

***World Bank***

***Ministry of Irrigation and Water  
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***Privatization Commission***

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**PUBLIC PRIVATE  
PARTNERSHIP OPTIONS  
STUDY AND AWARENESS  
RAISING FOR IRRIGATION  
INVESTMENT IN MALAWI**

***Final report***

*February 2011*



# **PUBLIC PRIVATE PARTNERSHIP OPTIONS STUDY AND AWARENESS RAISING FOR IRRIGATION INVESTMENT IN MALAWI**

## **FINAL REPORT**

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## LIST OF ABBREVIATIONS AND ACRONYMS

BOO	Build Operate Own (type of PPP model)
BOT	Build Operate Transfer (type of PPP model)
CAPEX	Capital Expenditures
DB	Design Build (type of PPP model, other name for EPC)
DBO	Design Build Operate (type of PPP model, combining EPC and O&M contracts)
EPC	Engineering Procurement Construction (type of PPP model)
GoM	Government of Malawi
IFC	International Finance Corporation (entity of the World Bank Group)
KSCGS	Kasinthula Sugar Cane Growers Scheme
MAFS	Ministry of Agriculture and Food Security
MIGA	Multilateral Investment Guarantee Agency (entity of the World Bank Group)
MIWD	Ministry of Irrigation and Water Development
MPD&C	Ministry of Planning, Development and Cooperation
MWERA	Malawi Water & Energy Regulatory Authority
OPEX	Operational Expenditures
O&M	Operation and Maintenance
PC	Privatization Commission
PPIAF	Public Private Infrastructure Advisory Facility
PPP	Public Private Partnership
SVCGT	Shire Valley Cane Growers Trust
SVIP	Shire Valley Irrigation Project

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## UNITS

### EXCHANGE RATE

Local Currency = Malawi Kwacha (MK)

1 USD = 150 MK

### WEIGHTS AND MEASURES

1 hectare (ha) = 2.417 acres (ac)

1 kilogram (kg) = 2.204 pounds (lbs)

1,000 kilograms (kgs) = 1 metric ton (MT)

1 Kilometer (km) = 0.62 mile

## EXECUTIVE SUMMARY

### A- MAIN ACTIVITES PERFORMED

The assignment was awarded on 29<sup>th</sup> of July 2010. The inception mission commenced on Tuesday 7<sup>th</sup> of September 2010. It ended on 7<sup>th</sup> October 2010 with the submission of the Inception Report, which was approved third week of October 2010.

The Questions and Answers Sessions were organized and conducted between the 9<sup>th</sup> and the 19<sup>th</sup> of November 2010 (see details on Annex 2). A study tour has been organized in Morocco between 13<sup>rd</sup> and 17<sup>th</sup> of December 2010. A National Worskhop was held on Tuesday 25<sup>th</sup> of January 2011 to discuss findings of the draft final report.

### B- NEEDS FOR LEGAL FRAMEWORK IMPROVEMENT FOR PPP DEVELOPMENT IN IRRIGATION SECTOR IN MALAWI

**With the promulgation of the three main legal documents (PPP bill, Land Act and Water Resources bill), it is foreseen that the main potential constraints for the development of PPP in irrigation sector in Malawi will be addressed.**

#### ***Promulgation of the 2010 PPP bill***

The implications of these findings on the design of a PPP option under the Project are:

- ▶ Any form of PPP can be transacted in Malawi for an irrigation development project, including for SVIP; and
- ▶ There is urgent need to expedite the enactment of the PPP Bill, which will consolidate and reinforce properly the existing laws that already allow PPP transactions.

The legal basis for a PPP transaction and its credibility to investors could be greatly enhanced if the Government enacts or amends laws or regulations that set the basic principles needed to implement the PPP transactions or that clarify some areas of uncertainty. Such enactments or amendments should include:

- ▶ the PPP Bill including necessary provision that ensures that unsolicited bids could be handled. This issue is important for non-irrigation services (supporting services in agribusiness development like extension, support to marketing, etc.).
- ▶ provisions or regulation that:
  - Give Government powers:
    - to provide subsidies, if necessary, to cover the difference between the true cost of service and the affordable charges to farmers. Subsidies can be given directly on the infrastructure development investments or on the charges on the infrastructure services;
    - to establish a subsidy fund. This would give investors assurance that funds will be available for subsidy payments. In some jurisdiction, such a fund is called an Infrastructure Financing Facility (IFF), Infrastructure Development Fund or Project Development Fund;



- To guarantee private sector investment and financing arrangements, including by securing loans from local and international banks.

The drafting and enactment of those new laws and regulations would, of course, be time consuming and take long time. However, initiating the process would demonstrate and solidify the Government's commitment to PPPs in agriculture and irrigation.

At the moment of submission of the present report, this PPP bill is foreseen to be discussed during the January 2011 session at the Parliament.

### **Land issues**

As described before, the three following facts are foreseen as major constraints for foreign investors:

- Restriction **on sale of land to foreigners** by according priority (first option) to Malawians.
- Reduction from **99 years leasehold tenure to 50 years**.
- **Prohibition for non-nationals to own freehold land** alone. However, it is worth noting that the land policy encourages noncitizens wishing to invest in freehold land to do so in joint venture with citizens of Malawi as part of the Government's economic empowerment initiative.

These concerns will be addressed with the promulgation of the new Land Act. At the moment of submission of the present report, this new Land Act is to be analyzed by the Legal Affairs Committee of Cabinet.

### **Promulgation of Water Resources Bill**

This promulgation will address various important concerns for the implementation of an irrigation project in general and for PPP arrangement in particular such as:

- ▶ providing the WUAs with a legal personality,
- ▶ creating proper conditions for multipurpose investments management and efficient institutional arrangements (National Water Resources Authority)

At the moment of submission of the present report, this Water Resource bill is foreseen to be analyzed by the Cabinet

## **C- DISCUSSION WHETHER IRRIGATION AND NON-IRRIGATION SERVICES ARE TO BE INCLUDED IN THE SAME PPP CONTRACT**

Two types of services can be distinguished for the purpose of this study:

- ▶ **"Irrigation services"** including mainly the following functions: design, construction, cofinancing capital cost (in some PPP options), operation and maintenance. Even if the generic term "irrigation services" will be used in the report, the private operator could be asked to provide water from the hydraulic assets he will manage for other uses than irrigation like water supply. This will not change the nature of the services provided by the operator.
- ▶ **"Supporting services for agricultural production (non-irrigation services) to smallholders and outgrowers"** will refer to the activities listed in the table: support to development of irrigated areas in some cases, support to input supply, extension, processing and marketing services. In the document, those services are also called "non-irrigation services".

The following table shows different options for PPP transaction according to the functions performed by the private operator. In each cell is computed the party in charge of the functions: private, public or shared responsibilities (like for financing).

Potential Functions under responsibility of private operator	Options for PPP transaction models					
	1- Concession on Irrigation services + supporting services in agriculture	2- Concession on Irrigation services	3- Lease / Affermage contract + supportings services in agriculture	4- Lease / Affermage contract	5- Supervision and O&M contract for irrigation services + supporting services in agriculture	6- Supervision and O&M contract
<b>A. Irrigation services</b>						
<b>1. Final design and construction</b>						
Final Design and preparation of bidding documents for construction	Private	Private	Public or Private (in another contract)	Public or Private (in another contract)	Public or Private (in another contract)	Public or Private (in another contract)
Construction	Private	Private	Private (in another contract)	Private (in another contract)	Private (in another contract)	Private (in another contract)
<b>2. Supervision of construction</b>						
	Private	Private	Private (in another contract)	Private (in another contract)	Private	Private
<b>3. Financing of capital costs</b>						
	Private / Public / Beneficiaries	Private / Public / Beneficiaries	Private (?) / Public / beneficiaries	Private (?) / Public / beneficiaries	Public / beneficiaries	Public / beneficiaries
<b>4. Operation and maintenance of Irrigation and Drainage assets</b>						
Transfer of main infrastructures after completion of construction	Private	Private	Private (in another contract)	Private (in another contract)	Private (in another contract)	Private (in another contract)
Operation & Maintenance	Private	Private	Private	Private	Private	Private
Renewal (and / or renewal fund to contribute)	Private / Public	Private / Public	Public	Public	Public	Public
<b>B. Supporting services for agricultural production (non-irrigation services) for smallholders and outgrowers</b>						
Irrigable areas development	Private / Public	Public or Private (in another contract)	Public / Private	Public or Private (in another contract)	Public / Private	Public or Private (in another contract)
Support to inputs supply	Private		Private		Private	
Extension services	Private		Private		Private	
Support to processing & marketing	Private		Private		Private	
<b>Comments</b>	Similar to Brazilian initiatives	Similar to Moroccan and Egyptian initiatives	-	-	-	Similar to Ethiopian initiative

The previous table proposes 6 options:

- ▶ Three options are designed with irrigation services and non-irrigation services functions in the same PPP contract: options n°1, 3 and 5. The other options will separate the two kind of services (n°2, 4 and 6).
- ▶ Options 1 and 2 are with a concession for irrigation services
- ▶ Options 3 and 4 are on lease / affermage arrangements for irrigation services (no financing function for the private but he will take the risk of demand and payment because his revenues will come from the irrigation fees collected from the farmers)
- ▶ Options 5 and 6 are on O&M (or management) contract arrangements for irrigation services (no financing function for the private no risk of demand because his revenues will come from the Contracting Authority who will take the demand and payment risks).

One single PPP contract for irrigation and non-irrigation services, will have the advantages of:

- ▶ having an unique bidding process with savings of time and resources
- ▶ having only one private partner to deal with for the Contracting Authority
- ▶ limiting risk for the private partner with diversification of activities and revenues.

But will also have the following drawbacks:

- ▶ limit the development of non-irrigation services because only one contract is awarded although, in theory, there is a potential for development of several chain value of cash crops in the project area
- ▶ create a risk of selection of a not performing operator. Selecting the best private partner should be done on the most risky function (i.e. on irrigation services) which means that the successful bidder will not be necessarily the best bidder for the non-irrigation services

- ▶ generate extreme dependence for smallholders: water and all the other inputs and services will be provided by the same private company
- ▶ oblige the Contracting Authority to select private operator through a competitive bid although the PPP for non-irrigation services could be awarded under simpler procedures
- ▶ create some difficulties for elaboration, negotiation and regulation of contract having two very different activities (with different modalities of revenues, different performances indicators, etc.).

In conclusion, due to those drawbacks, **the consultant recommends to separate contracts on irrigation and non-irrigation services** which would allow the contracting authority (ies):

- ▶ to have one private partner for irrigation services (selected on the best proposal)
- ▶ to have one or several partners (agribusiness companies) for aggregation PPP contracts.

## D- SHIRE VALLEY IRRIGATION PROJECT

### D1 PPP Feasibility for Shire Valley Irrigation Project

The total CAPEX of the SVIP estimated by the Consultant is 514 M. USD<sub>2010</sub> including:

- ▶ Phase I with 46.9%, Phase II with 53.1%
- ▶ Secondary network (pipelines): 13.6% (Phase I) + 10.5% (Phase II) of total CAPEX. A discussion will be done in order to assess the possibility of beneficiaries contribution to this investment.
- ▶ Tertiary and on-field investments: more than 40%. Part of this capital costs will be covered directly by the beneficiaries (Illovo and agro-business companies, for instance).

Item per Phase	Estimate (in Thousands USD)	%
<b>Phase I</b>		
Intake	5 213	1.0%
Feeder canal	63 022	12.3%
Pipelines	69 900	13.6%
Tertiary and on-field works and equipment	103 078	20.1%
<i>Sub-total Phase I</i>	<i>241 212</i>	<i>46.9%</i>
<b>Phase II</b>		
Bangula canal	114 341	22.3%
Pipelines	54 000	10.5%
Tertiary and on-field works and equipment	104 227	20.3%
<i>Sub-total Phase II</i>	<i>272 568</i>	<i>53.1%</i>
<b>TOTAL (in M. USD)</b>	<b>513 780</b>	<b>100.0%</b>

It is considered that the PPP contract doesn't include tertiary infrastructures and on-field works and equipment (will be financed by the beneficiaries, either directly like Illovo Group of agribusiness companies, or by other public and / or international funding). Consequently, the PPP contract investments reach 309 M. USD<sub>2010</sub> in constant prices and 332 M. USD in current prices.

	Th USD (current prices)	Th USD 2010 (constant prices)
<b>PHASE I</b>		
Intake Phase I	5,477	5,213
Feeder canal Phase I - 35 m3/s - 30 km	66,223	63,022
Pipe 1 - 7 700 ha pivot, (optimized)	24,514	23,100
Pipe 2 - 5 600 ha, (optimized)	17,828	16,800
Pipe 3 - 5 600 ha, (optimized)	18,185	16,800
Pipe 4 - 4 400 ha, (optimized)	14,288	13,200
<b>Subtotal</b>	<b>146,516</b>	<b>138,134</b>
<b>PHASE II</b>		
Bangula canal	123,783	114,341
Pipelines optimized Phase II	58,459	54,000
<b>Subtotal</b>	<b>182,242</b>	<b>168,341</b>
<b>O&amp;M ASSETS FOR THE PRIVATE OPERATOR including renewal</b>		
Vehicules (4*4)	1,947	1,500
Computer / softwares	187	144
Offices equipment	175	135
Workers and waterman equipment	0	0
Full equipment workshop	195	150
Contingencies (15%)	375	289
<b>Subtotal</b>	<b>2,879</b>	<b>2,218</b>
<b>TOTAL</b>	<b>331,637</b>	<b>308,694</b>

The table hereafter summarizes the findings of comparison between concession and affermage options.

Main itens for scenari comparison	Options for PPP transaction models	
	2- Concession on Irrigation services (base case: 18 USD/ 1,000 m3)	4- Lease / Affermage contract (base case scenario: 10 USD / 1,000 m3)
<b>1. Financing risk</b>	<b>Private / Public</b>	<b>Public</b>
1.1 Participation of private to capital costs	Participation to the CAPEX is 21% or 70 M. USD	0% for CAPEX, only for O&M assets
1.2 Public funding (M. current USD)	231 M. USD (base case)	285 M. USD (base case)
1.3 Beneficiaries contribution to capital costs (M. current USD)	29.5 M. USD (base case)	43.7 M. USD (base case)
<b>2. Fiscal impacts</b>		
2.1 Subsidies for PPP contract Investments (NPV@5%, M. constant USD)	-190 M USD	-235 M USD
2.2 Income tax (NPV@5%, M constant USD)	25 M USD	6 M USD
2.3 Fees for Contracting Authority (NPV@5%, M constant USD)	0 M USD	57 M USD
2.4 Total Impact on State budget (NPV@5%, M constant USD)	-165 M USD	-172 M USD
2.5 Impact on State budget : investment subsidies – tax income - fees for Contracting Authority (NPV@5%, constant USD/1,000m <sup>3</sup> )	16,1 USD/1,000m <sup>3</sup>	16,7 USD/1,000m <sup>3</sup>
<b>3. Attractiveness for private sector</b>		
3.1 Risks	High	Medium
3.2 Turn-over perspectives (before tariff indexation, year 30)	15 M. USD / year	8.5 M. USD /year
3.3 Equity (M current USD)	14 M. USD	0.8 M. USD (to finance O&M assets)

The previous table confirms that concession would transfer more risks to the private partner (21% of CAPEX / 70 M. USD in current prices) but the tariff of SVIP irrigation fees could be higher.

Public contribution is higher for affermage (285 M. USD against 231 M. USD) and the impact on State Budget is higher (16,7 USD / 1,000 m<sup>3</sup> against 16,1 USD / 1,000 m<sup>3</sup> for concession).

The consultant would recommend to deepen the analysis of these two options in the PPP Feasibility study **giving priority to the option of concession** if tariff is confirmed to be affordable for the final users.

## ***D2- Other issues related to the success of SVIP development in Public Private Partnership***

Among the other issues to be detailed in the following studies for SVIP development are:

### **THE LAND TENURE IN SVIP AREA**

The issue of land tenure in the area involves strategic interests between:

- ▶ local communities
- ▶ Illovo Group and its expansion plan
- ▶ Potential other investors (agribusiness companies) who will be attracted to invest if land is secure and if they can have access to consolidated area of land (probably several hundreds or thousands hectares).

### **THE INSTITUTIONAL ASPECTS**

The development of SVIP in PPP may require the creation of a new entity or require the reorganization of the existing entities to:

- ▶ Take responsibilities for the development of all the supporting services not included in the PPP contract for irrigation services. This concerns all the supporting services to agricultural development (either on PPP or other institutional arrangements): extension, credit, research, social services, etc.
- ▶ Be in charge of land management if it is decided to have a regulator for land issue in the area. This entity could be the landlord responsible for acquiring the land for irrigation and sale or lease contract (99-year) to large commercial farmers and small holder producer companies, as well as to carry out the coordination, planning development and monitoring of the entire SVIP project. It will be important that this entity does not become involved in any major commercial activity to expose GoM to commercial risks such as involvement in the provision of farm inputs and agricultural support services.
- ▶ Act as Contracting Authority if the Ministry of Irrigation and Water Development intends to delegate this function to a region-based entity.

