

NATIONAL

IRRIGATION POLICY, STRATEGIES

AND

REGULATORY MEASURES

**GOVERNMENT OF GHANA
MINISTRY OF FOOD AND
AGRICULTURE**

**ACCRA – GHANA AFRICA - REGIONAL OFFICE
ACCRA - GHANA**

**FOOD AND AGRICULTURE
ORGANISATION OF THE
UNITED NATIONS**

MAY 2010

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LIST OF ACRONYMS AND ABBREVIATIONS

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 Exports
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	-	KwameNkrumahUniversity 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 Governmentand 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 CapeCoast
UG	-	University of Ghana
UDS	-	University of Development Studies
VRA	-	VoltaRiver Authority
WHO	-	World Health Organisation
WIAD	-	Women in Agricultural Development (MOFA)
WRC	-	Water Resources Commission
WUA	-	Water Users Association

FOREWORD

A national agricultural development plan that is aimed at ultimate industrialisation of the country's economy is very likely to fail if irrigation has not been made a part of the development plan. It is even more so in this present era of 'global warming'. Irrigation is thus increasingly becoming a key factor in any developing country's agricultural development plan.

This document which was approved by Cabinet on June 30, 2010 presents the Irrigation Policy and Strategies for improving irrigation development and management in Ghana in order to achieve the broad goals of the agricultural sector which are:

- (a) Food and raw material security
- (b) Rural agro-based industrialization
- (c) Increased employment
- (d) Creation of wealth and poverty alleviation
- (e) Greater contribution to Gross Domestic Product (GDP), foreign exchange reserve and government revenue
- (f) Judicious use of the country's water resources for irrigated agriculture.

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

The policy and strategies were prepared based on the findings and recommendations by a team of local and international consultants and comments from review and validation workshops that were attended by a number of institutions including the Environmental Protection Agency (EPA), Water Research Institute (WRI), Water Resources Commission (WRC), Ministries, the Academia, Non Governmental Organizations (NGOs) etc. The local team comprised an Irrigation Engineer; Agro-Economist; Gender

Development Sociologist; Legal Expert; Environmental Health; Environmental Protection; Irrigation Policy and Strategy and Institutional Restructuring and Human Resources Development Experts. The international team comprised Irrigation Policy and Strategy and Legal Experts.

The project execution was guided by a Steering Committee made up of staff of the Food and Agriculture Organization (FAO), Ghana Irrigation Development Authority (GIDA), International Water Management Institute (IWMI), Ministry of Food and Agriculture (MoFA) and other national stakeholders including farmer representatives.

The process consisted of:

- i) An Inception Workshop in March 2005 to sensitize the consultants
- ii) A Stakeholders Validation Workshop in June 2005 on the initial Draft Irrigation Policy
- iii) Review meetings between the members of the Steering Committee and the team of local Consultants on the draft institutional and legal frameworks and the revised draft Irrigation Policy and Strategies in November 2005.
- iv) Review of the output of November 2005 at a Stakeholders Workshop in May 2006.
- v) Final review by the Steering Committee in June 2006.

This policy and strategies document is presented in five sections. The first section establishes the rationale for a specific sub-sector policy. The set of specific problem areas to be addressed by the policy is the subject of the second section. The policy makes up the third section. The fourth section describes the guiding principles informing this policy. The fifth section outlines the strategy for implementation of the policy. In addition a policy matrix is included as Annex 1 and proposals for enhancing sector related regulations as Annex 2. Annex 3 presents information on a new path for irrigation development in pursuit of the objectives of the policy.

It is an honour for me to present the foreword of the National Irrigation Policy,
Strategies and Regulatory Measures for Ghana.

MAY 2010

HON. KWESI AHWOI
MINISTER OF FOOD AND AGRICULTURE

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 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.

1.0 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 cross-cutting 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 cross-cutting 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
- © Large Scale Commercial Irrigation.

Informal Irrigation comprises traditional and community initiated schemes, which are typified by the cultivation of about 2,000ha of shallots in the South-eastern 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 peri-urban 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.

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 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.

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, 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 Bontahga Schemes were completed and commissioned under the Provisional National Defence Council (PNDC).

By 2003, GIDA had 22 irrigation schemes under its jurisdiction covering about 14,700ha 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 subsectors. 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. 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.

2.0 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 draw-back. 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. Many reasons can be cited, but a prime 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 and arise from the high costs of social connectivity; the use of expensive planning and design services; 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.

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.

3.0 THE POLICY

Four major policy objectives or 'thrusts', goal, 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).

© 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
- © 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:

- (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
- © To develop appropriate human resource capacities targeting farmers and institutions.

