### 5.1.6 To Fix Responsibility for Implementation and Review of Legal Mandate

#### **Strategic actions:**

- (a) Amend Supreme Military Council Decree (SMCD) 85 to give GIDA the mandate to carry out its new responsibilities.
- (b) Work in close collaboration with WRC and Department of Cooperatives and other relevant Ministries, Departments and Agencies (MDAs) as detailed in Figure I

- (c) Work in close collaboration with the private sector and field based NGOs and farmer based organisations
- (d) Ensure supporting regulations and guidelines as included in the revised LI1350 detailed in Annex II
- (e) Ensure the passage of new legislation to enable GIDA regulate irrigation development in Ghana
- (f) Comply with the provisions of the State Lands Act, as amended, for both large scale and small scale irrigation projects. Beneficiaries will have to be responsible for the acquisition of leases.

## 5.2 SOCIO-ECONOMIC INCLUSION

The strategy for implementing this major policy objective will be driven by GIDA and Women in Agricultural Development (WIAD) as the key implementing units within MoFA. Key collaborating agencies will be the Ministries of Lands and Natural Resources; Ministry of Local Government and Rural Development;(MLG& RD);Ministry of Women and Children's Affairs (MoWCA); Traditional Authorities; the private sector; and field based NGOs. Supporting regulations, particularly with respect to the legitimisation of water user association will be instrumental in clarifying access to the natural resource base. Details are elaborated in the appended Policy Matrix and Draft Regulation Proposals.

### 5.2.1 To Remove Imbalances Between Ownership Rights, Division of Labour and Incomes

#### **Strategic actions:**

- a) Mainstream gender issues throughout project cycles
- b) Address land tenure problems, especially with respect to women
- c) Assist disadvantaged groups to participate fully in project cycle and benefits
- d) Ensure equitable access to irrigation services by women
- e) Ensure full participation in WUA/Cooperatives activities and leadership by women and disadvantaged groups
- f) Train NGOs in gender issues
- g) Adopt downstream level control on shared distribution systems

## 5.3 RESPONSIBLE PRODUCTION

This policy thrust will ensure that the irrigated sub-sector is capable of environmentally responsible production that is both compliant with Ghana's environmental legislation and regulation and is also

up to date with international norms and practices in minimising the sub-sector's hydrological footprint on the environment and human health. The key implementing units will be GIDA, the EPA and Ministry of Health (MOH). Supporting regulations and guidelines which include stipulation of minimum stream flows and agricultural effluent with updated guidelines for the application of pesticides and fertilisers in irrigation practice.

### 5.3.1 To Improve Environmental Management Within Irrigated Agriculture

#### **Strategic actions:**

- (a) GIDA mainstreams environmental considerations throughout scheme cycles
- (b) Raise grass roots awareness of environmental linkages and risks
- (c) Monitor the occurrence of water-related diseases like bilharzia and malaria
- (d) Introduce community based natural resource accounting
- (e) Ensure participatory catchment area protection in vulnerable systems
- (f) Promote good agricultural practice on all irrigation schemes
- (g) Support effluent treatment where marginal-quality water is affecting irrigation
- (h) Promote access to safer groundwater or safer irrigation practices where only marginal-quality water is available
- (i) Encourage research on safe irrigation practices for irrigated urban and peri-urban agriculture and disseminate these in collaboration with other institutions
- (j) Provide effective and efficient internal institutional structures to collaborate with appropriate agencies to ensure environmental compliance.

## 5.4 ENHANCED SERVICES

This policy thrust will underpin policy implementation and is the 'bedrock' component of the strategy. Irrigation services will be enhanced through GIDA as a champion of irrigation service delivery. The key implementing units will be GIDA in close collaboration with MoFA Directorates, the private sector and field based NGOs. Supporting regulations and guidelines include a revised LI 1350 and service delivery standards. Details are elaborated in the appended Policy Matrix and the proposed Draft Regulations.