### **THE ENERGY AND WATER BALANCE**

The SVIP will have some impact on water and energy balance (increase of water abstraction upstream Kapichira, decrease of energy consumption by reduction of river withdrawals, creation of surplus of energy from the sugar plant, etc.). These impacts need to be quantified and taken into account in the financial analysis of the SVIP.

## THE TECHNICAL DESIGN UPDATE OF SVIP

The consultant recommends the following aspects to be analyzed in depth in the design update study:

- ▶ Location of intake. Hamilton Falls or Kapichira reservoir with the potential capital costs savings (9 km shorter) and whether it will create impacts on ESCOM activities
- ▶ Cropping pattern and water demand requirements. The two studies had shown huge differences of results: 20 m<sup>3</sup>/s of difference between the two designs for the same equipped area of 40,000 ha
- ▶ Course of the feeder canal. High level (140m contour) as proposed in the review with the clear advantages of having pressurized system or low level option (120m contour)
- ▶ Optimized course and regulation of the feeder canal. If the high level canal option is technical, economical and environmentally feasible, there are probably possibilities of optimizing the course proposed by Coyne & Bellier in order to shorten siphon pipes' lengths with appropriate analysis of the balancing dams.
- ▶ Design and course of the secondary distribution. The Coyne & Bellier design review proposes four pipes with very long ones especially the pipe n°4 (26.8 km) and the pipes n°2 & 3 (17km). This could probably be optimized if these pipes are connected to the Bangula canal instead of being connected to the main feeder canal at chainage 30 km.
- ▶ Establish energy balance for the Project
- ▶ Revise the layout of Bangula canal and assess feasibility of an alternative design which will not cross through Lengwe National Park
- ▶ Confirm the boundaries of the command area.

## INTRODUCTION

The overall objective of the present assignment is to support the Government of Malawi in conceiving **viable PPP models for financially sustainable irrigation development and management** in general and carry out specific options analysis for starting a PPP process for the proposed **Shire Valley Irrigation Project, SVIP**. This will build on the generic PPP framework that has recently been developed by the Privatization Commission and translated into specific sector arrangements; also with support from PPIAF.

The specific objectives of the present assignment are to:

- ▶ Conduct awareness raising and capacity strengthening activities among key line Ministries, private investors and water users (small and medium-scale farmers) about different options and modalities for PPP in irrigation infrastructure development and management;
- ▶ Identify potentially promising and economically viable PPP options for the proposed Shire Valley Irrigation Project (SVIP) – to be discussed with main stakeholders and to inform about the development of a specific PPP transaction model for this scheme. This objective corresponds to a preliminary assessment (prefeasibility stage) to assess the feasibility of PPP approach for the SVIP within a given set of assumptions and using available data gathered on previous feasibility studies.

The assignment itself was awarded, by the World Bank to the French consulting company BRL ingénierie, the Consultant, on 29<sup>th</sup> of July 2010.

The inception mission commenced on Tuesday 7<sup>th</sup> of September 2010. It ended on 7<sup>th</sup> October 2010 with the submission of the Inception Report, which was approved third week of October 2010. The Consultant continued carrying out literature review and consultations and prepared communication materials for questions and answers sessions for conducting awareness raising, capacity strengthening and further consultations with stakeholders, between mid October to first week of November 2010.

The Questions and Answers Sessions were organized and conducted between the 9<sup>th</sup> and the 19<sup>th</sup> of November 2010. The notes for these meetings are summarized in sections 2.1.1 and recommendations from session in 2.2 and details are in Annex 1. The PPP model options for the SVIP are presented in chapter three.

A National Workshop was held on 25<sup>th</sup> of January 2011 in Lilongwé for presentation and discussion of the contents of the draft report.

This final report was elaborated on basis of written comments received by the main stakeholders and of recommendations expressed during the National Workshop.

# 1. IRRIGATION SECTOR AND PPP DEVELOPMENT OVERVIEW

## 1.1 PUBLIC IRRIGATION DEVELOPMENT IN MALAWI

### 1.1.1 Overview of Public Irrigation Development in Malawi

Historically, the irrigation development across the country has predominantly been spearheaded by Government. The first scheme was established in late 1940s at Limpasa in Nkhata Bay, which remain a Government scheme till today. The Government continued constructing irrigation schemes in Karonga, Nkhata Bay, Nkhotakota, Salima, Mangochi, Zomba, Chikwawa and Nsanje districts. In recent years, some few irrigation schemes have been developed by the Government throughout the country with irrigated crops that include vegetables but still targeting smallholder farmers. It is difficult to get the exact area under public irrigation but it is estimated some 20,000 hectares have been developed by the Government where some form of irrigation is being practised.

The development of these schemes has targeted smallholder farmers and irrigation of food security crops, predominantly rice. **The operation and maintenance of the irrigation schemes has also remained largely under responsibility** of the Government and not beneficiary communities. In recent years, attempts have been made for the beneficiary communities to take over the running of the schemes, **through transfer of irrigation management to Water Users Association**. In this regard, some very few schemes have been handed over to beneficiary communities after they had established Water Users Association, with the help of the Government and NGOs for capacity building,. The government has not yet targeted commercial farmers in providing irrigation services.

### 1.1.2 Challenges in Improvement of Irrigation Sector Performance

The problems of operation and maintenance of public irrigation have crippled the public irrigation sector performance. The Government resources are heavily being competed for in priority and critical areas of rain-fed agriculture, health services and education, leaving the irrigation sector without adequate resources for comprehensive operation and maintenance. Even the WUAs are not adequately empowered to take responsibility on irrigation services and related non-irrigation services. They are not fully legal entities and handicapped in mobilisation of resources and technical and administrative management services required to sustain vibrant irrigation schemes.

The Malawi's **Greenbelt Initiative**, with ambitions of having one million hectares under irrigation is a challenge for the public sector. The public sector, with less than 20,000 hectares that are inadequately managed, faces a serious challenge to make the Greenbelt Initiative a reality. This is compounded by the vision of Malawi's economy that dwells on turning the country from predominantly importing to predominantly exporting country with its economy based on agriculture production. The Government realizes that the future for irrigation in Malawi and realization of the predominantly exporting country vision (and the greenbelt initiative) will need strategic partnership with cooperating partners and the private sector in order to spur related and sustainable investments.



## 1.2 PRIVATE SECTOR INVOLVEMENT IN IRRIGATION DEVELOPMENT

### 1.2.1 Overview of Private Sector Irrigation Development in Malawi

The private sector has championed large scale irrigation in Malawi since the colonial days with tea farming in Mulanje and Thyolo being the pioneer in irrigation development. It now boosts more than 23 200 hectares of equipped irrigated fields. The largest equipped irrigation scheme in Malawi is the Nchalo Sugar Estate that belongs to Illovo Group. This scheme was initially established in 1965. The Illovo Group in Malawi now has 13 800 hectares under Nchalo Sugar Estate and some 6,000 hectares under Dwangwa Sugar Estate. It also has established sugar mills at Dwangwa and Nchalo, which also serve satellite cane growers such as the Kasinthula and Dwangwa Cane Growers Trusts, respectively. The mills also produce molasses which are used for production of ethanol at Ethanol Company and Press Cane Ltd in Dwangwa and Nchalo, respectively.

The Kasinthula and Dwangwa Cane Growers Trusts were established after “privatisation” of Kasinthula Irrigation Scheme and Dwangwa Sugarcane Smallholder Authority, respectively. Kasinthula Cane Growers Trust has 755 hectares and Dwangwa cane Growers has 2 670 hectares of equipped irrigation fields. The development and management of these 23 200 hectares of irrigated fields clearly show that the greenbelt initiative and indeed the future of irrigation in Malawi is in the hands of the private sector.

### 1.2.2 Challenges and Opportunities for Private Sector

The main challenges of the private sector in irrigation development is in strategizing itself as major player in the realization of Government’s vision of turning Malawi from a predominantly importing and consuming to a predominantly exporting nation. This is further complicated by more challenges including:

- ▶ Irrigation developments exclude or take place in the **absence of marketing and export services** such as food processing and packaging, transport services, etc.
- ▶ **Irrigated cropping lack diversity** and tend to be monopolistic. For example, large irrigation schemes specialise in sugar cane only and are vulnerable to drastic fluctuation of sugar markets, which makes the private irrigation developments vulnerable to market failures unless swift changes can take place to avert such market failures; The challenge is to diversify and introduce other high valued crops that compete favourably on local, regional and world markets;
- ▶ **Private irrigation services often entail development of water resources as water is not readily available for irrigation entrepreneurs.** This situation forces the private sector to spend resources on development of dams or expensive pumping systems which are not the core business of irrigation development and investments. The difficulties in accessing readily available water is, therefore, a challenge to private sector irrigation development and investment. This will require the Government to provide basic infrastructure and services such as dams, water transfer schemes and other water sources in order to have irrigation water readily available for the private sector. This is also essential for the greenbelt initiative so that the private sector can only invest in core business of irrigation rather than developing water resources on their own;
- ▶ Private irrigation developments and investments being done in an environment characterized by **land pressure** and a land tenure system requiring critical review. The review should lead to the development of appropriate and balanced land ownership distribution scheme between private sector and smallholder farmers. The challenge is to have **agreeable compensation framework and sustainable benefits to the communities** who would surrender their land to private sector so that they (displaced communities) **do not** deteriorate into further poverty after leaving the land; and

- ▶ **The inadequate (or lack of) capitalization** for the advancement, modernization and patronization of irrigation development in Malawi. This will require confronting the challenges of access to or lack of, resources by individuals, communities, private sector and the Government as lending institutions policies and practises do not favour irrigation investments. It would also require strengthening irrigation financing and providing incentives such as relief on private investment (from taxation structuring, subsidies in inputs and loan interests and guarantees, etc.), facilitating swift land acquisition and lease by private sector investors, etc.

However, the private sector irrigation developments and investments have opportunities that include:

- ▶ Availability of existing and proposed Government irrigation schemes that need the private sector investment services;
- ▶ Government's vision and policies of greenbelt and export oriented production promote private sector irrigation development and enterprise in the country;
- ▶ Public private partnership and related agreements and entrepreneurships which the Government and private sector have successfully implemented;
- ▶ A proposed Land bill that promises reformed land tenure system where land will either be private or public with the proposed elimination of customary land which will make it easier and faster for the private sector to acquire land; and
- ▶ Government's recognition of the private sector as the engine for irrigation development and greenbelt initiative implementation.

The challenges and opportunities for private sector under PPP arrangements need to be critically examined in order to deal with the present constraints but at the same time exploit the benefits. The following section is examining the legal regimes in Malawi and their influence on the development and operations of PPP.

### 1.3 ASSESSMENT OF LEGAL AND REGULATORY FRAMEWORK

The assignment included carrying out a preliminary assessment of the legislative and regulatory framework for private investment with specific reference to agriculture and irrigation. It also included identification of legal issues for resolution within the sector. In order to give advice on the PPP options in the sector, it is critical to identify any barriers and opportunities that the existing laws and regulations present for PPPs in the sector. Such assessment needs to cover both laws and regulations applicable to private investment in general, and those applicable to PPPs, agriculture, water and irrigation.

The legal and regulatory framework has therefore been analyzed in order to identify the opportunities or barriers this framework presents for implementing PPPs. We have also identified changes needed in Malawi's laws and regulations to facilitate the implementation of these PPPs. The first two sections present key findings and their implications for designing PPP options in the sector. Section 1.3.1.2 presents the recommended changes to improve the framework. The annex 1 presents a more in-depth analysis of the existing framework.

### 1.3.1 Analysis of main opportunities and constraints of the existing legal and regulatory framework for PPP development in irrigation sector in Malawi

After the review, assessment and analysis of the applicable policies, laws and regulations (see annex 1), the following are the main findings and are classified as opportunities or constraints for PPP development in irrigation sector Malawi.

#### 1.3.1.1 Opportunities

- ▶ *Constitutional guarantees.* It prohibits discrimination of persons in any form, it permits any person irrespective of nationality to acquire property, it entitles every person to fair and safe labour practices and to fair remuneration and it guarantees access to justice and legal remedies.
- ▶ *Vision 2020 and the Malawi Growth and Development Strategy.* Malawi's Vision 2020 sets out the long-term development perspective for Malawi, to be attained through a series of medium-term operational strategies. The current strategy is the Malawi Growth and Development Strategy – from Poverty to Prosperity (MGDS 2006-2011). The objective of the MGDS is to reduce poverty through sustained economic growth and infrastructural development, so as to transform the country from a predominantly importing and consuming economy into a predominantly manufacturing and exporting one. The revised MGDS emphasizes ten key priority areas and **irrigation and water development is ranked second** out of the ten priority areas.
- ▶ *Implementation of Private Sector Development Strategy.* The Government is making a great effort to increase private investment in Malawi's economy and is also committed to making the private sector an "engine" for Malawi's development.
- ▶ *2010 PPP Bill.* The preparation of the PPP Bill demonstrates Government's commitment to PPPs – the Bill covers a number of relevant issues such as:
  - *Types of PPP models/options,* that can be used, e.g. concept of Special Purpose Vehicle with flexibility in shareholders (fully private or public/private). This opens possibilities for PPP design;
  - *Delegation of government authority.* Clause 8 of the PPP Bill clarifies the right of the Government to delegate to a private firm the provision of water, irrigation, etc. services for public use
  - *Dispute resolution mechanisms.* One of the objectives is to reduce time and costs relating to dispute resolution: see clause 24 of the PPP Development Bill 2008 (PPP Bill) and the draft Arbitration Bill, 2010
  - *Types of Infrastructure.* clause 25(b) of the draft PPP Bill 2010 mentions the extraction, processing and distribution of water as one of the types of infrastructure that can be the subject of a PPP arrangement). In PPP Bill 2008, only potable water is explicitly mentioned.
- ▶ *Enactment of Irrigation Act.* The Act provides that the Irrigation Policy and Development Strategy is to be considered and treated as ranking paramount in the business of the Government. It also has provision for the sustainable development and management of irrigation, including facilitating establishment of WUAs.
- ▶ The Government may not compulsorily acquire private land, except in the case of leasehold land where the lessee chooses to surrender his interest - since a PPP investor would have private land interests either as a freehold or leasehold owner, there is no risk of the Government compulsorily acquiring his land.

- ▶ *Incentives for private investment.* There are many opportunities and incentives for private investment and these include:
  - *Tax holidays.* There are laws that provide income tax and custom tax holidays for certain investors, including investors in agro-industrial activities (for example, irrigation services), and investors establishing new enterprises in the country. For example, the Export Incentives Act provides incentives applicable under the Act. These include i) a 12% income tax allowance on taxable income derived from exports duty draw back on raw materials, including packaging, imported for the purpose of the manufacture, processing or production of Malawi products destined for export; ii) technical assistance offered to exporters by MEPC; iii) transport allowance of 25% of international transport costs on CIF basis; iv) duty waiver on imports of capital equipment used mainly in the manufacture of exports.
  - A review of the documents on concessions previously given by Government had specific incentives that were offered to the concessionaire. Some of the incentives that were given to the Railway line operator included the following:
    - The Government in the concession had assumed all the obligations of the organization including retrenchment costs of staff. This is relevant for an existing institution where Government is transferring its control over the assets to a private operator and the situation for the SVIP is slightly different as this is a new investment altogether.
    - It was agreed that the concessionaire will acquire the fuel for use in their engines free of all taxes, levies like fuel, duties or other fees collected by GoM or local communities. This was in consideration of the type of the sector. Rail does not use road hence it was requested for exemption of such levies like fuel road levy. In view of the SVIP costs of the investment would be procured without levying duties and VAT.
    - The concession also gave the concessionaire freedom to use the infrastructure without Govt interference, trading with its normal business practices.
    - Gave the concessionaire the freedom to set prices for all business transactions applicable to the agreement and exception was given to passenger fares which was to be approved by Government before implementing any changes in fares. This would be the same for SVIP investors in agribusiness like maize, rice, cotton production where Government may have to draw special agreements to commercial farming that will ensure profitability of the products.
    - The Govt also allowed the concessionaire quite enjoyment of the concession ie no interference.
    - That the concessionaire notifies Govt in cases of adverse regulatory changes that directly impact on the operations of the concessionaire.
  - GLENS that won the first concession on Malawi Lake Services (MLS) (provides lake transport services using government owned vessels) enjoyed similar incentives to the ones stated above on the railway lines services.
    - Long concession period has been given to the current concessionaire on MLS under BOO-built, operate and own.
    - Access to the government non-core infrastructure.
    - Agribusiness equipment attracts duty free status on farm implements like Tractors, ploughs, planters etc.
- ▶ No limit on foreign private investment.
- ▶ Remittance of dividends, or the entire capital on disinvestment, is permissible provided the investment was registered with an authorised dealer bank.
- ▶ *Protection of Investment* - Malawi is a member of the World Bank's Multilateral Investment Guarantees Agency (MIGA). The MIGA provides guarantees against (non-commercial) risks to enterprises that invest in member countries. Malawi is also a party to the World Bank treaty, "the International Convention on Settlement of Investment Disputes between States and Nationals of other States" (ICSID).