4.0 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 acknowledgement 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.

5.0 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, Extcreta and Greywater 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.
- © 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 Ministry 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

6.0 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.

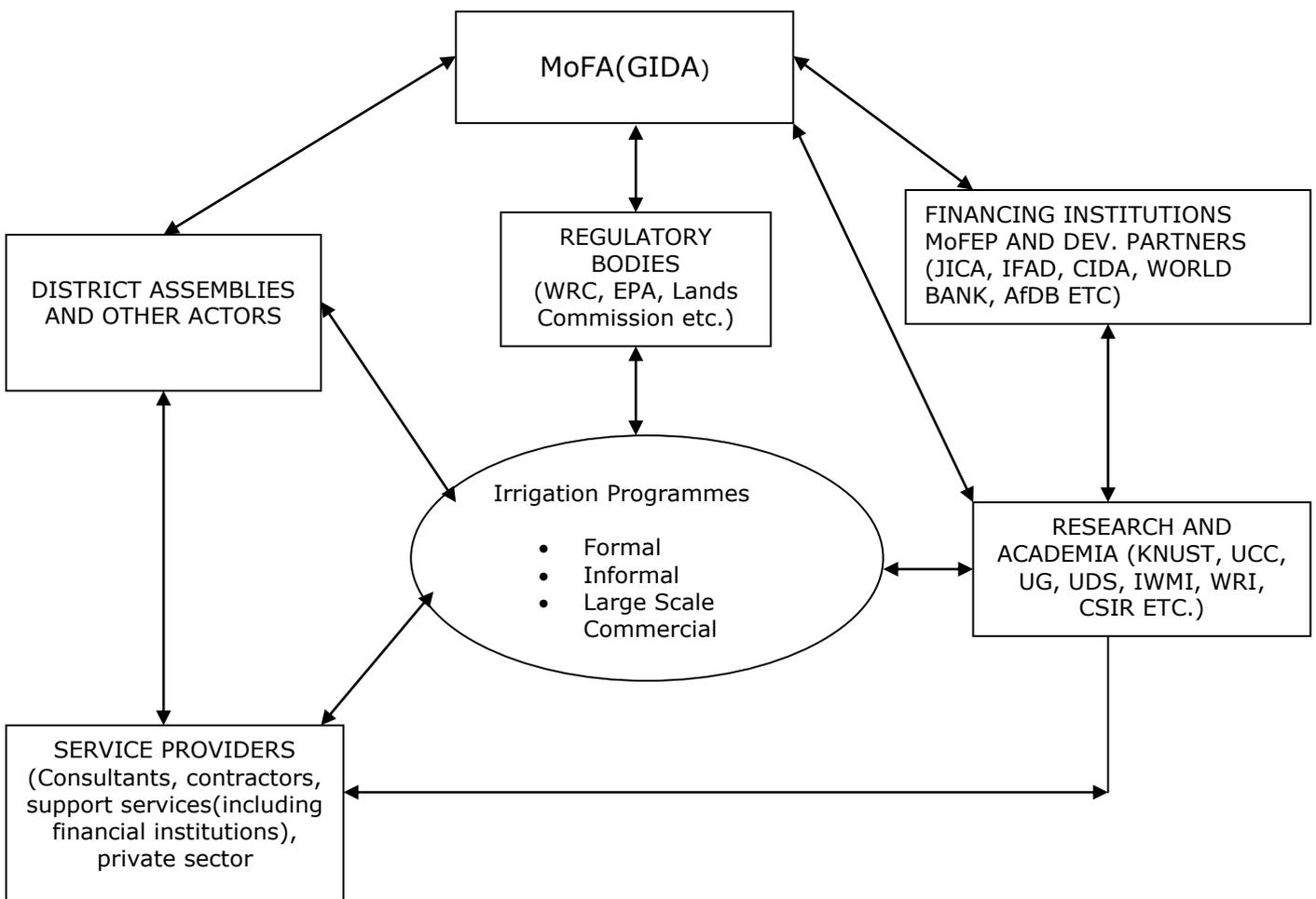


Figure 1: Institutions and Actors in the Irrigation Sub-Sector

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.