### 5.4.1 To Develop Well-Focussed and Service-Oriented Public Institutions

#### **Strategic actions:**

- a) Revise the mandate of GIDA to act as regulator for irrigation development to promote formal, informal and large scale commercial irrigation
- b) Increase accountability by implementing efficient internal and external Monitoring & Evaluation procedures in GIDA and collaborating agencies

- c) Develop and maintain quality standards in all services
- d) Improve linkages with MoFA, especially at District level
- e) Facilitate the gradual devolution of GIDA's responsibility for direct management of irrigation schemes
- f) Collaborate with Ministry of Transport to improve accessibility to existing and potential irrigation areas.
- g) Improve collaboration with other ministries and agencies and the research sector
- h) Retain staff through improved employment packages for GIDA staff
- i) Appropriate legal frameworks for water user associations promulgated where Cooperative Law is deemed too onerous

#### 5.4.2 To Provide Cost-Effective, Demand Driven Irrigation Support Services Available to Both Public and Private Irrigators

##### **Strategic actions:**

- (a) Assist DAs in preparing gender sensitive and pro-poor agricultural development plans responsive to market forces and community and WUA/Cooperatives demand
- (b) Institutionalize beneficiary participation to analyse training and support needs
- (c) Improve pre and post harvest support services
- (d) Promote irrigation technology development and transfer
- (e) Set national irrigation service delivery and design standards and guidelines
- (f) Institute sectoral monitoring and evaluation, including monitoring and analysis of irrigation costs and benefits

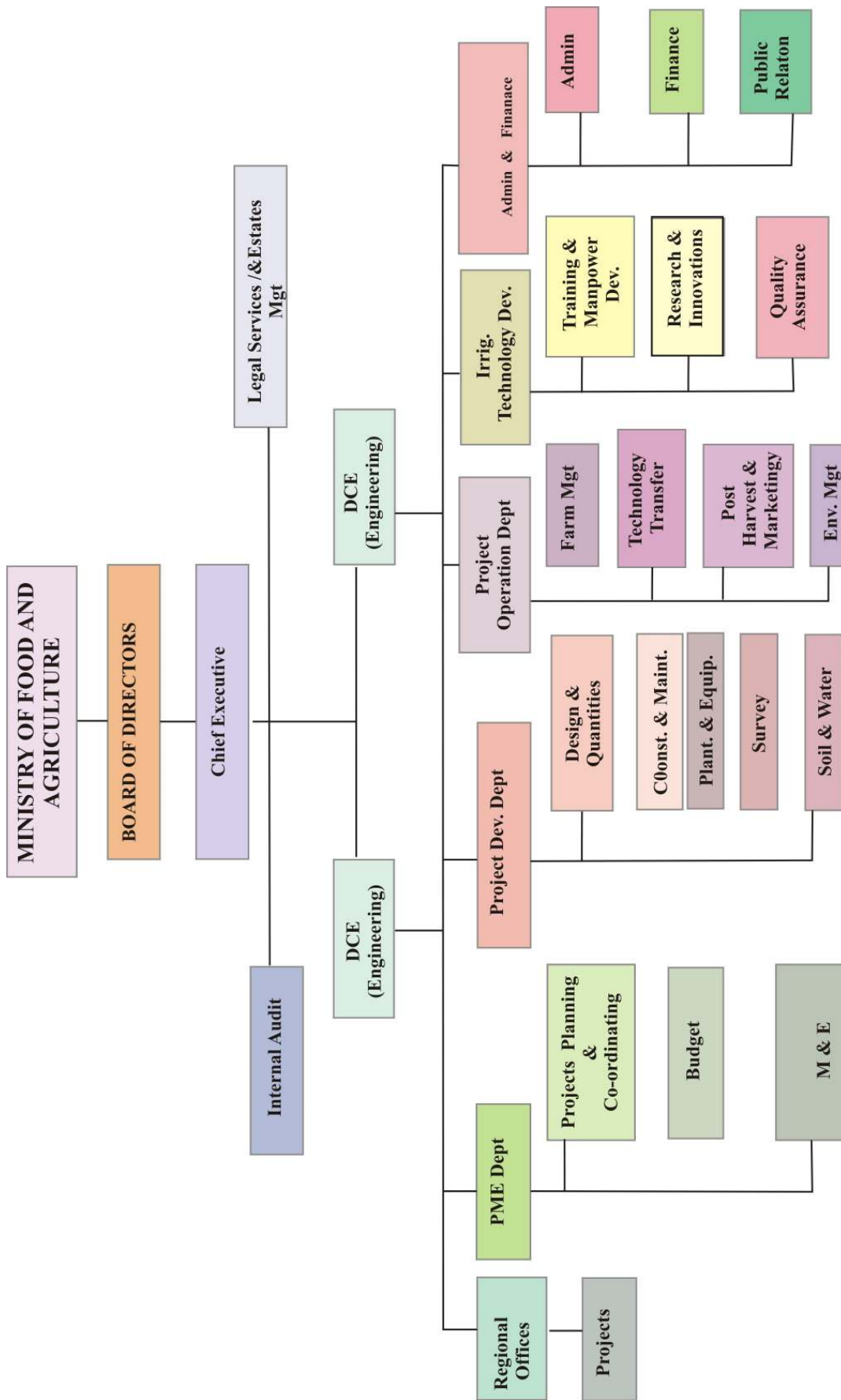
#### 5.4.3 To Develop Appropriate Human Resource Capacities