### 1.3.1.2 Constraints

The main constraints are :

- ▶ Restriction of access to land for foreigners. This is perceived by many foreign investors as a deterrent to investment with long gestation periods like the SVIP. The main constraints linked to existing Land Act 2004 are:
  - Restriction **on sale of land to foreigners** by according priority (first option) to Malawians.
  - Reduction from **99 years leasehold tenure to 50 years**.
  - **Prohibition for non-nationals to own freehold land**. However, it is worth noting that the land policy encourages noncitizens wishing to invest in freehold land to do so in joint venture with citizens of Malawi as part of the Government's economic empowerment initiative.
- ▶ *Immigration and Labour* – One constraint for many foreign investors is the difficulty in obtaining temporary employment permits (TEPs) and business residency permits (BRPs). All operations in the processing of these permits are manual and are carried out at the Immigration Headquarters in Blantyre, which is time-consuming. Under Business Environment Strengthening Technical Assistance Project (BESTAP), the Immigration Department is to be computerized. Work permits are granted based on a needs assessment
- ▶ *The strong position of Illovo on sugar chain value due to historical economical advantages*. This could be perceived as a constraint for attractiveness of new investors in this sector

### 1.3.2 Analysis of probable main concerns linked to the legal Framework for PPPs

The PPP options to be chosen for the agriculture and irrigation sector should in principle fit within the restrictions set by Malawi's existing legal framework. The legal framework for these PPPs should also give investors in the sector confidence that their business would operate in a legal environment that protects their investments.

This section examines the legal framework for these PPPs by responding to common and possible questions regarding:

- ▶ The Private investment and Participation legal framework;
- ▶ Water resources and their use for irrigation; and
- ▶ Incentives for private investment in irrigation development.

The investors might have questions when considering participating, as the private-sector party, in PPPs for agriculture and irrigation services.

#### 1.3.2.1 Private Sector Participation Legal Framework Questions & Answers

- (i) Investors Concerns on **foreign investment limits or minimum investments required** can be clarified as follows:
  - a. Malawi's Statement of Investment Policies of 1991 proclaims freedom to invest (no restrictions on ownership, size of investment, source of funds, and on sale in domestic and export markets). A revised National Investment Policy is pending;

- b. Restrictions on foreign investment are few. Small-scale prospecting and mining operations are reserved for Malawians and foreigners who have resided in Malawi for a minimum of four years. Restrictions also apply to industries whose operations pose health, environmental, and security concerns (including manufacture of firearms, ammunition, chemical and biological weapons, explosives, or involving hazardous waste and radioactive materials). The minimum investment is US\$50,000. Investment certificates are granted by the Investment Approval Committee, comprising various ministries and agencies (including the Malawi Revenue Authority) and
- c. There is a proposal in the draft Businesses Bill, 2010 and in the draft Revised Investment Policy to prescribe minimum capital requirements for investment by non-Malawians. The draft Bill and Policy also seek to reserve certain types of businesses to Malawians, but not in irrigation. Legal commentators have questioned the constitutionality of this proposal in light of the anti-discrimination clause in section 20 of the Constitution and Malawi's commitment to WTO.
- (ii) The clarifications on investors' concerns regarding questions on **whether particular PPP models are prescribed in the laws that the private sector has to abide** are in the following sentences. Presently, the law does not explicitly allow or disallow any specific PPP models. On a more positive note, the draft PPP Bill 2010 proposes that there be no restrictions on the types of PPP models. In some countries, regulations limit the types of PPP models that can be used. In Paraguay, for example, the water sector law requires that any form of PPP be limited to management contracts. In Ethiopia, the laws do not explicitly allow or disallow any specific PPP models.
- (iii) The investors' concern on **restrictions of land acquisition and ownership by foreigners** are legitimate. Many private sector investors have expressed concern with the promulgation of the Land Amendment Act 2004, which has introduced significant changes in the management of land. The changes include restriction of sale of land to foreigners by according priority (first option) to Malawians, reducing the 99 leasehold tenure to 50 years and not permitting non-nationals to own freehold land. This is perceived by many foreign investors as a deterrent to investment in industries with long gestation periods. However, it is noteworthy that the land policy encourages noncitizens wishing to invest in freehold land to do so in joint venture with citizens of Malawi as part of the Government's economic empowerment initiative; and,
- (iv) The questions on what would be **Government entity to be the contracting Authority to PPP contract and whether such entity has the right to enter into contract for irrigation or non irrigation service in an Irrigation PPP contract**, can be clarified in short and to the point. Ministry of Irrigation and Water Development could act as a contracting authority to a PPP contract. Part III of the PPP Bill seeks to provide explicit authority for the Ministry to enter into such a contract.

### 1.3.2.2 Water Resources Permits and Charges Questions & Answers

- (i) The clarifications on investors' questions **regarding rules and regulations of permits and fees/charges for waterworks and water resources utilisation** are centred on existing laws and are stated as follows:
- a. The relevant rules are set out in the Water Resources Act and the Waterworks Act, which state, among others, that every waterworks and water abstraction should have water right or permit issued by the Minister responsible for water resources;
  - b. Part VII of the Waterworks Act empowers the Board to levy and enforce payment of rates. The Board may make such charges as are approved, within reasonable time, by the Minister for the supply of quantities of water measured by meter, rental of meters or provision of other services. The annual levy is to be raised on premises (as opposed to the owners or occupiers of these premises). The charges are to be levied and enforced in accordance with rules made by the Minister. It might be that a foreign private investor might not be inclined to leave tariff determination to the discretion of the regulator outside the PPP contract terms and conditions. However, this is applicable to water supply for domestic and municipal use and not raw water for irrigation. This has been covered in the new Water Resources Bill, where the proposed National Water Resources Authority is expected to set tariffs for raw water; and
  - c. Both 2008 and 2010 PPP Bills (Clauses 28 and 70) provide that the respective responsible sector regulators shall subject PPP arrangements to consistent regulation to ensure that the PPP arrangements are being managed in such a way that they are achieving the purpose for which they were established and are giving maximum returns. This provision implicitly raises the question of what is to happen where a sector does not have a regulator as such. Clearly, the presence of sector regulator is helpful but, it is submitted, the absence of such an entity is not fatal. What is important is that parties must ensure that the PPP contract complies with the relevant laws.
- (ii) The **questions regarding rules and regulations for establishment and functioning of Water Users Association**, are clarified as follows. The Irrigation Act contains provisions meant to facilitate establishment of irrigation management authorities for beneficiary communities to take over the smallholder irrigation schemes under their use. The focus in such authorities is to take over irrigation services and limited maintenance of the scheme. The draft Water Resources Bill 2010 on the other hand, seeks to provide a comprehensive framework on WUAs. For example, there are clear rules on how WUAs should organize themselves, the type of legal entity that should be adopted, the rights and obligations of users, as well as the rights of the association to own assets.

### 1.3.2.3 Government Incentives Questions & Answers

- (i) The clarifications on investors' questions **regarding Government Incentives on Private Sector and PPP Investments** are centred on existing laws and are stated as follows:
- a. The Government provides some guarantees for foreign investors ;
  - b. The Government is open to foreign investment and foreign investors are generally granted national treatment. The Constitution protects investment, irrespective of ownership. In this regard, when PPP contracts are signed, the private sector are guaranteed the sanctity and enforceability of their contract with the Government. This is confirmed by the following guarantees from Government:
    - i. As a member of the WTO, Malawi has made a number of commitments including those on private sector investments;
    - ii. Malawi is a member of the World Bank's Multilateral Investment Guarantees Agency (MIGA). The MIGA provides guarantees against (non-commercial) risks to enterprises that invest in member countries.
    - iii. Malawi has also signed the World Bank treaty, "the International Convention on Settlement of Investment Disputes between States and Nationals of other States" (ICSID);and
    - iv. Malawi recognizes that one other way for increasing investor's confidence would be for it to sign the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards. In this regard, Malawi has revised its Arbitration Act to be in line with the New York Conventions.
- (ii) **The question on whether there are incentives to investors in a project like that of PPP** (for instance, tax holidays or tax exemptions) is answered in the following bulletins.
- a. Malawi offers a number of incentives for investment in specific industries as well as for export industries. Incentives include customs-duty and tax concessions and exemptions (section (1)(iii)(c)), VAT exemptions (section (1)(v)), for export-oriented industries (section (2)(iv)), and for those operating under an EPZ status (section (2)(v)).
  - b. Other incentives include 100% investment tax allowance on qualifying expenditure (detailed in the tariff schedule) on new buildings and machinery; tax allowance for manufacturing companies to deduct all operating costs incurred up to 25 months prior to the start of production; allowance to carry forward losses for up to seven years, and an additional 15% allowance if the investment is in a designated part of the country.
  - c. In the budget speech for 2008, Malawi announced a shift from a discretionary incentives system to an automatic incentives system. As a result, as long as the applicant's accounts are in order, and all the eligibility conditions for the incentive have been met, then the incentives are applied automatically.



### 1.3.3 Conclusions on the legal framework improvement for PPP development in irrigation sector

#### PROMULGATION OF THE 2010 PPP BILL

The implications of these findings to the design of a PPP option under the Project are:

- ▶ Any form of PPP can be transacted in Malawi for irrigation development project, including for SVIP; and
- ▶ There is urgent need to expedite the enactment of the PPP Bill, which will consolidate and reinforce properly the existing laws that already allow PPP transactions.

The legal basis for a PPP transaction and its credibility to investors could be greatly enhanced if the Government enacts or amends laws or regulations that set the basic principles needed to implement the PPP transactions or that clarify some of areas of uncertainty. Such enactments or amendments should include:

- ▶ the PPP Bill including necessary provision that ensures that unsolicited bids could be handled. This issue is important for non-irrigation services (supporting services in agribusiness development like extension, support to marketing, etc.).
- ▶ provisions or regulation that:
  - Give Government powers:
    - to provide subsidies, if necessary, to cover the difference between the true cost of service and the affordable charges to farmers. This can be direct on the infrastructure development investments or the charges on the infrastructure services;
    - to establish a subsidy fund. This would give investors assurance that funds will be available for subsidy payments. In some jurisdiction, such a fund is called an Infrastructure Financing Facility (IFF), Infrastructure Development Fund or Project Development Fund;
    - To guarantee private sector investment and financing arrangements, including in securing loans from local and international banks.

Drafting and enactment of these new laws and regulations would, of course, be time consuming and take long time. However, initiation of the process would demonstrate and solidify the Government's commitment to PPPs in agriculture and irrigation.

At the moment of submission of the present report, this PPP bill is foreseen to be discussed at the January 2011 session at the Parliament.

#### LAND ISSUES

As described before, the three following facts are foreseen as major constraints for foreign investors:

- Restriction **on sale of land to foreigners** by according priority (first option) to Malawians.
- Reduction from **99 years leasehold tenure to 50 years**.
- **Prohibition for non-nationals to own freehold land** alone. However, it is worthy noting that the land policy encourages noncitizens wishing to invest in freehold land to do so in joint venture with citizens of Malawi as part of the Government's economic empowerment initiative.

These concerns will be addressed with the promulgation of the new Land Act. At the moment of submission of the present report, this new Land Act is to be analyzed by the Legal Affairs Committee of Cabinet.

## PROMULGATION OF WATER RESOURCES BILL

This promulgation will address different important concerns for the implementation of an irrigation project in general and for PPP arrangement in particular such as:

- ▶ providing the WUAs a legal personality,
- ▶ creating proper conditions for multipurpose investments management and efficient institutional arrangements (National Water Resources Authority).

At the moment of submission of the present report, this Water Resource bill is foreseen to be analyzed by the Cabinet

**With the promulgation of these main three documents (PPP bill, Land Act and Water Resources bill), it is foreseen that the main potential constraints for the development of PPP in irrigation sector in Malawi will be addressed.**

## 1.4 ANALYSIS OF STAKEHOLDERS AND OUTPUTS OF PPP STUDY

### 1.4.1 Overview of Stakeholders and Interests

The main stakeholders of the public private partnership in irrigation development are grouped into four categories: i) policy and legal environment players; ii) facilitators and implementers; iii) the potential private sector candidates for the PPP transactions, and iv) the cooperating partners.

The **policy and legal environment players** include the Office of the President and its Greenbelt Initiative office and its agency of Privatisation Commission; The ministry of Development Planning and Corporation; the Ministry of Finance and its agency of Malawi Investment Promotion Agencies; and Ministry of Justice and Constitutional Affairs. These institutions are assisted by representatives on the ground such as the District Assemblies and the traditional chiefs.

The **facilitators are the public institutions** that deal with irrigation and related issues and facilitate releasing irrigation services and related resources and services for establishing public private partnerships. These include Ministry of Irrigation and Water Development and its Water Resources Board, Ministry of Agriculture and Food Security, Ministry of Lands, Trade and Industry, Ministry of Mines, Natural Resources Energy and Environment and its Malawi Water Energy Regulatory Authority. The NGOs and parastatal (Government) companies operating in the field of the above ministries are also in the category of facilitators and implementers of PPP.

The **potential private sector candidates** are companies that provide or use irrigation and non irrigation services likely to be offered in PPP. These in Malawi include the Illovo Group, Press Cane and Ethanol Company that produce ethanol from sugar molasses, Dwangwa and Kasinthula Cane Growers Trusts and their companies. It also includes Malawi Chamber of Commerce and Industries, MCCI, that coordinates and represents the commerce and industrial private companies and its member institutions.

The **cooperating partners** are the donors and financing communities that loans or grants for funding or providing technical and financial assistance to PPP transactions. These include donors like USAID, UKAID, EU, AfDB, World Bank, JICA, FICA and other international donors and banking institutions like DBSA. They also include local banks and lending institutions, which are also considered cooperating partners.

The above stakeholder analysis influenced the selection and composition of the participants to questions and answers sessions for awareness raising and capacity strengthening. The details of these stakeholder institutions and respective officials that participated are in chapter 2.

### 1.4.2 Output Review and Analysis

The review of the overall objective of the “Public Private Partnership Options Study and Awareness Raising for Irrigation Investment in Malawi” presented in the Introduction chapter shows that it has two main outputs as follows:

- ▶ PPP awareness raising and capacity strengthening among key line Ministries, private investors and water users (small and medium-scale farmers) to be aware of different options and modalities for PPP in irrigation infrastructure development and management. This output has been realised through awareness raising among key stakeholder institutions analysed above. The details of awareness raising are in chapter 2; and,
- ▶ SVIP PPP Options Pre-feasibility Study Report that studies economically viable PPP options for the proposed Shire Valley Irrigation Project that is appreciated by the main stakeholders. It includes proposals for specific PPP transaction models to be used and followed during the PPP feasibility study as well as updating the SVIP designs and EIA. This output view has largely been advanced during consultations with the stakeholders analysed in section 1.5.2b .

These two outputs are the main subject of this report and are presented in the next two chapters of Awareness Raising and Capacity Strengthening; and, PPP Options for the SVIP.

## 2. AWARENESS RAISING AND CAPACITY STRENGTHENING FOR PPP DEVELOPMENT IN IRRIGATION SECTOR

The awareness raising and capacity strengthening started with the consultations and literature review during Inception Phase where the Consultant appreciated the level of irrigation development and PPP understanding and experiences in Malawi to ascertain strengths and gaps. These enabled the Consultant to plan and prepare awareness raising and capacity strengthening accordingly. This was grouped into three categories as follows:

- ▶ Awareness Raising and Stakeholder Feedback;
- ▶ Capacity Strengthening and Study Tour; and
- ▶ National Workshop and Stakeholder Feedback on Draft Report.

The **Awareness Raising and Stakeholder Feedback** was a series of sessions of presenting PPP experiences and analyses to different stakeholders. In return, the stakeholders provided questions and answers from the Consultant's presentation, vice versa. Details of these are in the next sub-section and annexes.

The **Capacity Strengthening and Study Tour** have been arranged to get maximum appreciation of PPP transactions being implemented and provide hands - on experiences in the planning and execution of PPPs. The organization of the Capacity Strengthening and Study Tours is presented in 2.2 sub-section.

The **National Workshop and Stakeholder Feedback on Draft Report** was a forum where the Consultant presented the draft report conclusions as a feedback after Awareness Raising and Stakeholder Feedback as well as further awareness raising. The stakeholders feedback on this presentation, the official comments from the Client and the experiences of the Capacity Strengthening and Study Tours had been used to finalise the Report.

### 2.1 AWARENESS RAISING AND STAKEHOLDER FEEDBACK

#### 2.1.1 Organization of Questions and Answers sessions

The Consultant organised ten sessions – 5 in Lilongwe, 4 in Lower Shire/Blantyre and one in Dwangwa where awareness raising sessions were conducted (see details of the implementation of the 10 sessions in Annex 2).

During each session the Consultant made presentations which were divided into 4 parts, namely, Introduction to the Assignment and its Scope of Works including definitions of PPP; International Experiences of PPP in Irrigation Development; Potential and Legal Framework for PPP in Malawi; and, Shire Valley Irrigation Project Review (see full presentations of these 4 parts in Annex 3).

The presentation of the scope of work for the assignment and definitions of PPP centred on two activities of:

- ▶ Conducting awareness raising and capacity strengthening activities among key line Ministries, private investors and water users; and
- ▶ Identifying potentially promising and economically viable PPP options for the proposed Shire Valley Irrigation Project.