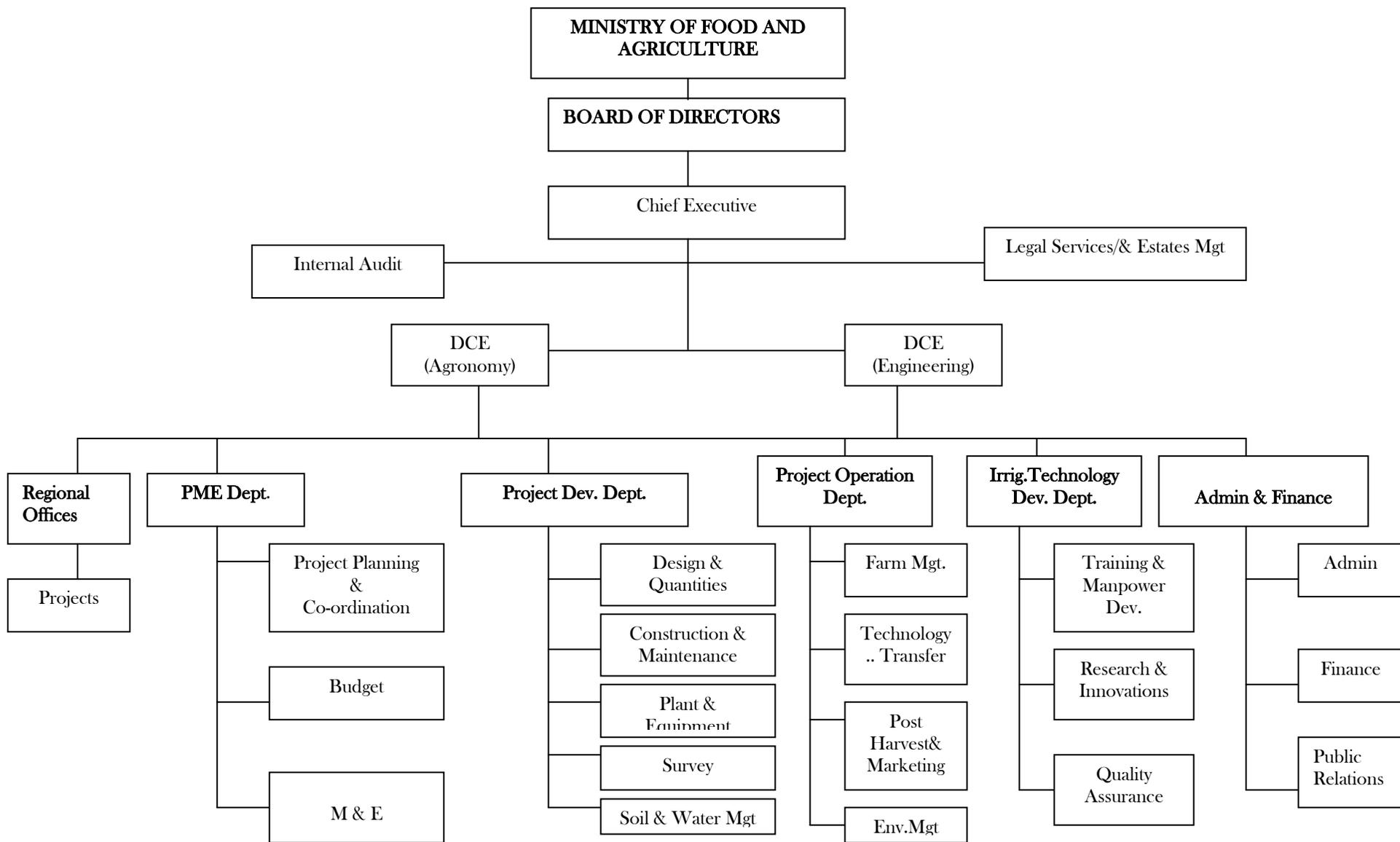


Figure 2: Proposed Re-structured GIDA

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.

6.1 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 wellbeing 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.