##### **Strategic actions:**

- (a) Strengthen farmers' ability to participate throughout the project cycle and ensure the application of regulations by means of robust social mobilisation, awareness raising and capacity building measures
- (b) Implement major institutional restructuring, expansion and capacity building of GIDA to address the needs and opportunities also of the informal and commercial irrigation sectors including gender mainstreaming at all levels
- (c) Strengthen DAs to instigate, regulate and facilitate irrigation development
- (d) Sensitise credit suppliers to the informal sector and non-traditional financial products
- (e) Strengthen the capacity of input and equipment suppliers with respect to service provision and stockpile management
- (f) Strengthen extension services with respect to crop diversification and on-farm water management for all categories of irrigation.
- (g) Encourage the curricula development and targeted research for academia and research institutions respectively addressing technologies and needs of all irrigation categories



Figure 2. Proposed Re-Structure of GIDA



## CHAPTER 6

### INSTITUTIONAL FRAMEWORK FOR POLICY IMPLEMENTATION

Institutional analysis carried out during this policy formulation indicated the need for clearer mandates and institutional linkages both within MoFA and outside. While this policy directly implicates institutions within MoFA, effective links beyond MoFA, notably with regulatory agencies and local government are also required.

A summary institutional framework to implement the policy is outlined in Figure 1 here to indicate re-alignment of Government executive agencies, regulators and users. This framework is proposed to clarify existing institutional arrangements.