The Public Private Partnership (PPP) itself was defined as an agreement where a government service or private business venture is funded and operated through a partnership of government and one or more private sector companies under a contract. The contract is between a public-sector authority and a private party, in which the private party provides a public service or works and assumes substantial financial, technical and operational risks in the services or works. These risks are compensated by the fees or business the private company conducts for money under the PPP arrangements.

The presentation on **International Experiences** discussed experiences in Morocco, where implementation of PPP with various model options and combinations, is advanced. It is the only country where a PPP project has been fully developed and implemented.. The international Irrigation PPPs discussed also included experiences in France, Brazil, Egypt and Ethiopia.

The following examples were described for the audiences:

- ▶ **Guerdane project (Morocco)** : on-going concession of 30 years (signed in 2004) where the private operator is in charge of financing function (50% of the total investment), design, construction of a 10,000 ha pressurized irrigation scheme and 30 years of O&M. State subsidies are limited to the initial investment, the private has to cover O&M costs (and makes its profit) based on the revenues of the irrigation fee collected from the farmers. The beneficiaries are commercial farmers with experience in irrigation (based on use of underground water) and access to export market (orange production). In Morocco, the PPP are dedicated to the Public Service Delegation of Irrigation & Drainage services. For the development of outgrowers systems, the government is developing specific agreements between agribusiness companies and smallholders (*contrats d'agrégations*).
- ▶ **Megech Project (Ethiopia)** : project under preparation for a 4,000 ha irrigation scheme for smallholders farmers (with no experience in irrigation activities) with two different contracts:
  - One for construction
  - The second one (management contract, without any private investments in the construction) including supervision of the first contract and O&M functions.
- ▶ **Pontal project (Brazil)** : Concession of 25 years including finalization of construction and O&M of 7 700 ha. The profile of the private operator is required to be a Joint Venture between an agribusiness company and a construction and O&M company. The private operator is obliged to dedicate a minimum of the equipped area to smallholders (at least 25% of the area).
- ▶ **West Delta (Egypt)** : similar project to Guerdane one but with concession duration of 20 years and a higher public contribution for investments (85%).

- ▶ **BRL<sup>1</sup> (France)** : Established in 1955, BRL (a Regional Development Authority) was created to promote the socio-economic development of the Languedoc Roussillon Region in Southern France. To do so, it has **developed a large and complex system of large water infrastructures** to bring water resources to the region (for irrigation, tourism and water supply purposes). It has also, and still does, provide technical support to the regional stakeholders (Regional authorities, farmers associations...) for water infrastructure operation and development (financial & technical studies) and agriculture development (agriculture extension, capacity building, institutional advice...). Today, BRL still **owns, manages and operates** under a concession contract of 75 years those hydraulic infrastructures consisting of 6 dams, 125 pumping stations, 8,000 km of buried pipes, and 105 km of canals. BRL Holding company has developed an lease contract with his subsidiary BRLExploitation (operation in French). Through these infrastructure, BRLExploitation, distributes 130 millions m<sup>3</sup> of water per year for agriculture (**130,000 ha of irrigated land**), domestic and industrial use.

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<sup>1</sup> BRL : reference to the region Bas Rhône Languedoc where the concession area is located.

Table 2-1: Synthesis of main features of the discussed international experiences on PPP irrigation

Name of the Project	Stage	Area and general design	Breakdown of investment functions	Transaction model	Hydraulic and Agricultural functions on the same PPP contract ?
<b>Guerdane</b> (Morocco)	<b>On-going</b> PPP contract since 2004	10,000 ha of pressurized system for drip	50% of hydraulic assets financed by private, <b>45%</b> by Public, 5% by farmers	Concession of 30 years with DBTO functions done by the private. No subsidy for Operation, full recovery costs for private (including profit).	No (agricultural functions are on separate contracts of "aggregations")
<b>Megech</b> (Ethiopia)	Project under preparation	4,000 ha for gravity irrigation	No investment from the private  Private does not take the risk linked to irrigation fee collection (payment of fees according key performances indicators)	A construction contract + a second contract (management contract) including : <ul style="list-style-type: none"> <li>• Review of the detailed scheme design</li> <li>• Supervision of the separate Construction Contract</li> <li>• Long term Operation and Maintenance of the scheme.</li> </ul>	No (probably separate contracts or services provided by a public entity)
<b>Pontal</b> (Brazil)	Bids submitted in august 2010	7,700 ha for commercial crops (fruits)	Public subsidies is a fixed amount (50 M. USD). the Private will cover the remaining estimated <b>50%</b> (50 M. USD)	Concession of 25 years with DBTO functions + land allocation done by the private.  Private must include an Agribusiness company in the consortium.  Private has a deadline of 6 years to finalize construction and start production	<b>Yes</b> the tender requires that the private has to dedicate at least 25% of irrigable land to small farmers, integrated to the production chain of agribusiness companies
<b>West Delta</b> (Egypt)	Project on preparation, PPP	36,000 ha on pressurized system	Public subsidies is a fixed amount (175 M. USD / 85% of construction	Concession of 20 years with DBO functions done by the private?	No

Name of the Project	Stage	Area and general design	Breakdown of investment functions	Transaction model	Hydraulic and Agricultural functions on the same PPP contract ?
	documents on discussion with pre-qualified companies		costs), the Private will cover the remaining 15%	No subsidy for Operation, full recovery costs for private (including profit).	
<b>BRL</b> (France)	On-going since 1955	150,000 ha of pressurized system for drip, sprinkler, centre pivot, etc.	Initial Public investments through a newly created Regional Development Company	Concession of 75 years between the contracting Authority (Region) and the Holding Company, Mixed company with private shareholders  Lease contract between Holding (BRL) and subsidiary (BRL e)	No It was done at the beginning of BRL creation but not anymore



The **Potential and Legal Framework for PPP in Malawi** discussed the legal regime with assertion that present laws are adequate for implementing PPPs. This was also reinforced by the PPP Bill, which once enacted would create a unique, legal environment. However, there are a few gaps here and there that need to be considered carefully in developing and implementing PPPs in the country.

The Consultant's presentation ended with a discussion on technical aspects of the **Shire Valley Irrigation Project** and the options for PPP design for irrigation and non - irrigation services. The first to be reviewed was that of the Government done in 2008, which has its intake works at Hamilton Falls, an open channel canal system for the 55 m<sup>3</sup>/s main and distribution canals. The other design concept is that of Illovo (2010) with intake works at Kapichira barrage reservoir, a 35 m<sup>3</sup>/s main canal and piped distribution or secondary water distribution systems. The 2010 design concept saves water resources and capital cost by reducing the water required from 55 m<sup>3</sup>/s to 35 m<sup>3</sup>/s and the cost of constructing of the intake and main canal from 143 million US Dollars to 68 million US Dollars. The operation and maintenance of the SVIP would also be reduced if it was constructed according to 2010 design concepts (see details of designs in section 3.).

## 2.1.2 Summary of discussions

The details of discussions are presented in annex 2). The main following topics are summarized below.

### **MAIN TOPICS COVERED DURING Q&A ABOUT DEVELOPMENT OF PPP IN IRRIGATION SECTOR IN GENERAL:**

Land Issues with two different concerns:

- ▶ The local population is concerned about being forced to move out of land and having to relocate
- ▶ The private investors are concerned about having steady land acquisition and access to a minimum size to develop profitable activities.

Legal and Regulatory Concerns :

- ▶ Will the PPP Draft bill cover all the concerns for irrigation ? The predominant point of view was that the 2010 PPP bill will create the proper conditions
- ▶ Need of establishment of a regulator for PPP in irrigation ? The predominant opinion was that a regulator for PPP irrigation sector is not necessary. The PPP will be regulated according to the conditions of the contract between the private partner and the Contracting Authority.

Private Investors Concerns:

- ▶ What kind of investors do Malawi want for PPP in irrigation sector: local or foreigners ? The consultant usually explained that in Morocco, a Joint Venture of local and foreign companies was selected for Guerdane Project.
- ▶ What kind of tax incentives for private operator ?

What could be the participation of Stakeholders in PPP project in irrigation sector ?

- ▶ The main concern was the role of water users (especially smallholders) in PPP if a private company is contracted ? Two roles could be envisaged in general but other specific arrangements could be build for each project. The water users, through WUAs could have:
  - Participation in PPP contract monitoring (in a Multistakeholders Committee) and

- Participation in water management through Irrigation Management Transfer (and contractual arrangements with the private operator: for operation and maintenance at tertiary level for instance).
- ▶ Another concern is linked to the role of NGO and civil society in PPP. For the consultant, it could be:
  - For irrigation services: monitoring of PPP contract
  - For non-irrigation services: potential service providers ?

What would be the benefits for Smallholders if PPP is developed ? The conclusion was, in general, that the main two benefits could be:

- ▶ Receiving efficient and reliable Irrigation and Drainage services
- ▶ together with supporting services (extension, marketing support, etc.).

## MAIN TOPICS COVERED DURING Q&A ABOUT PPP OPTIONS FOR SHIRE VALLEY IRRIGATION PROJECT

- ▶ Concerns about risks of setting tariffs of water **unaffordable for farmers**
- ▶ **Land Issues:** the same concerns than before with specific concerns linked to Illovo expansion plan
- ▶ What **commercial crop** / chain value to develop ? Importance of diversification (but lack of visibility for profitable chain value except sugar cane) and also food security.
- ▶ What will be **Illovo's role**: beneficiaries (water user) only ? Candidate for private operator (for irrigation services )? Candidate for private operator for non-irrigation services (in sugar cane value chain)?
- ▶ Need of **SVIP Design Optimization** to reduce capital costs and ensure interests for existing stakeholders (Kasinthula / Illovo for energy savings)
- ▶ What are the **Advantages of PPP for SVIP** ?
  - Attracting private investment (to reduce public ones)
  - Ensuring a more rapid implementation of the project (if compared with a classis public project development)
  - Having access to efficient irrigation and drainages services.
- ▶ Necessity of creation of the **Shire Valley Authority** (region-based body) ?
  - To be the delegated contracting authority for PPP contracts (irrigation and non-irrigation services)
  - To be in charge of land management
  - Etc.

## 2.2 CAPACITY STRENGTHENING AND STUDY TOUR

As part of capacity strengthening, an international study tour has been conducted in December 2010 for 6 participants:

- ▶ Mr Sandram C. Y. Maweru, Secretary for Irrigation and Water Development;
- ▶ Prof. G. Y. Kanyama Phiri, Coordinator of Green Revolution Development Programme;
- ▶ Ms Erica Maganga, Principal Secretary II, Ministry of Agriculture;
- ▶ Mr Geoffrey Mwepa, Deputy Director of Irrigation Services, Ministry of Irrigation and Water Development;
- ▶ Mr Charlie T. Msusa, Director PPP projects, Privatization Commision ;

- ▶ Mr Misheck Coco Longwe, Chief Economist, Ministry of Industry and Trade.

The study tour took place in Morocco for in - depth analysis of PPP development in irrigation sector including:

- ▶ Visit and discussion with Contracting Authority (Ministry in charge of Agriculture) in Casablanca to acquire knowledge of how PPP development in irrigation sector is part of a broader strategy (called the Green Morocco Plan) to modernize the existing irrigated agriculture and accelerate the growth of this sector aiming to comfort Morocco situation as an exporting country of agricultural products;
- ▶ Presentation by the Contracting Authority of the Guerdane Project (see details in previous section);
- ▶ Visit, in Casablanca, at the headquarters of the private partner (Joint Venture of private companies called "Amensouss") in charge of Design, Construction and Operation (during 30 years) of the new 10,000 ha irrigation scheme called Guerdane (in Souss-Massa region) ;
- ▶ Visit of Guerdane Project : assets, organization of operation (under private partner's responsibility), meetings with farmers and one of the stakeholders in charge of local monitoring of the PPP contract implementation : the Office de Mise en Valeur du Souss Massa (ORMVASM).

## 2.3 ORGANIZATION OF A NATIONAL WORKSHOP

The National Workshop was held in 25th of January 2011. The Consultant presents the main findings of the draft report. The main comments and suggestions had been the following:

- ▶ CISANET wanted to know the role of NGOs in SVIP since they were already on the ground working with communities. It was stated that NGOs could participate as extension service providers, mobilizing and empowering communities to accept the project and participate accordingly;
- ▶ SVCCT wanted to know if Illovo gets the 8, 000 hectares for expansion where would the villagers get located to considering there is no land. It was noted that land issues should be studied further during design studies to chart a road map for land management in the SVIP and that Illovo expansion had not been agreed with the Government and/or the local community;
- ▶ Majete/Agricane –wanted awareness campaigns for SVIP should be extended to public institutions so that they appreciate the project and in turn promote it.;
- ▶ SVCCT wondered why PPP study was already allocating 8,000 hectares to Illovo for Phase one of SVIP when there were other players more deserving who would not or are allocated reduced area of irrigation land? It was agreed that Phase I expansion area should not be allotted to anyone in the document;
- ▶ Agricane commented that a user can also be an operator. The reaction was that this would bring conflict of interest when providing services to other water users;
- ▶ Majete commented that the Kapichira intake option was preferred and that EIA for Hamilton Fall intake was irrelevant since it justifies the intake to pass through the Game Reserve under concession to Africa Wildlife, which means the Government would be contradicting itself in that it would allow destroying the concession and allowing SVIP destroy Majete concession. Besides Majete preferred an independent EIA need to be done for Kapichira intake option;
- ▶ The MIWD asked why only the irrigation services had a PPP transaction model and not non irrigation services. It was stated that there were not enough data and information available for modelling non-irrigation services but these should be done during design studies;
- ▶ What was the way forward for the PPP in SVIP? It was stated that the MIWD and Greenbelt Initiative would provide the way forward, with the support of the Government. However, the next step should be carrying out feasibility studies together with detailed design.

### 3. IDENTIFICATION OF PPP OPTIONS FOR THE SHIRE VALLEY IRRIGATION PROJECT

This section will be organized in 4 sub-sections:

- ▶ The first section will describe SVIP on technical aspects with an analysis of the designs proposed by the feasibility study and a recent review,
- ▶ The second section will focus on the analysis of the beneficiaries demand features,
- ▶ The third section is dedicated to the design of PPP options for irrigation services,
- ▶ The fourth section is about PPP financial modelling (at prefeasibility level) with given assumptions and data provided by the most recent technical feasibility studies,
- ▶ The fifth section, as a conclusion, will analyse the PPP options for irrigation services and provide recommendations.

#### 3.1 DESCRIPTION OF THE SVIP MAIN FEATURES

##### 3.1.1 Physical description

Malawi is divided into three regions: north, central, and south. Chikhwawa and Nsanje are located within the Shire Valley in the Southern region. Chikhwawa has 438 895 inhabitants whilst Nsanje has 238,089 (See table below). The two Districts have recorded an increase in population density from the year 1987 to 2008.

*Table 3-1: Total Population by District and Sex, 2008*

Name of District	Total	Male	Female
Nsanje	238, 089	115, 371	122, 718
Chikhwawa	438, 895	217, 981	220, 914
Total	676, 984	333, 352	343, 632

*Source: National Statistical Office, 2008*

*Table 3-2: Population Density by District and Year*

District	Land Area	Population Density		
	Square Kilometer	2008	1998	1987
Nsanje	1, 942	123	100	105
Chikhwawa	4, 755	92	75	67

*Source: National Statistical Office, 2008*

The Shire Valley Irrigation Project will cover Chikhwawa and Nsanje (see Figure below). The two Districts lie along the Great African Rift Valley. The Shire River, the outlet for Lake Malawi, runs through the districts. This perennial river will be the source of irrigation water for the project.

Chikhwawa District shares internal borders with Mwanza, Blantyre, Thyolo and Nsanje Districts. Both Districts have international borders with the Republic of Mozambique. Chikhwawa has a total area of 4,755 square kilometres with forests covering about 35 % of the total land. The total forest area (137,628 ha) is a protected area while 4.4 % (21,000 ha) is woodland and only 0.1 % (480 ha) is under plantation. Nsanje District has a total area of 1,942 Square Kilometres with 40,395 ha of forest representing 18 percent of the total land area.

The climate in Chikhwawa and Nsanje is tropical and falls into two main seasons; wet and dry seasons. The wet season starts in November/December and ends in April/May, while the dry season occurs from May to October/November. Rainfall is low and unpredictable. In general, the districts experiences rainfall variations from 114mm to 2,000mm. The Districts experiences highest temperatures in the country with the minimum and maximum being 13.4 and 27.4 Degrees Celcius in June respectively. The average minimum temperature is the highest in October when it rises to 37.5 Degrees Celsius.