Annex 1: 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"> Promote water saving techniques, farming systems and incentives among existing irrigators In collaboration with WRC, promote improved water allocation and re-allocation mechanisms among farming communities and irrigation schemes. In collaboration with WRC, optimise inter-sectoral allocation of raw water between agriculture and other competing uses. Support best practices for the safe use of marginal quality water 	<ul style="list-style-type: none"> GIDA MoFA (Extension Service) WRC NGOs 	<ul style="list-style-type: none"> EPA MoFA (Agric Eng Services Directorate) 	<ul style="list-style-type: none"> LI 1350 (to be revised)
	5.1.2 To enhance production potential of ongoing irrigation activities.	<ul style="list-style-type: none"> Undertake participatory appraisals to analyse needs and potential of existing schemes Undertake participatory rehabilitation/upgrading of existing schemes where feasible Characterize informal and commercial irrigation in Ghana for efficient and demand-driven service delivery Devolve management of public irrigation schemes to the greatest extent possible Improve Operation and Maintenance by a combination of WUA/cooperatives, capacity building and improved recurring cost recovery Clarify ownership of infrastructure Set access criteria and regulations for WUA /cooperative membership 	<ul style="list-style-type: none"> MoFA GIDA DAs NGOs 	<ul style="list-style-type: none"> Dept. of Cooperatives WUAs Traditional Authorities Media Local consultants 	<ul style="list-style-type: none"> LI 1350 (to be revised) Guidelines on participatory water tariff structures and procedures Legal clarification of scheme ownership and access rights
	5.1.3 To develop new irrigation areas according to demand and feasibility.	<ul style="list-style-type: none"> Review existing studies and experiences Analyse local demand, feasibility and viability for irrigation agriculture Establish an inventory of potential irrigation areas for formal and commercial schemes as well as informal irrigation including areas already scheduled for development Develop a National Irrigation Development Master Plan (NIDMAP) Beneficiary participation throughout the planning process and project cycle of new development projects including awareness raising Set ownership criteria for new public infrastructure Undertake awareness raising and sensitisation for private investments 	<ul style="list-style-type: none"> MoFA GIDA DAs NGOs 	<ul style="list-style-type: none"> Ditto Plus Ministry of Water Resources, Works and Housing (MWR, W&H) 	<ul style="list-style-type: none"> Ditto
	5.1.4. To establish appropriate funding mechanisms for public Irrigation	<ul style="list-style-type: none"> Align donor financing with NIDMAP through basket funding Provide increased direct budgetary allocation to GIDA for public irrigation Set and enforce capital cost contribution criteria for public schemes within five years Develop innovative term and seasonal financial products for irrigators Institute measures to ensure 100% recurring and replacement cost recovery subject to equitable energy sector considerations 	<ul style="list-style-type: none"> MoFEP MoFA Beneficiaries Development Partners NGOs 	<ul style="list-style-type: none"> Private sector credit suppliers 	<ul style="list-style-type: none"> SMCD 85 (Irrigation Development Authority Decree as amended)
	5.1.5. To increase private sector investment in irrigation.	<ul style="list-style-type: none"> Identify and implement Public- Private Partnerships in irrigation where feasible Create an enabling environment for profitable privately funded irrigation Establish an economically meaningful incentive system for private sector irrigators Identify, evaluate and where feasible introduce appropriate, promising and affordable technologies for the informal sector 	<ul style="list-style-type: none"> MoFA GIDA NGOs 	<ul style="list-style-type: none"> Ministry of Trade & Industry, (Export Promotion Council) Ghana Investment Promotion Centre Registrar General's Department Chamber of Commerce FAGE GoG (incentives) 	

PROBLEM STATEMENT	POLICY THRUST (OBJECTIVES)	STRATEGIC ACTIONS	IMPLEMENTING UNIT	COLLABORATING AGENCY/PARTNERS	SUPPORTING REGULATION
	5.1.6 To fix responsibility for implementation and review of legal mandate	<ul style="list-style-type: none"> Amend SMCD 85 to give GIDA the mandate to carry out its new responsibilities Work in close collaboration with WRC and department of cooperatives and other relevant MDAs as detailed in Figure I Work in close collaboration with the private sector and field based NGOs and farmer based organizations Ensure supporting regulations and guidelines as included in the revised LI 1350 detailed in Annex II Ensure the passage of new legislature and enable GIDA regulate irrigation development in Ghana Comply with provisions of the State Lands Act for both large and small scale irrigation projects 	<ul style="list-style-type: none"> GIDA MOFA DAs NGOs CBOs 	<ul style="list-style-type: none"> Ministry of Lands and Natural Resources Ministry of Local Government & Rural Development Traditional Rulers 	<ul style="list-style-type: none"> LI 1350 (to be revised) SMCD 85 (as amended)
5.2. Socio-economic engagement with land 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"> Mainstream gender issues and sensitivity throughout project cycles Address land tenure problems especially with respect to women Assist disadvantaged groups to participate fully in project cycle and benefits Ensure equitable access to irrigation services by women Ensure full participation in WUA /Cooperatives activities and leadership by women and disadvantaged groups Train NGOs in gender issues Adopt downstream level control on shared distribution systems 	<ul style="list-style-type: none"> GIDA MoFA (WIAD) 	<ul style="list-style-type: none"> Dept. of Cooperatives MoWCA Ministry of Lands and Natural Resources Traditional Authorities Ministry of Local Government & Rural Development/DA 	<ul style="list-style-type: none"> LI 1350 (to be revised) WUA legislation
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"> GIDA mainstreams environmental considerations throughout scheme cycles Raise grass roots awareness of environmental linkages and risks Monitor the occurrence of water-related disease like bilharzias and malaria Introduce community based resource accounting Ensure participatory catchment area protection in vulnerable systems Promote good agricultural practice on all irrigation schemes Support influent treatment where marginal quality water is affecting irrigation Promote access to safer ground water or safer irrigation practices where only marginal-quality water is available Encourage research on safe irrigation practices for irrigated urban and peri-urban agriculture and disseminate these in collaboration with other institutions Provide effective and efficient institutional structures to collaborate with appropriate agencies to ensure environmental compliance 	<ul style="list-style-type: none"> Ditto 	<ul style="list-style-type: none"> Ditto plus WRC MoH 	<ul style="list-style-type: none"> Existing regulations need to include issues concerning minimum stream flows and possible maximum flood capture levels Effluent Guidelines need clarifying