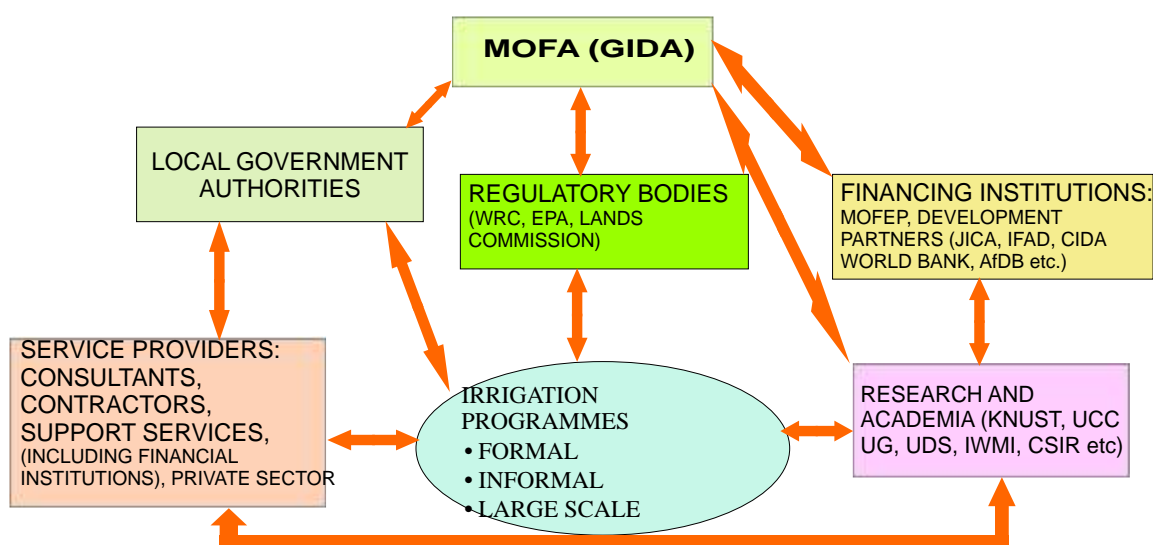


Figure 1. Institutions and Actors in the Irrigation Sub-Sector

#### The key features of the proposed institutional reform are;

**GIDA:** Capacity strengthened to deliver public services to both the formal and informal sub-sector; to be organized along functional lines rather than disciplines; evaluated through measurable delivery and accountability; functional links with MoFA district offices reinforced; links with regulatory agencies (notably WRC and EPA) deepened to ensure compliance of agricultural water management with water and environmental policy/regulation.

**MoFA:** MoFA's role, in addition to sitting on the GIDA Board, will be to ensure that all relevant support services under its remit are sustained and commensurate with the policy.

**Outside MoFA:** It is envisaged that policy specific interfaces will be developed with the MLG & RD WRC and EPA to ensure both local level participation and financing as well as natural resource and environmental management compliance of policy outcomes.

## **6.1 KEY FEATURES OF THE PROPOSED RE-STRUCTURED GIDA**

GIDA is to be fully de-centralized with the regional offices elevated to the level of departments. This will enable the regional offices to fully represent GIDA in the various regions of the country. A new department for irrigation technology development will be created to liaise between research/academia as well as take charge of the farmer training and manpower development of GIDA. The 2 Deputy Chief Executives (DCEs) will be in charge of all the departments and will handle issues thereof, based on the subject matter.

GIDA's main activity is irrigation and must be seen as such. Attempts to breakdown irrigation into engineering and agronomy may tend to polarise the Authority into two competing rather than complementary disciplines.

In this regard, it will be desirable to see the 2 DCEs as deputies for the activities of the Authority which is IRRIGATION. The Deputies are therefore responsible, generally, for all the various Departments under them. After all the Departments are all practising irrigation.

## **6.2 IRRIGATION DEVELOPMENT PATH**

The irrigation policy comes with a set of objectives that seek to sustain growth and improve performance of the sub-sector. Consequently, a roadmap for the achievement of these objectives is presented in Annex 3. The roadmap has a strategic framework for the pursuit of 4 defined paths or considerations in the irrigation sub-sector within defined time frames:

**Path 1:** Enabling Environment: This sets out a programme that GIDA will pursue in order to facilitate the production activities of smallholder, emerging and commercial irrigation farmers for sustainability of infrastructure and improvement of the economic well being of the farmers.

**Path 2:** Alternatives to Formal Irrigation: This presents viable programmes that are seen as sustainable options to formal irrigation for the benefit of especially smallholders.

**Path 3:** Existing Assets: This presents a programme for the maintenance and sustenance of existing irrigation schemes.

**Path 4:** New Investments: This spells out a path to be pursued with regard to new investments by smallholder, emerging and commercial farmers in the irrigation sub-sector. Under this, Government is expected to provide the necessary infrastructure to attract large scale investors in the sub-sector.