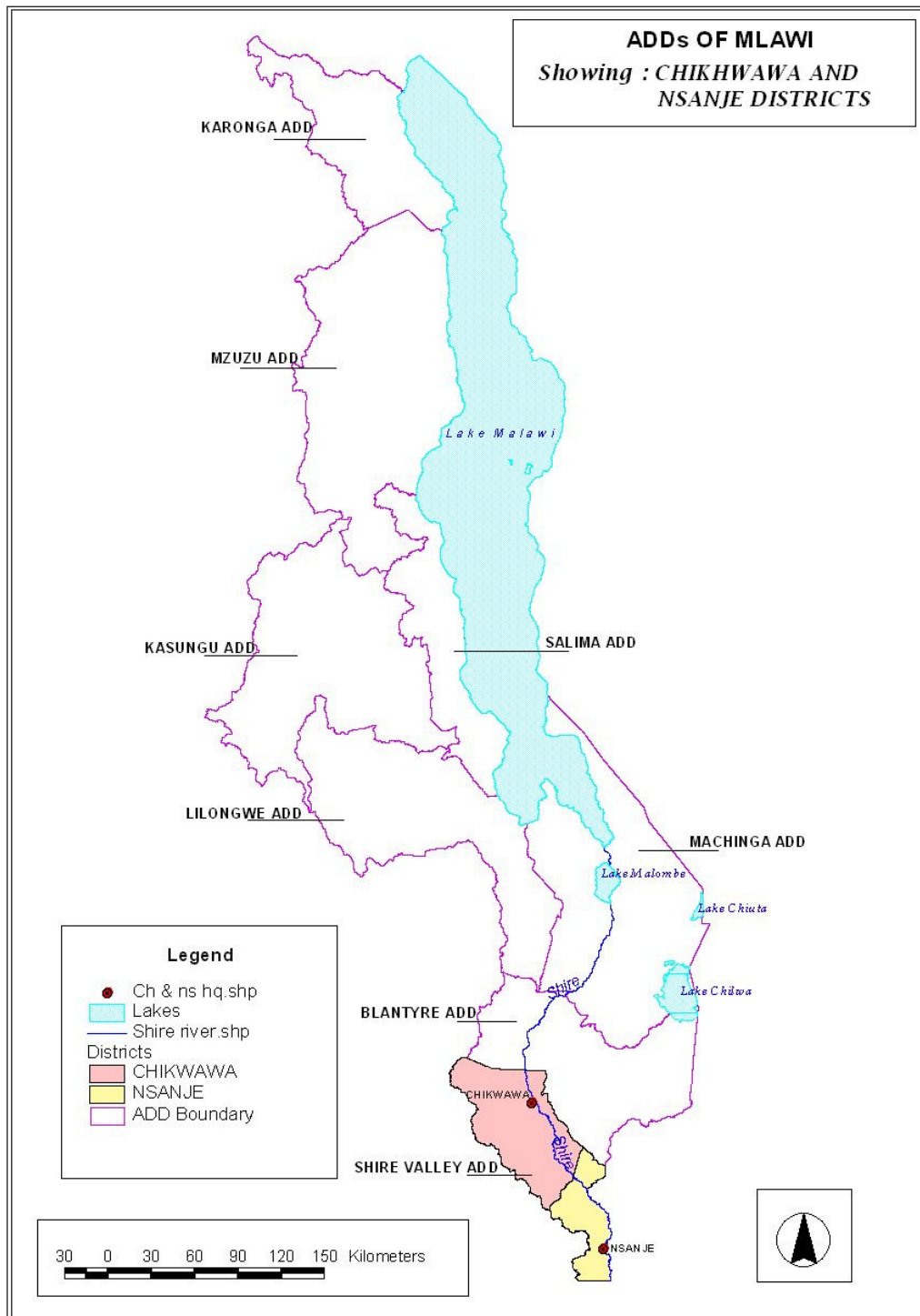
### 3.1.2 History of the SVIP

The SVIP started in 1952 to 1957 under the project called Shire Valley Development project, SVDP, sponsored by the Federation of Rhodesia and Nyasaland. The SVDP comprised the hydropower and dams/flow regulating infrastructures (Liwonde barrage, Kholombizgo, Nkhula, Tdzani, Mpatamanga and Kapichila hydro schemes) developments in Middle Shire River, present day Shire - Zambezi Waterway project, the irrigation project for the entire Lower Shire Valley (SVIP is part of this) and various processing industries in the valley itself. The project was shelved after independence in 1964 but the Liwonde barrage, Nkhula and Tedzani projects were followed up early enough after independence. The Kapichira was followed up only recently.

The SVIP has only followed up by the Nchalo Sugar Estate when Lonro Group established the estate on a very small land compared to what was proposed under original SVIP. However, Lonro Group gave up and sold the estate to Illovo Group in the 1980s. Illovo Group expanded the irrigated area from about 9,000 hectares to the present 13 800 hectares.

However the follow up to the original entire Lower Shire irrigation project only started in 1998 and 2005 to 2008 where studies were conducted to revive the development of irrigation schemes from Chikwawa to just north of Bangula only. Even the revival of these comprehensive studies, they have not included the original plans for diverse and competitive crops, agro and industrial processing industries (paper mills, cotton ginnery and textile industries and river transport system (Shire-Zambezi Waterway). The 2005 to 2008 design report is of these studies and is providing the main background information for this of the "Public Private Partnership Options Study and Awareness Raising for Irrigation Investment in Malawi".

Figure 3-1: Map of -Shire Valley ADD



The SVIP has two conceptual designs. The official Shire Valley Irrigation design is the one Coda and Ninham Shand prepared between 2005 and 2008. This one was reviewed by Coyne & Bellier, in 2010, as requested by Illovo Group, and has been designated as “Optimized SVIP Design Concept” as presented in *High Level Canal Project Review Report, Sugar Illovo Group*. The details and major differences between these two design concepts are presented in sections 3.1.2 and 3.1.3, respectively. The review and analysis of the concept designs and the PPP requirements have enabled the Consultant to provide advice in updating terms of references for the updating SVIP designs and EIA, which have been described in section 3.1.4.; Updating Terms of Reference for the SVIP Design Study Update. The specific design recommendations to be specifically included in the design update are presented in section 3.1.5: Conclusions on Technical Designs for SVIP, together with the assumptions in the development of the financial models that have been used in assessing the PPP options.

### 3.1.3 Analysis of the recent SVIP Design Reports

#### 3.1.3.1 Shire Valley Irrigation Project Design Study (Coda & Ninham, 2005-08)

The design study for the Shire Valley Irrigation Project, SVIP, was performed by a joint venture of Coda (Kenya) and Ninham Shand (South Africa), updating earlier designs of 1998. The proposed SVIP objective during the study was to exploit the high irrigation potential of the valley through development of a gravity fed irrigation scheme with 55 m<sup>3</sup>/s main canal from Shire River to irrigate some 42,000 hectares of farmland for some 73,500 families in the districts of Chikhwawa and Nsanje.

The general design and the main information on SVIP and its equipped area and hypothesis of cropping pattern presented in the design report are summarized and shown in Fig 3.4. The SVIP has been designed with two phases.

#### SVIP PHASE I

**Phase I** of the project comprises the construction of an intake upstream of Hamilton Falls with a diversion weir, a feeder canal (for a capacity of 55 m<sup>3</sup>/s) and other hydraulic accessories to provide water to the above three different areas as follows (**total of 17,980 irrigated hectares**):

- ▶ 9 200 ha already irrigated by Illovo Sugar Estate, which currently uses water pumped from the river. For this beneficiary, the project may allow electricity cost savings and cheaper production costs, as its present already developed farmland would be fed from the gravity canal. It is also important to note that Illovo has already started using cheaper irrigation technologies to save and reduce costs of pumping water from Shire River and sugar production costs in general.
- ▶ 7 280 ha of new development for smallholder irrigation schemes with a diversified cropping pattern that has strong emphasis on food security purposes (Maize, Sorghum, Rice), in the vicinity of Kasinthula or northern side of Illovo sugar plantation; and
- ▶ 840 ha (with 750 ha already developed) for Kasinthula Cane Growers Trust and 90 ha for research activities (as shown in the following table).

Table 3-3: Land use planned for Phase I in feasibility study

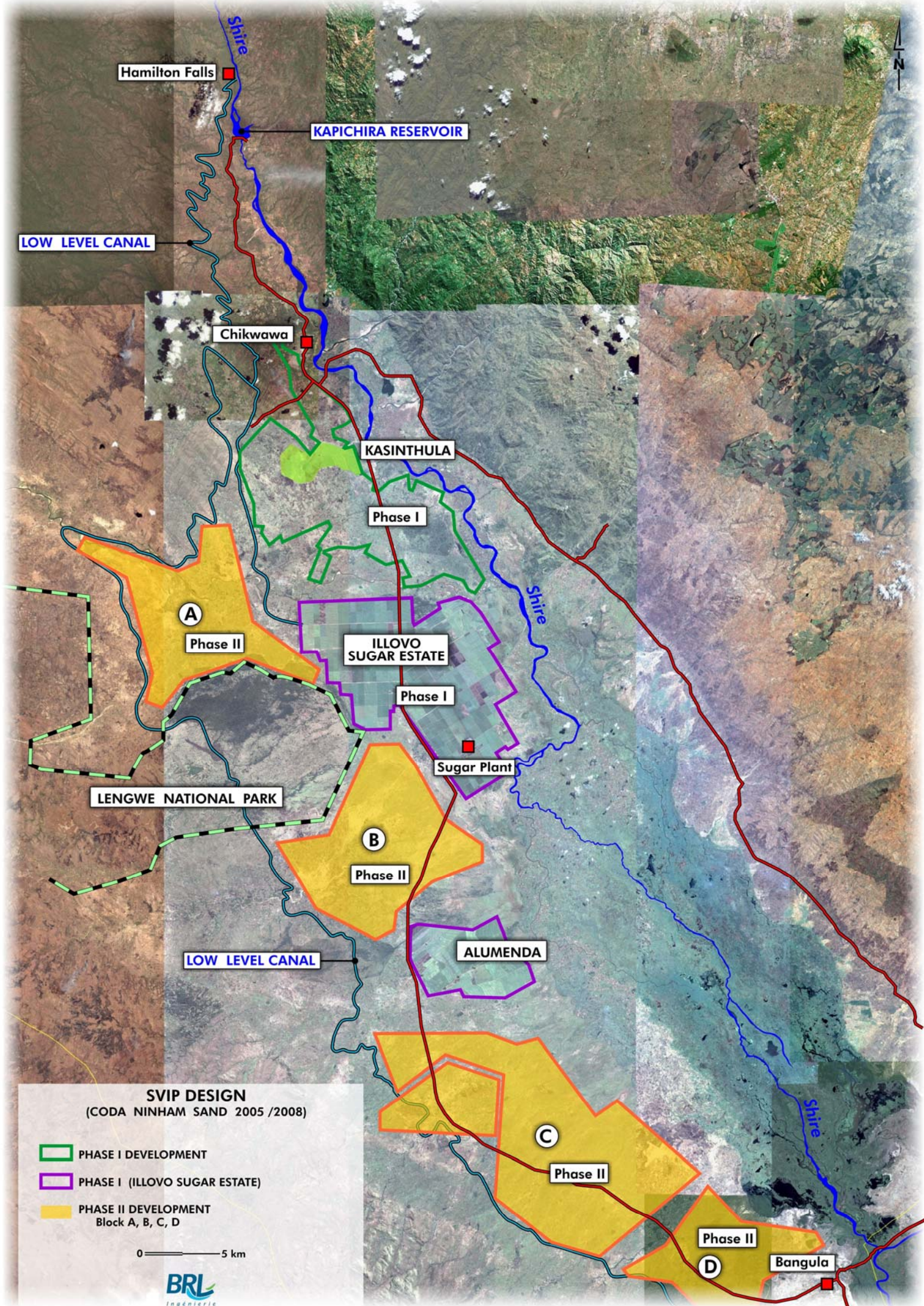
Crops	Illovo	Kasinthula	New devt	Research
Sugar cane	9 200	750		
Maize			4 037	
Rice			1 594	
Cotton			2 000	
Sorghum			309	
Research				90
<b>Total</b>	<b>9 200</b>	<b>750</b>	<b>7 940</b>	<b>90</b>

The capital costs for the Phase I was estimated at MK 23.7 billions (about US \$143 million, 2010 prices) with 21 billions for works, the remaining 2.7 for the services.

Table 3-4: Phase I estimate in the feasibility study

s/n	Sub-Component	Cost (MK) - Year 1995
1.	Preliminary and General	3 003 895 722
2.	Earthworks and Structures	10 705 781 921
3.	Roads and Land Levelling	2 008 347 904
4.	Water Project	1 839 283 200
5.	Sanitation (Septic Tanks only)	23 925 000
6.	Dayworks	44 128 704
	<b>Sub-Total</b>	<b>17 625 362 451</b>
	<b>Add</b>	
	Contingency Sum @7.5% of Total Sum	1 321 902 184
	Variation of Prices @10% of Total Sum	1 762 536 245
	Contract Supervision (3.5% of Capital Costs)	616 887 686
	<b>Total</b>	<b>21 326 688 566</b>
7.	Land Valuation (Provisional Sum)	10 000 000
8.	Project Management and Institutional Development	20 396 000
9.	Agricultural Equipment and Machinery	1 013 600 000
10.	Environmental Mitigation, Management and Monitoring	60 075 000
12.	Training of Farmers and Staff	10 000 000
13.	Compensation and Relocation of Farmers (Development only)	31 482 000
14.	Land Resources Conservation (Catchment Management)	1 211 337 000
	<b>Total Services</b>	<b>2 356 890 000</b>
	<b>Grand Total</b>	<b>23 683 578 566</b>





Hamilton Falls

KAPICHIRA RESERVOIR

LOW LEVEL CANAL

Chikwawa

KASINTHULA

Phase I

A

Phase II

ILLOVO SUGAR ESTATE

Phase I

Sugar Plant

LENGWE NATIONAL PARK

B

Phase II

LOW LEVEL CANAL

ALUMENDA

C

Phase II

Phase II

D

Bangula

**SVIP DESIGN**  
(CODA NINHAM SAND 2005 /2008)

- PHASE I DEVELOPMENT
- PHASE I (ILLOVO SUGAR ESTATE)
- PHASE II DEVELOPMENT  
Block A, B, C, D

0 ————— 5 km



## SVIP PHASE II

Phase II of the project was apparently studied with less details. The Consultant could not find the estimate of investments costs for Phase II in the documents.

The Coda design documents present conflicting sizes of the planned irrigated area for Phase II. In the main report it appeared to be **25,000 ha equipped area**, while “Phase II - Irrigation Design” edited in June 2008, the crop water requirements analysis show detailed irrigated areas as 35,151 ha and **an equipped area of 37,000 ha**.

It should be noted that, as shown in the table about cropping pattern in the following table, the Phase II was designed at the time for food security purposes.

Table 3-5: Land use planned for Phase II in feasibility study

Crop	PHASE II - Area irrigated (ha)			
	Block A	Block B	Block C	Block D
Maize	3 705	5 187	7 064	2 322
Cow peas	855	1 197	1 630	536
Sweet potatoes	71	100	136	45
Sorghum	570	798	1 087	357
Cotton	1 710	2 394	3 260	1 072
Rice	214	299	408	134
<b>Total</b>	<b>7 125</b>	<b>9 975</b>	<b>13 585</b>	<b>4 466</b>
Equipped area	PHASE II - Area equipped (ha)			
	Block A	Block B	Block C	Block D
	7 500	10 500	14 300	4 700

### 3.1.3.2 High Level Canal Project Review Report (Coyne & Bellier, 2010)

A review of the feasibility study and a field visit were done in February 2010 by consultants from Coyne & Bellier Company, hired by Illovo Group. The consultants came up with alternative designs to those of Coda and Associates (2008) with main features as follows:

- ▶ Intake of the feeder canal at Kapichira reservoir instead of upstream Hamilton Falls, which represents a difference of length of 9 km, avoids a diversion weir, siphon over Wamkulumadzi River and main canal passing through the Majete Game Reserve;
- ▶ A smaller canal feeder for 35 m<sup>3</sup>/s instead of 55 m<sup>3</sup>/s, whose design is based on the water demand of a full sugar cane irrigation scheme of 40,000 ha (with 0.73 L/s/ha). This canal will be at elevation 140.6m above mean sea level at chainage 30km, which is west of Tomali – midway between Kasinthula and Ntchalo Sugar Estates. In the official designs, the canal was on a lower contour of about 120 m. above mean sea level.
- ▶ A distribution based on 4 pipelines for Phase I which provide pressurised head for most irrigation requirements (around 18 m head for Kasinthula area and 40 m head for Illovo existing Estate) with no or minimum pumping requirements for selected areas; and
- ▶ A smaller Bangula Canal (15.5 m<sup>3</sup>/s instead of 32 m<sup>3</sup>/s) but with no details on the design downstream the conveyance infrastructures.

A schematic diagram of this alternative design is shown on following page. The details of the estimated investments costs for the revised designs are shown in below tables. The total estimated cost of intake, conveyance and distribution accessories for Phase I is some MK 37.2 billion (219 M. USD - 2010 prices).