PROBLEM STATEMENT	POLICY THRUST (OBJECTIVES)	STRATEGIC ACTIONS	IMPLEMENTING UNIT	COLLABORATING AGENCY/PARTNERS	SUPPORTING REGULATION
<p>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</p>	<p>5.4.1 To develop well focussed and service oriented public institutions</p>	<ul style="list-style-type: none"> • Revise the mandate of GIDA to act as regulator, for irrigation development to promote formal, informal and landscape commercial irrigation • Increase accountability by implementing efficient internal and external monitoring and evaluation procedures in GIDA and collaborating agencies • Develop and maintain quality standards in all services • Improve linkages with MOFA especially at district level • Facilitate the gradual devolution of GIDA's responsibility for direct management of irrigation schemes • Collaborate with Ministry of Transportation to improve accessibility to existing and potential irrigation areas • Improve collaboration with other ministries and agencies and the research sector • Retain staff through improved employment packages for GIDA staff • Appropriate legal frameworks for water user associations promulgated where Cooperative Law is deemed too onerous • 	<ul style="list-style-type: none"> • GIDA • Consultants • GoG 	<ul style="list-style-type: none"> • State Enterprise Commission • Development Partners • Public Services Commission • Ministry of Employment and Social Welfare • Public Sector Reform Secretariat • GIDA Board 	<ul style="list-style-type: none"> • 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 • Alternative legal frameworks for WUAs
	<p>5.4.2. To provide cost-effective, demand driven irrigation support services available to both public and private irrigators</p>	<ul style="list-style-type: none"> • Assist DAs in preparing gender sensitive and pro-poor agricultural development plans responsive to market forces and community and WUA/cooperatives demand • Institutionalise beneficiary participation to analyse training and support needs • Improve pre and post harvest support services • Promote irrigation technology transfer • Set national irrigation service delivery and design standards and guidelines • Institute sectoral monitoring and evaluation, including monitoring and analysis of irrigation costs and benefits 	<ul style="list-style-type: none"> • GIDA • MoFA 	<ul style="list-style-type: none"> • Local Governments • Cooperatives • NGOs • National Standards Board • Ministry of Transport 	<ul style="list-style-type: none"> • Service delivery standards (to be established) • LI 1350 (to be revised)
	<p>5.4.3. To develop appropriate human resource capacities</p>	<ul style="list-style-type: none"> • 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 • 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 • Strengthened DA's to instigate, regulate and facilitate irrigation development • Sensitise credit suppliers to the informal sector and non-traditional financial products • Strengthened the capacity of input and equipment suppliers with respect to service provision and stockpile management • Strengthened extension services with respect to crop diversification and on-farm water management for all categories of irrigation • Encourage curricula development and targeted research for academia and the research institutions respectively addressing technologies and needs of all irrigation categories 	<ul style="list-style-type: none"> • GIDA • Consultants • NGOs • Dept of Cooperatives 	<ul style="list-style-type: none"> • Public Sector Reform Secretariat • Academia • Research Institutions • Credit suppliers • Input and Equipment Suppliers • MoFA (Extension Services) 	<ul style="list-style-type: none"> • Service Delivery standards needed

Annex 2: Proposed Draft Regulations

IRRIGATION DEVELOPMENT AUTHORITY (AMENDMENT) REGULATIONS, 2006

In exercise of the powers conferred on the Board of the Irrigation Development Authority by section 20 (1) of the Irrigation Development Authority Decree, 1977 (S.M.C.D. 85) and with the prior approval of the Minister responsible for Agriculture, this Instrument is made this.. day of... 2006.