# POLICY MATRIX

PROBLEM STATEMENT	POLICY THRUST (OBJECTIVES)	STRATEGIC ACTIONS	IMPLEMENTING UNIT	COLLABORATING AGENCY/PARTNERS	SUPPORTING REGULATION
5.1. Slow growth of irrigated production in Ghana. Low productivity from existing schemes and lagged creation of new irrigation facilities to meet actual and projected demand	5.1.1. To raise productivity of irrigation water	<ul style="list-style-type: none"> <li>Promote water saving techniques, farming systems and incentives among existing irrigators</li> <li>In collaboration with WRC, promote improved water allocation and re-allocation mechanisms among farming communities and irrigation schemes.</li> <li>In collaboration with WRC, optimise inter-sectoral allocation of raw water between agriculture and other competing uses</li> <li>Support best practices for the safe use of marginal quality water</li> </ul>	<ul style="list-style-type: none"> <li>GIDA</li> <li>MoFA (Extension Service)</li> <li>WRC</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>EPA</li> <li>MoFA (Agric Eng Services Directorate)</li> </ul>	<ul style="list-style-type: none"> <li>LI 1350 (to be revised)</li> </ul>
	5.1.2 To enhance production potential of ongoing irrigation activities.	<ul style="list-style-type: none"> <li>Undertake participatory appraisals to analyse needs and potential of existing schemes</li> <li>Undertake participatory rehabilitation/upgrading of existing schemes where feasible</li> <li>Characterize informal and commercial irrigation in Ghana for efficient and demand- driven service delivery</li> <li>Devolve management of public irrigation schemes to the greatest extent possible</li> <li>Improve Operation and Maintenance by a combination of WUA/cooperatives, capacity building and improved recurring cost recovery</li> <li>Clarify ownership of infrastructure</li> <li>Set access criteria and regulations for WUA /cooperative membership</li> </ul>	<ul style="list-style-type: none"> <li>MoFA</li> <li>GIDA</li> <li>DAS</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Dept. of Cooperatives</li> <li>WUAs</li> <li>Traditional Authorities</li> <li>Media</li> <li>Local consultants</li> </ul>	<ul style="list-style-type: none"> <li>LI 1350 (to be revised)</li> <li>Guidelines on participatory water tariff structures and procedures</li> <li>Legal clarification of scheme ownership and access rights</li> </ul>
	5.1.3 To develop new irrigation areas according to demand and feasibility	<ul style="list-style-type: none"> <li>Review existing studies and experiences</li> <li>Analyse local demand, feasibility and viability for irrigation agriculture</li> <li>Establish an inventory of potential irrigation areas for formal and commercial schemes as well as informal irrigation including areas already scheduled for development</li> <li>Develop a National Irrigation Development Master Plan (NIDMAP)</li> <li>Beneficiary participation throughout the planning process and project cycle of new development projects including awareness raising</li> <li>Set ownership criteria for new public infrastructure</li> <li>Undertake awareness raising and sensitisation for private investments</li> </ul>	<ul style="list-style-type: none"> <li>MoFA</li> <li>GIDA</li> <li>DAS</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Ditto</li> <li>Plus</li> <li>Ministry of Water Resources, Works and Housing (MWR, W&amp;H)</li> </ul>	<ul style="list-style-type: none"> <li>Ditto</li> </ul>