Table 3-6: Estimate of investment costs for Phase I (High Level Canal Option)

Item	Cost summary - Phase I SVIP	Total (ZAR)	Rate adjustment to Malawi works	Contingencies	Escalation	Engineering costs	Total (ZAR)	Total (MK)	Total (USD)
			16.8%						
1	Intake and sandtrap	26 906 356	4 520 268	2 690 636	3 228 763	1 748 913	39 094 935	860 088 576	5 212 658
2	Feeder canal	325 300 738	54 650 524	32 530 074	39 036 089	21 144 548	472 661 972	10 398 563 391	63 021 596
3	Pipeline 1 (Kasinthula)	111 661 594	18 759 148	11 166 159	13 399 391	7 258 004	162 244 296	3 569 374 514	21 632 573
4	Pipelines 2 & 3 (Illovo)	375 526 320	63 088 422	37 552 632	45 063 158	24 409 211	545 639 743	12 004 074 345	72 751 966
5	Pipeline 4 (Illovo)	290 226 924	48 758 123	29 022 692	34 827 231	18 864 750	421 699 721	9 277 393 853	56 226 629
	<b>TOTAL PHASE I</b>	<b>1 129 621 932</b>	<b>189 776 485</b>	<b>112 962 193</b>	<b>135 554 632</b>	<b>73 425 426</b>	<b>1 641 340 667</b>	<b>36 109 494 678</b>	<b>218 845 422</b>

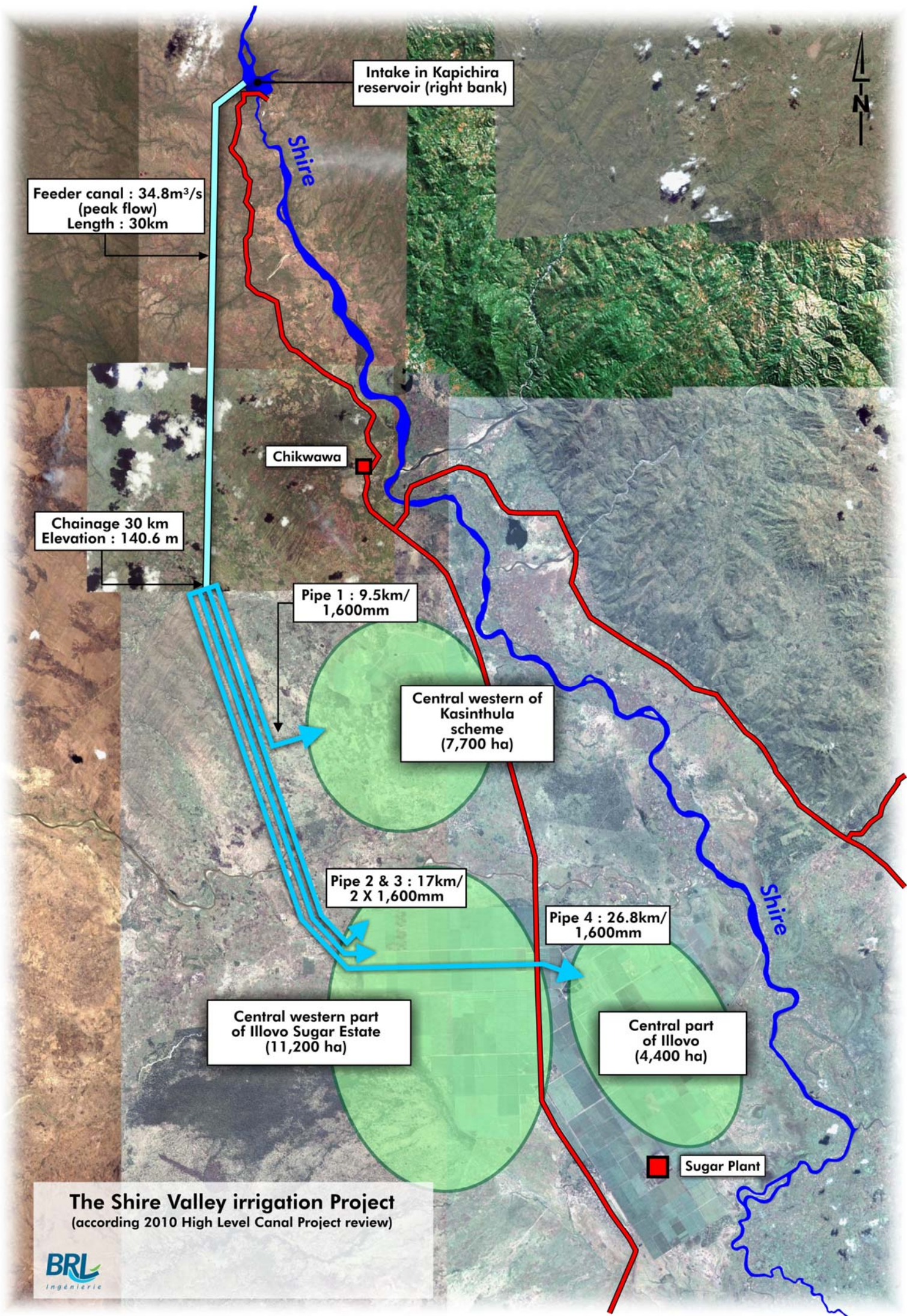
Source:, Coyne & Bellier, 2010: High Level Canal project Review Report, Sugar Illovo Group.

The conveyance infrastructure for Phase II is estimated at 114 M. USD.

Table 3-7: Estimate of investment costs for Phase II (High Level Canal Option)

Item	Cost summary - Phase II SVIP	Total (ZAR)	Rate adjustment to Malawi works	Contingencies	Escalation	Engineering costs	Total (ZAR)	Total (MK)	Total (USD)
			16.8%						
1	Bangula canal	590 199 279	99 153 479	59 019 928	70 823 913	38 362 953	857 559 552	18 866 310 153	114 341 274
	<b>TOTAL PHASE II</b>	<b>590 199 279</b>	<b>99 153 479</b>	<b>59 019 928</b>	<b>70 823 913</b>	<b>38 362 953</b>	<b>857 559 552</b>	<b>18 866 310 153</b>	<b>114 341 274</b>

Source:, Coyne & Bellier, 2010: High Level Canal project Review Report, Sugar Illovo Group.



Intake in Kapichira reservoir (right bank)

Feeder canal : 34.8m<sup>3</sup>/s (peak flow)  
Length : 30km

Chikwawa

Chainage 30 km  
Elevation : 140.6 m

Pipe 1 : 9.5km/  
1,600mm

Central western of Kasinthula scheme (7,700 ha)

Pipe 2 & 3 : 17km/  
2 X 1,600mm

Central western part of Illovo Sugar Estate (11,200 ha)

Pipe 4 : 26.8km/  
1,600mm

Central part of Illovo (4,400 ha)

Sugar Plant

**The Shire Valley irrigation Project**  
(according 2010 High Level Canal Project review)



Table 3-8: Distribution investment costs per equipped hectare for Phase I

Cost summary - Phase I SVIP - distribution	Total (MK)	Total (USD)	Area supplied ha	Investment costs by ha	
	Jun-10	Jun-10		MK /ha	USD/ha
Pipeline 1 (Kasinthula)	3 569 374 514	21 632 573	7 700	463 555	2 809
Pipelines 2 & 3 (Illovo)	12 004 074 345	72 751 966	11 200	1 071 792	6 496
Pipeline 4 (Illovo)	9 277 393 853	56 226 629	4 400	2 108 499	12 779
<b>TOTAL</b>	<b>24 850 842 712</b>	<b>150 611 168</b>			

Source: Calculations done based on Coyne & Bellier, 2010: High Level Canal project Review Report, Sugar Illovo Group.

Table 3-9: Conveyance investment costs per equipped hectare for whole SVIP

Cost summary - Phase I & II SVIP - Conveyance	Total (MK)	Total (USD)	Area supplied ha	Investment costs by ha	
	Jun-10	Jun-10		MK /ha	USD/ha
Intake and sandtrap	860 088 576	5 212 658	42 000	20 478	124
Feeder canal	10 398 563 391	63 021 596	42 000	247 585	1 501
Bangula canal	18 866 310 153	114 341 274	25 000	754 652	4 574
<b>TOTAL</b>	<b>30 124 962 119</b>	<b>182 575 528</b>			

Source: Calculations done based on Coyne & Bellier, 2010: High Level Canal project Review Report, Sugar Illovo Group.

Based on the Coyne and Bellier study, the investment costs analysis reveals:

- ▶ The distribution capital costs for Phase I (pipelines) shows significant differences: Kasinthula areas could be supplied with an average investment costs of 2,800 USD/ha, the Illovo extensions for 6,500 USD/ha and the existing equipped area of Illovo for 12,800 USD/ha. If the PPP transaction model includes an important participation of the beneficiaries for these assets (which is likely), a more detailed analysis (including a modified and optimized design) is necessary.
- ▶ The feeder canal will cost 1,500 USD/ha for the whole SVIP, the Bangula canal (considered for 25,000 equipped ha) will cost 4,500 USD/ha. The beneficiaries of the Bangula irrigated area will be using a conveyance infrastructure costing at least 6,000 USD / ha (Feeder + Bangula), which is a considerable cost, especially if the area is dedicated for Food Security purpose. This has to be diligently reviewed, analysed and packaged in the upcoming detailed design studies to attract private sector investments accordingly.

Finally, a comparison between actual investment costs calculated by Coda & Ninham option and the Coyne & Bellier alternative reveals potential savings in the intake and feeder canal of at least UD \$75 million. It is envisaged that operation and maintenance savings would be quite significant too between the two design concepts, as there will be less electricity needed to pump irrigation water from Shire River as it is the case now. These estimated differences should be assessed in the upcoming detailed design and EIA studies with a view of coming up with designs attractive to investors and build SVIP that can sustainably be operated and maintained. The electricity savings as well as that which can be generated and fed into national grid should be analysed and cost/benefits quantified accordingly in such detailed designs.

Table 3-10: Comparison of investment costs for Intake and Feeder Canal

Item	Cost summary - Phase I SVIP	Coda & Ninham study	Coyne and Béliér study	Coda & Ninham study	Coyne and Béliér study	Potential savings with High Level Canal Option	
		Total (MK)		Total (USD)		MK	USD
		Jun-10		Jun-10			
1	Intake and sandtrap	3 382 665 000	860 088 576	20 501 000	5 212 658	2 522 576 424	15 288 342
2	Feeder canal	20 262 495 000	10 398 563 391	122 803 000	63 021 596	9 863 931 609	59 781 404
	<b>TOTAL PHASE I</b>	<b>23 645 160 000</b>	<b>11 258 651 967</b>	<b>143 304 000</b>	<b>68 234 254</b>	<b>12 386 508 033</b>	<b>75 069 746</b>

Source: Calculations done based on Coyne & Bellier, 2010: High Level Canal project Review Report, Sugar Illovo Group.

### 3.1.3.3 Terms of Reference for the SVIP Design Study Update

The internal African Development Bank review of the 2008 SVIP design studies revealed that there was lack of environmental and social impact details. It also underlined the need for re-conceptualizing the project to take into account the recent Government development policies, particularly in the agricultural and irrigation sectors.

According to the ToR for the SVIP Design Study Update, the AWF Screening Committee, when examining the GoM request for funding of the SVIP Study Update, recommended the following actions to fill the gaps:

- ▶ Further information on the background of the project: There was need for further design studies that should take into account the various institutional, technical, environmental and socio-economic considerations in the Shire River basin and for SVIP itself. The studies should follow up, the detailed comments made by the Bank on the previous studies and follow up implementation of the previous study outputs.
- ▶ Financing arrangements for the project capital investments should be prepared: If the PPP strategy is to be the main focus of the project, then the project design should be refocused and reconsidered appropriately, taking into account the appropriate administrative, legal, regulatory and institutional reforms necessary to create favourable environment for private sector participation; and
- ▶ Water, Environment and Land Management Issues: The transboundary water resources management issues in the proposed study have to be clarified with a clear identification of the stakeholders, the transboundary impacts and beneficiaries in the basin. If the proposed project has significant impact on transboundary water resources management issues, then a Strategic Environmental and Social Assessment could be included besides EIA; the need to balance multi-purpose water resources uses including water and sanitation requirements and irrigation demands in the proposed study has to be clarified; land tenure system and institutional arrangements in land management should be developed and recommended accordingly.

These recommendations were incorporated into the ToR for SVIP design update, accordingly. Besides, the ToR bid the consultant to be selected for this assignment to prepare an updated detailed design of the SVIP built on the outputs of the previous studies, with a view to filling the gaps and consolidating gains from the current (PPP) study findings. The updating study will, therefore, update the project design that was prepared more than twelve years ago and take into consideration the recent developments, not only for the SVIP design study and at the national and regional levels, but also at the worldwide market scale. Thus it is recommended that this design update study should put emphasis on achieving the following:

- ▶ Updating the SVIP with the above recommendations from the AWF Committee and recent developments;
- ▶ Integrating the results of the Public-Private Partnership Options Study, currently being undertaken by the World Bank in Malawi; and
- ▶ Identifying market potential and sustainability.

### 3.1.4 Conclusion on technical design for SVIP

The consultant recommends the following aspects to be analyzed in depth in the design update study:

- ▶ Location of intake. Hamilton Falls or Kapichira reservoir with the potential capital costs savings (9 km shorter) and whether it will create impacts on ESCOM activities
- ▶ Cropping pattern and water demand requirements. The two studies had shown huge differences of results: 20 m<sup>3</sup>/s of difference between the two designs for the same equipped area of 40,000 ha
- ▶ Course of the feeder canal. High level (140m contour) as proposed in the review with the clear advantages of having pressurized system or low level option (120m contour)
- ▶ Optimized course and regulation of the feeder canal. If the high level canal option is technically, economically and environmentally feasible, there are probably possibilities of optimizing the course proposed by Coyne & Bellier in order to shorten siphon pipes' lengths with appropriate analysis of the balancing dams.
- ▶ Design and course of the secondary distribution. The Coyne & Bellier design review proposes four pipes with very long ones especially the pipe n°4 (26.8 km) and the pipes n°2 & 3 (17km). this could probably be optimized if these pipes are connected to the Bangula canal instead of being connected to the main feeder canal at chainage 30 km.
- ▶ Establish energy balance for the Project
- ▶ Revise the layout of Bangula canal and assess feasibility of an alternative design which will not cross through Lengwe National Park
- ▶ Confirm the boundaries of the command area.

For the exercise of the financial simulation, the consultant has concluded that, both designs (the 2008 feasibility study and the 2010 design review) should be used as follows:

- ▶ Using Kapichira intake and high level canal option in order to minimize the capital costs and maximize the benefits (electricity savings)
- ▶ Using a new cropping pattern with (see section 3.3):
  - A Phase I not exclusively dedicated to sugar cane (different from Coyne & Bellier proposal).
  - A Phase II with diversified crops but also including sugar cane for Illovo development and other beneficiaries (based predominantly on the "Kasinthula model" as required clearly in the session organized in Chikwawa). These hypothesis are different from the feasibility study.

## 3.2 ANALYSIS OF SVIP CURRENT BENEFICIARIES FEATURES AND DEMANDS

### 3.2.1 Analysis of Illovo's strategy

#### GENERAL STRATEGY

Today, Illovo explores 14,167 ha of sugar cane (13,833 ha owned plus 335 ha on managed property in the trust farm) as shown in the below table.

*Table 3-11: Location of Illovo's areas of sugar cane production*

<b>Location</b>	<b>Irrigated area (ha)</b>
Nchalo - main estate	10 026.0
Alumenda	2 860.9
Sande	453.6
Kaombe	492.1
Trust Farm	335.0
<b>Total</b>	<b>14 167.6</b>

Illovo has been studying during the last years some expansion plans in the Shire Valley including soil surveys to assess sugar cane production suitability. It is important to note that this expansion plan has not yet been agreed with the main local stakeholders nor with Malawian government.

Illovo current development plans in the project area include:

- ▶ Development of an additional sugar cane area of 8,000 ha in SVIP area.
- ▶ Expansion of the existing Nchalo factory to accommodate the planned expansion of sugarcane production. The current sugarcane plantation is some 13,800 hectares with factory capacity utilisation of 96% (318 MT per day out of 330 MT/day) during a season of 34 weeks. The capital costs of this factory expansion is estimated to be 100 M. USD.



- ▶ Increased electricity production on the Illovo Estate based on two objectives :
  - Being autonomous in electricity supply : Illovo produces around 8 MW while the needs are 20 MW. With the expansion (both irrigated areas and factory), the future need will be of 40 MW. Illovo plans include an increase of the power generation to at least 40 MW, which would mean being autonomous in electricity supply and,
  - Reduction of electricity consumption: The proposed new gravity main canal under SVIP at a contour line of 140.6 m above sea level with water fed into the irrigated fields through gravity feeder pressurized pipes would allow irrigation mainly by gravity, which would significantly cut electricity demand and put most of the produced electricity into national grid for consumption elsewhere. At present water is lifted from river to the field and is pressurized for centre pivot and drag line sprinkler.

### HOW SVIP IS IN PHASE WITH THIS STRATEGY ?

The SVIP represents, therefore, an opportunity for Illovo Group to significantly reduce its sugar cane production costs particularly irrigation water pumping costs. This is quite significant as the average cost of electricity for water pumps is estimated to be 300 USD/ha/yr in current situation. The SVIP is also important as it will enable Illovo to secure more sugar cane production and supplies to its sugar mills, justifying the expansion of its sugar factory.

Illovo expressed willingness to contribute to the SVIP investments based on:

- ▶ A modified design of the main canal and pressurized feeder pipe water distribution system is more attractive to Illovo as it is detailed in the Coyne & Bellier option report
- ▶ An immediate implementation of the SVIP phase I, which would allow Illovo to develop its proposed expansion scheme of 8,000 hectare plantation within the next three years and significantly cut capital as well as operation and maintenance costs as delays would expensively influence the design and construction of the 8,000 ha as follows:
  - if the SVIP intake and conveyance assets are ready for 2013-14 (corresponding to their goal for the expansion), Illovo will design the 8,000 ha directly to be connected with the SVIP feeder canal
  - on the contrary, Illovo would probably design and construct the 8,000 ha expansion scheme based on pumping systems installed on the Shire River.