1. These Regulations shall govern all formal irrigation projects other than those in the private sector. The objects of the projects are to: manage water distribution systems, to deliver irrigation water and to operate irrigation infrastructure in conjunction or collaboration with decentralized authorities including District Assemblies and other bodies or institutions approved by Authority.
2. Without prejudice to the foregoing, the Management of the projects may exercise any of the following powers or functions:
 - (a) The construction, procurement, operation, maintenance and disposal of irrigation facilities in collaboration with the Authority and District Assemblies.
 - (b) Allocation of land to members.
 - (c) Maintenance and care of land, facilities and watercourses in order to ensure sustainable use of irrigated lands.
 - (d) The amelioration of irrigated lands, including the management of soil and water.
 - (e) The supply of inputs, marketing, wholesaling and processing of produce.
 - (f) Perform any duty, function or responsibility implied or incidental to the foregoing.
3. For the purpose of fulfilling its objects and purposes, the Project may:
 - (a) enter into any agreements with the any person, agency, or organization for any purpose related to:
 - (i) the exercise of the powers of the Project ; or
 - (ii) the carrying out of any of the Project's objects and purposes;
 - (b) provide irrigation services to its members and other persons in the irrigation area;
 - (c) acquire electrical or other power required to maintain and operate its irrigation works, water control works and water supply works in the project area;
 - (d) establish and collect water service charges;
 - (e) acquire any moneys or property that is necessary for or related to its objects and purposes;
 - (f) dispose of any of its property that it no longer requires in any manner and on those terms that it considers appropriate;
 - (g) Employ any staff that it considers necessary and determine the salary, duties and conditions of employment of its staff; subject to approval of the Minister exercised in consultation with the Minister responsible for finance.
 - (h) Generally do and authorize the doing of any thing that it considers incidental or conducive to exercising its powers or furthering its objects and purposes.
2.
 - (1) There shall be established on each Irrigation Project a body known as the Project Management hereafter referred to as the "Management".

Project Management hereafter referred to as the "Management".
 - (2) The Management shall ensure the implementation of the policies of the Irrigation Development Authority relating to the Project.

- (3) The Management shall consist of the Technical Heads of the various departments established under these Regulations and **at least** two representatives of the **Farmers' Cooperative Society** of the Project; a representative of the traditional Authority and a representative of the decentralized Authority.
 - (4) There shall be a Project Manager who shall be appointed by the Authority and who shall be in charge of the management of each Project.
- 3.
- (1) The Authority shall appoint the employees of the Project.
 - (2) The Authority may in consultation with Management engage the services of consultants for the Project.
 - (3) The employees and the consultants shall be engaged on such terms and conditions as the Authority shall determine.
- 4.
- (1) There shall be established by the Authority for each Project a Land Allocation Committee (LAC).
 - (2) The LAC shall consist of –
 - (a) **the District Chief Executive** who shall be the Chairman;
 - (b) a representative of the Chief Executive of the Authority;
 - (c) the Project Manager;
 - (d) a representative of the Traditional Authority or **land owners** within the area;
 - (e) representative of the decentralized authority; and
 - (f) **at least** two representatives of the **Farmers' Cooperative Society** of the Project.
 - (3) The LAC shall allocate land in accordance with the terms of the Land Allocation Agreement as specified in the Schedule to these Regulations to full-time farmers, taking into consideration the size of the farmers' family.
 - (4) The LAC in allocating land to the farmers shall give priority to farmers -
 - (i) who **own land in the area** or have been displaced as a result of construction of the Project;
 - (ii) who are resident in the surrounding villages; or
 - (iii) who are resident in other villages and wish to settle near the Project and accept small holdings.
 - (5) **On specialized irrigation projects, the land allocation committee shall allocate land to applicants upon success of an interview and also on the person's proven ability to manage irrigated farming.**
5. A farmer may, subject to the prior approval, consent and/or concurrence of LAC, convey his/her interest in an allocated land to a third party.
- 6.
- (1) The LAC shall meet **at least twice a year at the project site and the Committee** shall regulate its own procedure.
 - (2) The LAC shall within six weeks of every meeting of the Committee submit to the Authority a report containing its recommendations for the allocation of land to farmers.
- 7.
- (1) There shall be established by the Authority for each Project an Agricultural Committee.
 - (2) The Agricultural Committee shall consist of the District Agricultural Officer