PROBLEM STATEMENT	POLICY THRUST (OBJECTIVES)	STRATEGIC ACTIONS	IMPLEMENTING UNIT	COLLABORATING AGENCY/PARTNERS	SUPPORTING REGULATION
	5.1.4. To establish appropriate funding mechanisms for public Irrigation	<ul style="list-style-type: none"> <li>Align donor financing with NIDMAP through basket funding</li> <li>Provide increased direct budgetary allocation to GIDA for public irrigation</li> <li>Set and enforce capital cost contribution criteria for public schemes within five years</li> <li>Develop innovative term and seasonal financial products for irrigators</li> <li>Institute measures to ensure 100% recurring and replacement cost recovery subject to equitable energy sector considerations</li> </ul>	<ul style="list-style-type: none"> <li>MoFEP</li> <li>MoFA</li> <li>Beneficiaries</li> <li>Development Partners</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Private sector credit suppliers</li> </ul>	<ul style="list-style-type: none"> <li>SMCD 85 (Irrigation Development Authority Decree as amended)</li> </ul>
	5.1.5. To increase private sector investment in irrigation.	<ul style="list-style-type: none"> <li>Identify and implement Public- Private Partnerships in irrigation where feasible</li> <li>Create an enabling environment for profitable privately funded irrigation</li> <li>Establish an economically meaningful incentive system for private sector irrigators</li> <li>Identify, evaluate and where feasible introduce appropriate, promising and affordable technologies for the informal sector</li> </ul>	<ul style="list-style-type: none"> <li>MoFA</li> <li>GIDA</li> <li>NGOs</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Trade &amp; Industry, (Export Promotion Council)</li> <li>Ghana Investment Promotion Centre</li> <li>Registrar General's Department</li> <li>Chamber of Commerce</li> <li>FAGE</li> <li>GoG (incentives)</li> </ul>	
	5.1.6 To fix responsibility for implementation and review of legal mandate	<ul style="list-style-type: none"> <li>Amend SMCD 85 to give GIDA the mandate to carry out its new responsibilities</li> <li>Work in close collaboration with WRC and department of cooperatives and other relevant MDAs as detailed in Figure I</li> <li>Work in close collaboration with the private sector and field based NGOs and farmer based organizations</li> <li>Ensure supporting regulations and guidelines as included in the revised LI 1350 detailed in Annex II</li> <li>Ensure the passage of new legislature and enable GIDA regulate irrigation development in Ghana</li> <li>Comply with provisions of the State Lands Act for both large and small scale irrigation projects</li> </ul>	<ul style="list-style-type: none"> <li>GIDA</li> <li>MOFA</li> <li>Das</li> <li>NGOs</li> <li>CBOs</li> </ul>	<ul style="list-style-type: none"> <li>Ministry of Lands and Natural Resources</li> <li>Ministry of Local Government &amp; Rural Development</li> <li>Traditional Rulers</li> </ul>	<ul style="list-style-type: none"> <li>LI 1350 (to be revised)</li> <li>SMCD 85 (as amended)</li> </ul>

PROBLEM STATEMENT	POLICY THRUST (OBJECTIVES)	STRATEGIC ACTIONS	IMPLEMENTING UNIT	COLLABORATING AGENCY/PARTNERS	SUPPORTING REGULATION
5.2. Socio-economic engagement with and water resources inhibited by social inequity, gender imbalance and inadequate attention to women's rights	5.2.1. To remove imbalances between ownership rights, division of labour and incomes	<ul style="list-style-type: none"> <li>• Mainstream gender issues and sensitivity throughout project cycles</li> <li>• Address land tenure problems especially with respect to women</li> <li>• Assist disadvantaged groups to participate fully in project cycle and benefits</li> <li>• Ensure equitable access to irrigation services by women</li> <li>• Ensure full participation in WUA /Cooperatives activities and leadership by women and disadvantaged groups</li> <li>• Train NGOs in gender issues</li> <li>• Adopt downstream level control on shared distribution systems</li> </ul>	<ul style="list-style-type: none"> <li>• GIDA</li> <li>• MoFA (WIAD)</li> </ul>	<ul style="list-style-type: none"> <li>• Dept. of Cooperatives</li> <li>• MoWCA</li> <li>• Ministry of Lands and Natural Resources</li> <li>• Traditional Authorities</li> <li>• Ministry of Local Government &amp; Rural Development/DA</li> </ul>	<ul style="list-style-type: none"> <li>• LI 1350 (to be revised)</li> <li>• WUA legislation</li> </ul>
5.3. Environmental degradation associated with irrigation development intensifying as a result of poor agricultural practice and regulatory loopholes.	5.3.1 To improve environmental management within irrigated agriculture	<ul style="list-style-type: none"> <li>• GIDA mainstreams environmental considerations throughout scheme cycles</li> <li>• Raise grass roots awareness of environmental linkages and risks</li> <li>• Monitor the occurrence of water-related disease like bilharzias and malaria</li> <li>• Introduce community based resource accounting</li> <li>• Ensure participatory catchment area protection in vulnerable systems</li> <li>• Promote good agricultural practice on all irrigation schemes</li> <li>• Support influent treatment where marginal quality water is affecting irrigation</li> <li>• Promote access to safer ground water or safer irrigation practices where only marginal-quality water is available</li> <li>• Encourage research on safe irrigation practices for irrigated urban and peri-urban agriculture and disseminate these in collaboration with other institutions</li> <li>• Provide effective and efficient institutional structures to collaborate with appropriate agencies to ensure environmental compliance</li> </ul>	<ul style="list-style-type: none"> <li>• Ditto</li> </ul>	<ul style="list-style-type: none"> <li>• Ditto plus</li> <li>• WRC</li> <li>• MoH</li> </ul>	<ul style="list-style-type: none"> <li>• Existing regulations need to include issues concerning minimum stream flows and possible maximum flood capture levels</li> <li>• Effluent Guidelines need clarifying</li> </ul>