The expansion strategy will differ:

- ▶ if the SVIP is not implemented at all or not with the High-level canal option, Illovo will prioritize its expansion in areas close to the Shire river as described in the following table

Table 3-12: Illovo Expansion strategy without SVIP High-Level Canal

Development Phase	Name of place	Irrigated area (ha)	Irrigated area (ha) (Small-Scale Farms)
Phase II	Kaombe North	409.05	45.45
Phase II	SVCR East	332.00	-
Phase II	SVCR West	529.00	-
Phase II	Ngabu West	489.38	54.38
Phase II	Ngabu South	2 542.65	303.60
Phase II	Malikopo SH	641.93	71.33
Phase II	Ngabu North (excl. Rattray)	319.73	35.53
Phase II	Mia Ranch	2 358.75	-
Phase I - pipe 1	Kasinthula Ranches Ltd	50.00	-
Phase I - pipe 1	Sande North (icl. Mlomba Village)	435.38	48.38
<b>Total</b>		<b>8 107.85</b>	<b>558.65</b>

- ▶ on the contrary, the strategy will be to look for areas close to the canal and with potential for natural pressure in order to maximize electricity savings.

Table 3-13: Illovo Expansion strategy with SVIP High-Level Canal

Development Phase	Name of place	Irrigated area (ha)	Irrigated area (ha) (SSF)
Phase II	SVCR West	529.00	-
Phase II	SVCR East	332.00	-
Phase II	Mia Ranch	2 358.75	-
Phase II	Ngabu West	489.38	54.38
Phase II	Kaombe North	409.05	45.45
Phase II	Ngabu North (excl. Rattray)	319.73	35.53
Phase II	Ngabu South	2 542.65	303.60
Phase I - pipe 1	Sande North (icl. Mlomba Village)	435.38	48.38
Phase I - pipe 1	Kasinthula Ranches Ltd	50.00	-
Phase I - pipe 4	Jombo East	363.15	40.35
Phase I - pipe 4	Jombo West	213.98	23.78
Phase I - pipe 4	Lengwe North	64.80	7.20
Phase II	Malikopo SH		
<b>Total</b>		<b>8 107.85</b>	<b>558.65</b>

The main differences between the two options are: Jombo East and West, Lengwe North and Malikopo areas (see areas location on map presented in section 3.4).

Large areas of ILLOVO expansion are actually not included within the boundaries of the scheme as established by CODA. Boundaries will need to be reviewed and aligned with demand and total command area may change (potential seems to be more than the 42 000 ha)

An assessment of the Illovo willingness to contribute to the capital costs (as a water user / beneficiary of the project) will be carried out in the chapter dedicated to the financial modelling.

### 3.2.2 Analysis of Shire Valley Cane Growers Trust's strategy in Kasinthula area

The Shire Valley Cane Growers Trust (SVC GT) was established to take over assets of the Government Kasinthula irrigation scheme, to manage the assets and core business of the Kasinthula Sugar Cane Growers Scheme (KSCGS) and to manage the grant with European Union. The Trust manages also the landlease (99 years).

SVC GT is currently having 10 trustees (Chairman, 3 farmers' representatives, 1 Traditional Authority Katunga, 1 women's representative, 1 member of the Law Society, 1 representative of the Society of Accountants of Malawi, 1 Managing Director from Illovo, 1 representative from the Ministry of Agriculture).

The Trust has the mandate to develop an operating company which is the Kasinthula Cane Growers Limited. KCG has 282 farmers. Each farmer has on average 2 ha in the 755 ha Kasinthula estate. The trust is shareholder of the KCG with 95% shareholding while Illovo Group owns 5% at the moment.

KCG uses Illovo sugar mills to process and package its sugar including selling. The KCG sugar is sold under Fair Trade agreement. With this Fair Trade, KCG get bonus of 60 US Dollars per MT. The current production of sugar from Kasinthula Estate is 8,000 MT of raw sugar (64,000 MT of sugar cane) but the demand under Fair Trade exceeds 20,000 MT.

The SVC GT, therefore, has overwhelming applications for individual smallholder farmers to join. With this, SVC GT has an immediate potential to grow with another **2,500 hectares** from existing applications.

Work was in progress on **Phase III of EU** grant funded project which is expanding the Kasinthula estate with **an extra 400 ha** of sugar cane that would be equipped with centre pivot. The expansion will allow 200 farmers to join SVC GT, which will increase the total of beneficiaries to 482 farmers when the EU project is completed.

The Development Loan which was being managed by Illovo was refinanced on 20th October 2010 by NBS Bank. At the time of refinancing the debt was standing at MK533 million. The debt has been refinanced at the interest rate of 15% and is to be repayable within 5 Years.

The other debt that Kasinthula has is with Malawi Government. This loan was provided in 2003 through the EDRP and the amount was MK200 million repayable within twenty years at the interest of 2%. Kasinthula only started making repayments towards this loan last year 2009. This loan was given to Kasinthula to help them repay the Development Loan. As at 31<sup>st</sup> December, 2010 the loan balance was MK204 million, interest from 2003 to date inclusive. The repayment amount is to be used as follows: 60% for Kasinthula Scheme Development and 40% for Drought recovery projects within Chikhwawa District.

The SVC GT envisaged that with the present rate of demand from smallholders to join KCG, the area earmarked for irrigation development under SVIP surrounding Kasinthula or Kasinthula Block could be subscribed under it. It was further envisaged that the current loan (recently refinanced with a local bank) could be squared within 5 years which could give them the opportunity to invest considerably into the SVIP. SVC GT, therefore, was willing to invest in its piped intake channels and the land developments including irrigation infrastructure and investments.

A summary of the financial performance of KCG over the period (2002-2010) is given in following table. A quick review of the financial performance of the Trust highlights major costs that directly impact on the profitability of the cane growing. It is also evident that electricity and pumping expenses represent 11% of the O&M costs and with the SVIP, it is envisaged that the KCG would yield some gains. In the June 2010 financial year end financial report reflected operational costs of K229 Million.

With 20 administrative staff and about 7,000 causal labourers, the current operation and maintenance is some MK 230 million as per the 2010 audited financial statement.

The current SVCGT management policies and practices include a full dedication of the profit to the repayment of the loan except:

- ▶ the Fair Trade bonus which is distributed to the trustees, and
- ▶ A fixed and monthly amount paid to the trustees, similar to a salary (not proportional to the cane production).

The development plan of the KCG includes:

- ▶ an annual commitment to finish repaying the initial Illovo Group loan in 5 years;
- ▶ a plan to re-invest the profit of the company for expansion of the irrigation scheme after this loan repayment period.

**Table 1.1 Kasinthula Cane Growers Limited Financial Performance**

MK'000	2002	2003	2004	2005	2006	2007	2008	2009	2010
Irrigated area in Ha	732	755	755	755	750	741	736	744	744
Tons	77,215	86,381	75,875	77,881	76,238	78,649	64,028	69,831	68,955
Kwacha/ton	1,499	1,892	2,603	2,797	3,560	4,569	5,208	5,898	6,417
Income	115,709	163,407	197,532	217,816	271,401	359,380	333,450	411,885	442,514
Field costs(O&M)	60,896	73,418	83,059	104,187	151,869	174,552	174,468	220,306	229,696
Fertilizers	6,959	6,059	6,631	7,666	15,709	20,229	23,380	32,282	31,856
Herbicides	665	-	1,313	2,164	4,031	1,565	6,449	11,142	8,231
Irrigation	2,418	2,106	3,435	3	644	1,028	676	619	1,091
Electricity	9,023	11,779	3,051	6,134	9,719	11,782	10,689	17,835	13,417
Cane haulage	23,928	31,125	53,180	62,078	78,176	85,369	73,838	78,117	90,309
Hired Labour	-	-	6,890	15,145	21,329	24,467	26,003	27,865	47,184
Plough out(replanting)	17	-	-	-	3,419	7,874	13,088	21,132	11,614
Mechanical cultivation	1,128	471	2,891	-	797	305	463	1,699	1,394
Pumping	7,734	10,097	2,615	5,001	8,329	10,099	9,162	7,329	11,500
Other	9,024	11,781	3,053	5,996	9,716	11,783	18,166	22,286	13,100
<b>Gross Margin</b>	<b>54,813</b>	<b>89,989</b>	<b>114,473</b>	<b>113,629</b>	<b>119,532</b>	<b>184,828</b>	<b>158,982</b>	<b>191,579</b>	<b>212,818</b>
Administration costs	22,752	30,079	32,977	40,430	47,324	76,575	37,373	58,744	51,899
<b>Operating Margin</b>	<b>32,061</b>	<b>59,910</b>	<b>81,496</b>	<b>73,199</b>	<b>72,208</b>	<b>108,253</b>	<b>121,609</b>	<b>132,835</b>	<b>160,919</b>

KCG also viewed the SVIP in light of the benefits it brings such as cost savings on current pumping and electricity costs, which were about MK 25 million a year, by providing gravity fed irrigation water source. This was particularly significant as the Kasinthula block area is the best located for the SVIP in both design options and operations considering:

- ▶ On the initial design (Coda & Al.): because the Kasinthula Block area is in upstream part of the SVIP area and the secondary canal will have a reduced length and shortest among them all; and
- ▶ On the alternative (Coyné et Bellier) because the pipeline 1 (for Kasinthula Block) will be the shortest and the cheapest one (9.7 km) of the 4 proposed pipelines. If the KCG has to support the investment costs of this asset, it will be the cheapest investment costs per ha for the Phase I of SVIP.

### **3.2.3 Analysis of socio-economic conditions for agricultural activities**

#### **3.2.3.1 Poverty and Other Welfare Indicators**

Poverty levels have decreased in all the regions. However, poverty rates have remained high in the southern region.

In Chikhwawa, 74.1% of the population aged 10 years or older are economically active, 63.1 % percent are subsistence farmers and 10.7 % are employed in other activities. In Nsanje about 85.3 % of the population depend on subsistence farming for their livelihood. The formal sector comprises 9 % of the labour force and a few are self-employed in the commercial sector.

Most of the population in both Districts are served with potable water. In Chikhwawa and Nsanje, people gets water from boreholes, taps, gravity water.

Food security situation has been improving ever since the fertilizer subsidies were introduced in the country in 2004/05. In the Shire Valley people have perpetually been food insecure due to drought, floods and dry spells that have prevailed in the area. The food insecurity situation is aggravated by the volatile food prices, arising due to combined effects of supply shortage and the poor road infrastructure. The introduction of the Shire Valley irrigation project has the potential to improve the situation as it will allow farmers to irrigate their crops. The Malawi Government has intensified improvement of the Road infrastructures. For example, the Government is constructing the Nsanje-Chikhwawa road and the World Inland Port.

#### **3.2.3.2 Education**

The literacy levels have generally been increasing in all the districts due to the free primary education which was introduced in 1994/05. According to Integrated Household Survey 2005, Chikhwawa and Nsanje literacy levels are 50 % of the people and 49 % literate. In Nsanje the primary school enrolment increased by 37.5 % from 35,486 in 1993/94 to 48,810 in 1994/95. In 2003, Chikhwawa district had 83,669 pupils enrolled in primary schools where 54 % of them were males and 46 % were females.

#### **3.2.3.3 Market Access and Pricing System**

Malawi has undergone market agricultural input and output marketing reforms. The state owned and controlled monopsony, ADMARC, continued to offer marketing services to the smallholder farmers in Malawi until mid 1990s when government liberalised the agricultural market which saw more agro-dealers joining the bandwagon. ADMARC was then paralysed due to stiff competition it faced from the private sector and reached a stage where it was about to be privatized. Thus between the 1994 and 2004, the agricultural market was more liberal such that there was little, state intervention –if any, in the market –than was necessarily the case before. Prices were therefore driven more by the forces of demand and supply than the fixing system.

When government changed in 2004/05, the new government brought in some changes in the agricultural market. While the agro dealers continued to dominate the agricultural market, ADMARC was given priority and revitalized to carry out its functions. Furthermore the government has perpetually controlled the export of maize to neighbouring countries on the basis of ensuring that the country is food secure. While the mechanism has ensured that the country remains food secure over the period (2005/06 to date), smallholder farmers have been adversely affected due to thin maize markets that have risen due to such restrictions. Furthermore, the government has been placing minimum prices on some priority crops (e.g. maize, tobacco, and cotton).

### 3.2.3.4 Tenure System and Property Rights

The four land tenure systems in Malawi are public, customary, leasehold and freehold :

Table 3-14: Percentage land distribution in Shire Valley.

Land Tenure	Area (in %)
Customary Land	88
Leasehold Land	1
Freehold	10
Public Land	2

Source: The National Census of Agriculture and Livestock (NACAL)

In order to illustrate the potential for PPP and its implications, the Illovo Sugar Company is one model of the land tenure arrangements. The estate is under leasehold land (99 years lease) that it acquired from the community through dialogue with the chiefs and the government. The land was initially under customary tenure but was leased by the company after agreements with the communities were made and the villagers were compensated. However, disputes over land ownership have risen in some instances between the community and the sugar company. For instance, Thom Chipakuza Village is situated in the middle of vast sugarcane fields because the villagers believe their land was not bought even though some of the land they used to cultivate was taken over by the company two years ago (Makowa, 2009). The company claims it purchased the land sometimes ago from the government after negotiations with the chiefs in the area. The villagers however argue that the company paid some of the villagers (and those left and settled on land provided by the government) while others did not receive anything (Makowa, 2009). The case has been there over a decade now.

There are 199,042 (Chinkhwawa-125,027, Nsanje-73,915) farm families in Shire Valley with each farm family holding a land size ranging from 2 to 2.5 hectares on average. Although households seem to have adequate land, not all land (arable land) is cultivated. On average, only 66 % of the arable land is being cultivated (see table below). The failure to utilise the land could be attributed to: labour shortages, lack of other inputs (For example seeds and fertilizers, among others).

Table 3-15: Total small holder area 2006/2007 Agricultural Season

Name	Total area under crop(ha)
Malawi	2,239,542
Shire Valley	99,901
Chikwawa	65,623
Nsanje	34,278

Source: The National Census of Agriculture and Livestock (NACAL)

According to CODA and partners the potential area for irrigation is about 40,000 hectares. However, most of this land is used by the smallholder farmers and falls under customary tenure. Since chiefs are critical in accessing customary land, there would be a need to develop a rapport with chiefs and their subjects to ensure that land contracting issues are addressed properly.

CODA and partners undertook consultations with local communities and revealed that both the traditional leaders and other members of the community are not willing to let people emigrate from other areas to the project area. The main reason for this feeling is that the locals do not want to lose their land to people from other areas. To ensure more efficient utilization of the land under irrigation however, there is need to encourage farmers who have ability to invest in more intensive farming in the area. Such type of farmers would inevitably have to come from areas outside the project.

Currently, 14,200 hectares is under management and formal irrigation with Illovo occupying the largest part of the land (13,833 hectares) and Kasinthula the second largest (755 hectares). The implementation of the project in the area will open a window of hope to the smallholder farmers who have perpetually been the victims of harsh weather conditions. For years, the Shire Valley has been food insecure as the area has either suffered dry spells/drought or floods. The table below shows the general distribution of land in the Shire Valley.

Table 3-16: Land Use in the Shire Valley

Protected Areas	Hectares	Area Under Irrigation	Hectares
Majete	68,900	Kasinthula	755
Lengwe	92,000	Illovo	14,200
Mwabvi	35,000		
Gross land (Ha)	580,974	Potential Area	42,000
Arable land (Ha)	202,173		
<b>Cultivated land (Ha)</b>	<b>122,701</b>		

### 3.2.3.5 Cropping Patterns, Livestock and Fish

Sugar chain value is one of the major cash crops in the country that contributes greatly to foreign exchange earnings. Sugar has since 2002 overtaken tea to become the second foreign exchange earner –accounting for close to 10% of the country's total export earnings (Memorandum to The Commission, 2006). Sugar sector is also the second largest employer in Malawi after the GoM and it directly employs approximately 14,500 people and indirectly 3,000 people through support industries, for example independent cane cutters and hawlers and so forth.

The Shire Valley is largely occupied with smallholder farmers who engage in the production of both crops and livestock. The common crops grown in the area include: cotton, maize, sorghum, millet, pulses, sweet potatoes, bananas, vegetables and fruit trees. Maize dominates the cropping systems even though the farmers are reluctant to adopt improved varieties. Pulses are also widely grown, with cowpeas as the most preferred crop type. Cotton is generally the major cash crop among the smallholder farmers unlike in other parts of Malawi where tobacco dominates. Sorghum is another cash crop grown by the smallholder farmers in the area and 75 % of national production is from the Shire Valley.