- (or his representative) ,Heads of the various Technical Departments of the Management and **at least** two representatives of the **Farmers' Cooperative Society** of the Project
- (3) The Manager shall be the Chairman of the Agricultural Committee.
The Agricultural Committee shall -
- (a) be responsible for the planning and implementation of **cropping programmes;**
 - (b) ensure that no person tampers with irrigation network;
 - (c) ensure that farmers-
 - (i) use the land for the purpose specified in the Agreement **and obey any other rules made by the Management**
 - (ii) do not transfer or sublet land allocated to them without the consent and/or concurrence of the management in writing. **follow recommended agronomic practices.**
- (4) The Agricultural Committee shall meet **before/during/after cropping season(s) at the project site,** and shall regulate its own procedure.
8. (1) There shall be established by all the farmers of each Project a **Farmers' Cooperative Society** (hereafter referred to as the "**Cooperative**").
- (2) A person elected by the members from among themselves shall be the Chairman of the **Cooperative.**
- (3) The **Cooperative** shall -
- (a) represent its members in all transactions both with private and government agencies concerning the Project.
 - (b) participate in the business of the **Management of the Project.**
 - (c) **participate in operation and maintenance of irrigation facilities, and**
 - (d) Act as an arbitrator in disputes involving members of the **Cooperative.**
- (4) The **Cooperative** shall with respect to its administration and financial management, be subject to the provisions of the Co-operative Societies Decree, 1968 National Liberation Council Decree (N.L.C.D.) 252 **as amended.**
- (5) The **Cooperative** shall meet at such times at the project site as the Chairman shall determine and shall regulate its own procedure.
9. (1) The distribution of water for irrigation through the irrigation system shall be carried out by Water Bailiffs appointed **by the Management.**
- (2) The farmers shall -
- (a) close or open inlets to their plots as directed by the Management; and
 - (b) report any damage to the irrigation installation to **any member of the Management or Water Bailiffs.**
- (3) The Manager shall -
- (a) **guide** the farmers in scientific methods of farming; and
 - (b) **facilitate the supply of** farm inputs to the farmers when such inputs are available.
10. Every farmer shall -
- (1) (a) pay for farm inputs when supplied;
 - (b) be charged some **administrative fee as shall be determined by the Authority;**
 - (c) **be charged land development fee as shall be determined by the Authority;**
 - (d) be charged such fees as may be determined by **the Project and**

- approved by the Authority for the water provided for irrigation and operation and maintenance of the Project installation.**
- (2) The farmers shall sell a percentage of their produce which will be estimated to repay loans obtained from the local banks, to the bank or **the Management.**
11. (1) There shall be established by the Management a Disciplinary Committee of the Project.
- (2) The Disciplinary Committee shall consist of the **Project Manager and at least two members each from GIDA and the Cooperative. Total number of the Committee shall be at least five.**
- (3) The Manager shall be the Chairman of the Disciplinary Committee.
- (4) The Disciplinary Committee shall investigate any infringement or alleged infringement of **any rules in these Regulations and any other directives issued by the Management,** and impose the appropriate penalty when necessary.
- (5) The Disciplinary Committee shall meet at such times and places as **shall be determined by the Committee and shall regulate its own procedure.**
12. (1) There shall be established by the Authority in respect of each project an Appeals Committee.
- (2) The Appeals Committee shall consist of
- (a) **a member of the Board;**
- (b) the Chief Executive of the Authority; and
- (c) a Deputy Chief Executive of the Authority.
- (3) The Appeals Committee shall consider cases of appeal arising out of the decisions of the Disciplinary Committee.
- (4) The Appeals Committee shall meet at such times and places as the Chairman shall determine and shall regulate its own procedure.
13. (1) The Authority shall provide to the Project as working capital and as money required for carrying out its functions such sums as the Authority may determine through its annual budget.
- (2) The funds of the Project shall include revenue accruing to it from its operations.
- (3) Every Manager shall not later than **the end of** each financial year submit to the Authority an annual report on the activities of the Management during **the year;** and detailed estimates of its revenue and expenditure for the next financial year.
14. (1) The Authority shall provide Internal Audit Services to all its irrigation projects.
- (2) The Internal **Audit Service** shall -
- (a) be responsible to the Authority for the performance of **its** duties;
- (b) at intervals of three months prepare a report on the internal audit **carried out during** the period of three months immediately preceding the preparation of the report and submit the report to the Authority;
- (c) make in each report such observations **as appear necessary to** the conduct of the financial affairs of the Management during the period to which the report relates; and

(d) Send a copy of each report **prepared to** the Authority.

15. (1) The Management of every Project shall keep proper books of account and proper records in relation thereto and the account books and records of the Management shall be in such form as **the Authority and the Auditor General** may approve.
- (2) The financial year of the Management shall end on the 31st day of December in each year.
- (3) The books and accounts of the Management shall each year be audited by the Auditor General
- (4) The Auditor General shall forward a copy of the report to the Authority within three months at the end of each financial year.
- Any person who -
- (a) tampers with the irrigation network; or
- (b) acts in breach of any of the terms of these Regulations or directives by the Management; shall be liable to a pecuniary penalty of not less than **penalty units** or to expulsion from the Project or suffer both the penalty and expulsion.