PROBLEM STATEMENT	POLICY THRUST (OBJECTIVES)	STRATEGIC ACTIONS	IMPLEMENTING UNIT	COLLABORATING AGENCY/PARTNERS	SUPPORTING REGULATION
5.4. Irrigation service delivery very poor primarily as a result of inadequate human resource capacity at all levels and ineffective and/or poorly focussed institutional mandates leading to poor service delivery resulting in asset deterioration and reduced profits	5.4.1 To develop well focussed and service oriented public institutions	<ul style="list-style-type: none"> <li>• Revise the mandate of GIDA to act as regulator, for irrigation development to promote formal, informal and landscape commercial irrigation</li> <li>• Increase accountability by implementing efficient internal and external monitoring and evaluation procedures in GIDA and collaborating agencies</li> <li>• Develop and maintain quality standards in all services</li> <li>• Improve linkages with MOFA especially at district level</li> <li>• Facilitate the gradual devolution of GIDA's responsibility for direct management of irrigation schemes</li> <li>• Collaborate with Ministry of Transportation to improve accessibility to existing and potential irrigation areas</li> <li>• Improve collaboration with other ministries and agencies and the research sector</li> <li>• Retain staff through improved employment packages for GIDA staff</li> <li>• Appropriate legal frameworks for water user associations promulgated where Cooperative Law is deemed too onerous</li> </ul>	<ul style="list-style-type: none"> <li>• GIDA</li> <li>• Consultants</li> <li>• GoG</li> </ul>	<ul style="list-style-type: none"> <li>• State Enterprise Commission</li> <li>• Development Partners</li> <li>• Public Services Commission</li> <li>• Ministry of Employment and Social Welfare</li> <li>• Public Sector Reform Secretariat</li> <li>• GIDA Board</li> </ul>	<ul style="list-style-type: none"> <li>• Adherence to the provisions of SMCD 85 (Irrigation Development Authority Decree as amended) in terms of the status roles and functions of a cooperate body</li> <li>• Alternative legal frameworks for WUAS</li> </ul>
	5.4.2. To provide cost-effective, demand driven irrigation support services available to both public and private irrigators	<ul style="list-style-type: none"> <li>• Assist DAs in preparing gender sensitive and pro-poor agricultural development plans responsive to market forces and community and WUA/cooperatives demand</li> <li>• Institutionalise beneficiary participation to analyse training and support needs</li> <li>• Improve pre and post harvest support services</li> <li>• Promote irrigation technology transfer</li> <li>• Set national irrigation service delivery and design standards and guidelines</li> <li>• Institute sectoral monitoring and evaluation, including monitoring and analysis of irrigation costs and benefits</li> </ul>	<ul style="list-style-type: none"> <li>• GIDA</li> <li>• MoFA</li> </ul>	<ul style="list-style-type: none"> <li>• Local Governments</li> <li>• Cooperatives</li> <li>• NGOs</li> <li>• National Standards Board</li> <li>• Ministry of Transport</li> </ul>	<ul style="list-style-type: none"> <li>• Service delivery standards (to be established)</li> <li>• LI 1350 (to be revised)</li> </ul>

PROBLEM STATEMENT	POLICY THRUST (OBJECTIVES)	STRATEGIC ACTIONS	IMPLEMENTING UNIT	COLLABORATING AGENCY/PARTNERS	SUPPORTING REGULATION
	<p>5.4.3. To develop appropriate human resource capacities</p>	<ul style="list-style-type: none"> <li>• Strengthen farmers' ability to participate throughout the project cycle and ensure the application of regulations by means of robust social mobilisation, awareness raising and capacity building measures</li> <li>• Implement major institutional restructuring, expansion and capacity building of GIDA to address the needs and the opportunities also of the informal and commercial irrigation sectors including gender mainstreaming at all levels</li> <li>• Strengthened DA's to instigate, regulate and facilitate irrigation development</li> <li>• Sensitise credit suppliers to the informal sector and non-traditional financial products</li> <li>• Strengthened the capacity of input and equipment suppliers with respect to service provision and stockpile management</li> <li>• Strengthened extension services with respect to crop diversification and on-farm water management for all categories of irrigation</li> <li>• Encourage curricula development and targeted research for academia and the research institutions respectively addressing technologies and needs of all irrigation categories</li> </ul>	<ul style="list-style-type: none"> <li>• GIDA</li> <li>• Consultants</li> <li>• NGOs</li> <li>• Dept of Cooperatives</li> </ul>	<ul style="list-style-type: none"> <li>• Public Sector Reform Secretariat</li> <li>• Academia</li> <li>• Research Institutions</li> <li>• Credit suppliers</li> <li>• Input and Equipment Suppliers</li> <li>• MoFA (Extension Services)</li> </ul>	<ul style="list-style-type: none"> <li>• Service Delivery standards needed</li> </ul>

## Irrigation Policy Development Path

PATH	STRATEGIC PROGRAMME	FARMERS BENEFITTING	TIME FRAME		
			Short term 0-5 years	Medium term 6-10 years	Long term 11-25 years
1: THE ENABLING ENVIRONMENT	Improved marketing institutions and infrastructure	Small Holder	This will have to be addressed by parallel initiatives, some at appraisal stage and others yet to be identified		
	Mobilisation of agricultural comparative advantage	Emerging Commercial	↑		
	Improved profitability of irrigated farming	Emerging Commercial	↑		
	Improved support services	Small Holder	↑		
	Institutional capacity building	Small Holder	↑		
	Enhancement of the legal and policy framework	Small Holder	↑		
	Strengthening of grass roots organizations	Small Holder	↑		
	Improved support infrastructure	Small Holder	↑		
2: ALTERNATIVES TO FORMAL IRRIGATION	Improved rainfed production	Small Holder	This will have to be addressed by parallel initiatives, some at appraisal stage others yet to be identified		
	Water harvesting/drainage	Small Holder	↑		
3: EXISTING ASSETS	Surface water extraction and peri-urban agric	Small Holder	↑		
	Participatory rehabilitation and upgrading of existing infrastructure	Small Holder	↑		
	Improved supply side infrastructure	Small Holder	↑		
	Irrigation management transfer	Small Holder	↑		
4: NEW INVESTMENT	Participatory development of demand driven, public funded irrigation schemes	Small Holder	↑		
	Expanded and new supply side infrastructure	Emerging Commercial	↑		









A New dam under construction