16. In these Regulations unless the context otherwise requires
- “Agreement” means the Land Allocation Agreement set out in the Schedule to these Regulations;
- “agronomic practices” includes land prepared, distribution of inputs, pest and disease control,
- “Authority” means the Irrigation Development Authority;
- “Board” means the Board of the Irrigation Development Authority;
- “farm inputs” include seeds, fertilizers, pesticides and machine services;
- “irrigation network” includes plots, structures, roads, waterways, canals, drains and embankments;
- “Manager” means the Project Manager; and
- “Project” means an Irrigation Project which has been established by the Irrigation Development Authority on public land to utilize modern cultivation methods and cropping patterns with available water resources for intensive food production.

“business” means discussion and decision making on issues such as planning, implementation and evaluation of the activities on the Project, including operation and maintenance of irrigation facilities.”

“public irrigation scheme” means any irrigation project of which infrastructure is funded by government of Ghana, or on her behalf.

a “full time farmer” mean a farmer who spends most of his/her time on farming and resides in the community.

Schedule of L.I.1350

Land Allocation Agreement

THIS AGREEMENT is made this day of 20..... between the Irrigation Development Authority, a body incorporated under the laws of the Republic of Ghana (hereinafter referred to as the Authority) and (name and address of farmer) hereinafter referred to as the Farmer).

WHEREAS the Authority is the developer of the land and owner of installations of the (name of Project) Irrigation Project (hereinafter referred to as the Project).

WHEREAS the Authority has in accordance with the policy of the Government developed the Project for intensive irrigated agriculture;

WHEREAS the Authority has divided the Project into plots for allocation to farmers who have been found suitable by the Land Allocation Committee; and

WHEREAS the Farmer named herein-

- (i) has been found by the Land Allocation Committee to be a suitable person;
- (ii) has declared his willingness to participate in the Project; and
- (iii) has agreed to abide by the provisions of this Agreement.

1. The Farmer shall cultivate plot..... (insert in blocks number, acreage and other relevant information) allocated to him/her by the Land Allocation Committee.
2. The Farmer shall cultivate the plot according to the cropping programme of the Project.
3. The Farmer shall have the right to cultivate on the project for as long as he/she complies with the provisions of this Agreement.
4. The Farmer shall be liable for any damage caused by him/her or his/her agent, to the project.
5. In case of natural disasters, crop and land rotation, and the plot shall be reallocated.
6. The Farmer shall pay the Authority's annual administration fee of ¢..... per hectare to the Authority.
7. The Farmer shall pay land development fee of ¢..... per hectare per season for depreciation of the irrigation facilities to the Authority.
8. The Farmer shall pay Irrigation Service Charge of ¢..... per hectare per season for operation and maintenance of the irrigation facilities to the Authority.
9. The Authority shall determine the amount and the time for the payment which shall be subject to review from time to time.
10. The Authority may facilitate the supply and provision of farm services and inputs to the Farmers.
11. The Authority shall advise on the availability, quantity and quality of the services and inputs.
12. The Authority shall endeavour to provide the right quality and quantity of water to the Farmers.
13. This Agreement shall be valid for five years and may thereafter be renewed for a further period of..... years on terms to be determined by the Authority.
14. The Farmer may terminate this Agreement by giving two months written notice to the Authority before the beginning of the cropping season.
15. The Authority may terminate this Agreement only upon the adverse findings against the Farmer by the Disciplinary Committee or the Appeals Committee.
16. In the case of illness or death of a Farmer the Authority shall consider the best interest of his/her family when re-allocating the plot.
17. Any dispute arising out of this Agreement shall be referred to the Disciplinary Committee.

- 18. Any person aggrieved by the decision of the Disciplinary Committee may appeal to the Appeals Committee.
- 19. **An appeal against the decision of the Appeals Committee shall lie to the High Court.**

Witness and Signature

IN WITNESS WHEREOF the Authority has caused the hand and seal of its lawfully authorised representative and the Farmer has caused his hand and seal hereunto the day and year written above.

SIGNED, SEALED AND DELIVERED

by the Chief Executive or his authorised representative for the AUTHORITY
in the presence of

.....
PROJECT MANAGER for Chief Executive

Name and address of witness

SIGNED, SEALED AND DELIVERED

by the FARMER in the presence of
..... }
..... }

.....

Chairman of farmers Cooperatives Society

FARMER

Name and address of witness

Date of Gazette notification: 20.....

Annex 3: 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			→
	Surface water extraction and peri-urban agric	Small Holder			→
3: EXISTING ASSETS	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			→