The smallholder farmers generally rely on rain-fed agriculture although some farmers practice irrigation during the winter season (mainly using treadle pumps, watering-canes or other traditional technologies). Generally, farmers get higher maize yield (1 300Kg/ha) in winter (due to irrigation) than in summer (525 Kg/ha) which normally does not involve irrigation. This is even lower than the national average yield which is estimated at 762 Kg/ha according to 2004/05 crop estimates (Ministry of Agriculture, 2005). The low yield in summer could be greatly attributed to erratic rains that appear to prevail in the area. The increase in yield attained through irrigation is however a positive indicator that adopting modernized irrigation techniques would enable the area to feed itself and possibly supply the neighbouring districts as well. However, the irrigation would be needed even during the rainy season to ensure that dry spells and drought (that are rampant in the area) do not interfere with production.

Population of Chikwawa and Nsanje also keep livestock and catch fish from the Shire River (see tables below).

Table 3-17: Total number of livestock and poultry owned by area in Malawi 2007

Area	Type of Animal				
	Cattle	Goats	Sheep	Pigs	Chicken
Malawi	884,132	2,623,017	76,613	792,364	7,557,746
<b>Shire Valley</b>	<b>101,590</b>	<b>215,031</b>	<b>2,167</b>	<b>29,390</b>	<b>378,529</b>
Nsanje	27,525	76,672	248	10,846	137,895
Chikwawa	74,065	138,359	1,919	18,544	40,633

Source: The National Census of Agriculture and Livestock (NACAL), 2007

Table 3-18: Volume of Fish Catch per Year

Year	Total Catch (Metric Tonnes) in Districts	
	Chikwawa	Nsanje
1989	1,700	
1990	358.28	
1991	1,575	5,818.3
1992	239.99	1,818.5
1993	377.57	1,802.6
1994	167.63	1,025.1
1995	377.57	1,508.91
1996	504.39	1,434.45
1997	602.92	
1998	296.47	
1999	151.71	
2000	162.93	
2001	162.29	
2002	166.39	

Source: Government of Malawi. 2003 and 1999. Chikwawa and Nsanje District Socio Economic Profile

### 3.2.3.6 Existing Production Methods and Agricultural Technologies

The Shire Valley just like any other parts of Malawi is characterized by the existence of both the estate sector as well as the smallholder sector. The smallholder farmers generally use a hand hoes, axes and pangas for cultivation. Planting and weeding is also manually done. Recently though, the use of ox-drawn carts is becoming increasingly common however use of the ox-drawn implements for tillage operations remains uncommon phenomenon in the area. The smallholder farmers however are still hesitant to adopt improved technologies as most smallholder farmers appear to be using traditional maize varieties. The use of chemical fertilizers is also not a common habit in the area. Application of animal manure in horticultural crop production was introduced by MoAFS some years ago but the practice has not been widely adopted by the smallholder farmers in the area. The MoAFS however continues to promote use of organic compost in cultivation to reduce amount of chemical fertilizers requirement and improve the moisture holding capacity of the soils.

In winter, some smallholder farmers practice irrigation at a small scale in the *dambo* lands. Normally, they use buckets, watering canes, and treadle pumps. These technologies are primitive and laborious in nature as such they do not offer farmers incentives to venture into large scale irrigation.

The smallholder farmers also keep livestock such as cattle, sheep, goats, pigs, and chickens, among others. The animals especially cattle, pigs and chicken are generally kept under free range system; thus the animals are left to freely roam and scavenge for food in the SV. Other animals like sheep and goats are usually put under tethered grazing. In summer, when plants are in the gardens, the animals (e.g. cattle) are grazed into designated grazing areas and a person is assigned to watch the animals to prevent crop damage and conflicts associated with animals. Although this system is cheaper most convenient for the smallholder farmers, it put the animals (especially pigs) at a higher risk of contracting diseases such as swine fever.

The estate sector on the other hand uses mechanization, sprinkler irrigation and canal irrigation for farming.

Table 3-19: Production Estimates from 2000/2001 to 2009/2010 Growing Season for Shire Valley ADD.

Crop	Areas, yield and total production	YEARS									
		2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Hybrid Maize	Has	8,921	31,273	22,839	13,345	12,213	9,121	11,028	8,705	21,113	23,098
	YIELD	1,732	1,326	1,766	1,420	1,040	1,090	1,560	1,906	2,164	1,204
	MT	15,455	41,478	40,337	18,951	12,696	9,940	17,203	16,593	45,688	27,799
Local Maize	Has	66,941	48,002	40,802	45,386	36,864	29,990	25,725	19,731	24,805	24,076
	YIELD	836	720	804	487	228	699	799	847	588	366
	MT	55,930	34,552	32,809	22,117	8,404	20,957	20,561	16,714	14,586	8,818
Composite Maize	Has	23,393	20,879	19,802	40,115	28,500	45,657	13,418	15,864	19,906	17,301
	YIELD	1,295	990	1,031	908	390	1,325	1,105	16,611	1,076	645
	MT	30,298	20,661	20,420	36,427	11,121	60,496	14,831	187,071	21,422	11,152
Cotton	Has	16,042	16,739	18,561	26,915	33,000	25,801	26,090	31,104	36,736	24,111
	YIELD	837	915	1,038	1,658	868	1,903	2,200	2,583	1,632	816
	MT	13,432	15,324	19,262	22,660	15,417	26,236	31,069	47,285	26,926	9,852
Rice	Has	4,588	4,767	5,463	5,772	4,575	3,179	16,558	5,496	4,111	4,247
	YIELD	1,908	1,500	748	2,193	926	2,809	3,138	3,637	3,195	2,412
	MT	8,754	7,151	4,089	6,272	2,168	4,629	22,156	10,397	6,539	5,455
Sorghum	Has	8,746	7,390	7,858	14,145	16,575	19,646	14,576	14,576	38,041	34,837
	YIELD	575	592	773	1,118	283	1,430	1,779	1,579	1,179	639
	MT	5,031	4,378	6,078	8,022	4,691	15,034	18,829	30,494	20,303	10,931
Millet	Has	5,754	5,312	6,330	10,800	11,843	15,018	14,155	6,910	7,051	20,081
	YIELD	517	525	732	263	1,535	708	700	589	414	261
	MT	2,975	2,787	4,632	2,835	18,183	10,635	9,906	4,067	2,921	5,237

Source: Ministry of Agriculture Final Crop Estimates

### 3.2.4 Analysis of Other Beneficiaries and Interests for the SVIP

Besides the above, there are a number of local **agribusiness companies** that would benefit from or whose interests would affect or get affected by SVIP. These include, for example, Agricultural Development and Marketing Corporation, ADMRC, Press Agriculture and Mulli Brothers. ADMARC is a government company that specialises in agricultural produce marketing and could play a role in marketing produce in SVIP. The Mulli Brothers are agriculture entrepreneurs and specialising in rain fed and irrigation farming, produce marketing and many other business enterprises. The company should have interest in SVIP farming and agro-businesses.

The **Press Agriculture**, like Press Cane, belongs to the Press Trust group of companies. It specialises in agriculture farming and produce management. It has estates as well as ranches, including those in the SVIP. It is an interested party in the development of SVIP. There are also agriculture interested parties in SVIP which include Lengwe National Park and Majete Game Reserve who might need water for game watering as well as irrigating folder during the dry season when the areas are bone dry and feed for animals is scarce. Besides Majete Game Reserve will be affected by the main canal.

The companies offering infrastructure services would also benefit or get affected from SVIP. These include ESCOM, Shire-Zambezi Waterway and Press Cane Limited. ESCOM is an interested party as

- ▶ Intake works in both SVIP design concepts discussed above affect their operations at Kapichira power station. The proposal to have the intake works at Kapichira affects them most as ESCOM is not favourable of the concept because of its perceived negative impacts on the operation of the power station;
- ▶ Illovo Group is a major client of ESCOM and relief on irrigation water pumping from Shire River would release substantial power supply (20 MW now and 40 MW after expansion). Equally important is the potential electricity that Illovo would put into ESCOM grid if not used by itself now or after planned expansion; and,
- ▶ Both ESCOM and SVIP would compete for the same water resources and any regulations upstream to maximise hydropower generation may affect the SVIP irrigation water supply. The Shire-Zambezi Waterway with its port in Nsanje, which is within 100 km of SVIP is positively and negatively affecting the SVIP. These effects and affects include:
  - Provides opportunities for much cheaper export transport costs that would make SVIP productive competitive on world and regional markets; and
  - However, competes with SVIP on water resources utilisation as the SVIP irrigation water supply would not be available for navigation use. This would mean during periods and years of low flows in Shire River painful decisions have to be made as to which project would have the water resources competed for.
- ▶ The **Press Cane Limited** is producing ethanol exclusively based on the molasses sold by Illovo Ntchalo factory. The Press Cane ethanol plant has installed capacity of processing 250 MT of molasses / day but the plant is under-utilized and as:
  - Illovo supplies only an average of 200 MT/day of molasses and for only six months in a year, during the dry season when the sugar, cane can be harvested and processed in the sugar mills.
  - Expansion of Illovo, Kasinthula sugar plantations and increased sugar production is welcome as it would increase availability of molasses thereby improve use of the ethanol production installed capacity and reduce the unwanted idle time;

- The effect of increased sugar cane land by considering an 8,000 ha of sugar cane could produce 30,000 MT of molasses per year (with 110 MT of cane, per ha and a production of 3.5% of molasses), which could increase the capacity utilization of the plant of 120 days per year. Press Cane had storage facilities which would enable storage of access molasses and process it later when the supply from Illovo diminishes; and
- Ethanol production expansion, therefore, is limited by limited availability of molasses while the use of sugar cane straight from the field was limited by availability of sugar cane crushing mills, which were only available at Illovo.

### 3.2.5 Analysis of main stakeholders expectations for the SVIP

The main public stakeholders of the SVIP are the line ministries and departments discussed in section 1.5.1. Their expectations are as follows:

- (i) The **Ministry of Irrigation and Water Development** expectations include:
  - a. The multi-purpose and integrated water resources development of the SVIP that takes into interests the multipurpose and multi-sectoral utilisation and management needs of the Shire River – energy and hydropower, agriculture and food security, transport and navigation, floods protection, trade and industry, etc.;
  - b. Designs of irrigation infrastructure and non irrigation services that would be market SVIP to private sector in a PPP arrangements ;and
  - c. Irrigation infrastructure that delivers water and whose operation and maintenance can be sustainably managed within the resources generated by SVIP;
- (ii) The **ministry of Agriculture and Food Security** expectation is SVIP's contribution to:
  - a. improved agriculture production and contribution to food security at household and national level;
  - b. realisation of the Greenbelt Initiative, as it would have the largest area under Greenbelt;
  - c. promotion of agro-business and export oriented agriculture and their products; and;
  - d. poverty reduction.
- (iii) The **Greenbelt Initiative** has the greatest expectation of the SVIP, with its ambition of having one million hectares of greenbelt. This SVIP would contribute more than 4% to this total greenbelt area. It will contribute to greenbelt goals of making Malawi a predominantly manufacturing and exporting country.
- (iv) The **Donors** have a significant role to play in the design and implementation of the SVIP. There are already donors that have shown interest in the projects and these include EU, World Bank and ADB. Their interests are summarised as follows:

- a. The *European Union* is supporting the privately owned Kasinthula and Dwangwa Cane Growers Trusts in Lower Shire and Nkhotakota, respectively. EU raised a number of issues to be considered in the SVIP finalization and PPP study which included:
- ▶ SVIP land acquisition not to drive out the poor into more poverty when their land is converted to private irrigation farms, as private land acquisition was risky in the area. It was reported that the region was already experiencing shortage of land and land pressure with the landlessness situation forcing the Government to run programmes for purchasing private land and relocating and resettling the landless. This obviously makes continued conversion of land into private land require diligence to avoid future social unrest due to the landless who become destitute;
  - ▶ SVIP cost estimate needs to be exhaustive and include costs for some essential elements. These include cost for services required for marketing and export services such as food processing and packing, transport services, social services including the cost of health services, utility services, welfare services, etc. These need to be examined including their influence on PPP;
  - ▶ Irrigated crop selection should be diversified and avoid monopolistic crop production e.g. it should not just be sugar cane or food security crops or just tomato and onions but a variety of crops to sustain markets and compete favourably with high valued crops such as sugar cane. Extension services need to be fully involved in design, implementation, operation and maintenance of such irrigation schemes to always maintain diversified and competitive crop production and marketing; and
  - ▶ Strong O&M strategy and its implementation are essential to avoid costly rehabilitations and possible failures of irrigation services. The experiences of major and prevalent rehabilitation works or requirements for public schemes should be avoided. This is essential to prevent the general pre-occupation of Government and wastage of resources on rehabilitating schemes already developed that seriously hinders efforts to expand schemes to needy communities in potential areas.
  - ▶ EU favoured the SVIP implementation but on basis of:
    - Adopting design that maintain optimal and minimum capital costs of its development and affordable and sustainable O&M;
    - Acquiring land and development of a land tenure system that does not worsen poverty of the displaced communities and is unlikely to cause social unrest; and
    - Development of irrigation schemes within SVIP on the basis of structuring irrigation schemes similar to those of Kasinthula and Dwangwa Cane Growers Trust.

- b. *The World Bank* is interested in the SVIP as demonstrated in the support it has provided in this study. It has also demonstrated the support on water resources development of the country through the National Water Development Project I and II. In NWDP II the World Bank support includes that for multi-purpose water resources framework development, including investment studies on multi-purpose water resources infrastructure developments.
- c. *The African Development Bank, ADB*, is ready to co-finance the SVIP with World Bank with technical and financial assistance along the lines of those given to Dwangwa Smallholder Sugar Authority under Illovo Dwangwa. Despite this, ADB was worried with the need to:
- ▶ Update the existing situation analysis to adequately inform the updating and revision of SVIP design and EIAs;
  - ▶ Design and implement the SVIP and its PPP based on food security and export oriented economy, with identification of appropriate and available commercial crops that are competitive on regional and world market and can be sustainably produced; and
  - ▶ Critically review and develop appropriate and balanced land ownership distribution scheme between private sector and smallholder for available land outside the existing Illovo and Kasinthula Cane Growers Trust land, with agreeable compensation framework for the communities that would surrender their land to private sector.

### 3.3 PPP TRANSACTION MODEL OPTIONS

This section will follow different steps:

- ▶ First step: it is a reminder of general definition for PPP design.
- ▶ Second step: a more in-depth discussion for the specific case of SVIP about sharing functions and responsibilities between private and public parties.
- ▶ Third step: a description of nature of non-irrigation services.
- ▶ Fourth step: an analysis to assess if irrigation and non-irrigation services PPP should be considered in a single or separated PPP contracts;
- ▶ Fifth step: a conclusion to decide which scenarios will be detailed in the financial simulation.

#### 3.3.1 Reminder of general main definitions used in the current analysis

The following figure illustrates the diversity of PPP arrangements that can be designed according to three main criteria:

- ▶ The origin of the revenues for the private operator (paid by the final users or paid by the public authority, the contracting authority),
- ▶ The different functions that the private partner will take responsibility for through the PPP contract (design, construction, etc.),
- ▶ The contribution (or not) of the private partner to the capital expenditures (CAPEX) of the Project.

Figure 3-4: Main PPP transaction models according origin of revenues for private, functions delegated and sharing of investment functions

Origin of revenues for private operator	Functions under responsibility of private operator	Participation of private operator in investment functions (capital costs) ?	
		Yes	No
Services paid to the private operator by the final users (farmers) - Public Service Delegation (PSD)	Design	Concession	Lease / Affranchise
	Construction		
	Transfer of infrastructures after completion of construction	Divestiture	
	Operation & Maintenance		
	Ownership of O&M assets	Possible transfer of infrastructures after completion of PPP contract	
	Ownership of infrastructures		
	Possible transfer of infrastructures after completion of PPP contract		
Services paid to the private operator by the Public Authority	Design	BOT	O&M contract EPC - DB DBO = EPC + O&M contracts
	Construction		
	Management (staff of private operator in Public Entity)	BOO	
	Operation & Maintenance		
	Ownership of O&M assets	Manag. contract O&M contract	
	Transfer of infrastructures after completion of construction		
	Ownership of infrastructures		

**Legend:**

Differences between lease and affranchise is in the rent paid to the Contracting Authority (lease fees: fixed rent / Affranchise fees : varying on revenues collected from users)  
 BOT : Build Operate Transfer  
 BOO: Build Operate Own  
 Manag. Contract : Management contract  
 O&M Contract : Operation & Maintenance contract  
 EPC / DB : Engineering Procurement Construction (also called Design Build)  
 DBO : Design Build Operate (contract with EPC + O&M together)





The most interesting PPP models for the SVIP are the following:

- ▶ **The concession (public service delegation)** where the private will be required to contribute to the CAPEX, where its revenues will come from fees from final users (farmers) and where a large range of functions could be delegated to the private operator. This is the most risky arrangement for the private partner. The Guerdane Project in Morocco and the initiatives in Brazil and Egypt are built on this model. According to the functions transferred to the private, this kind of concession is sometimes called DBOT (if Design Build Operate Transfert), or DBTO, or any other acronyms that will indicate the functions transferred to the private.
- ▶ The **lease / affermage** will consist in a transfer to the private partner of operation and maintenance without any significant responsibility in financing the CAPEX. This model is less risky for the private partner (no financing functions).
- ▶ The **O&M contract** (or management contract) or any other arrangements on the right bottom part of the figure where the private partner will limit its risks (no financing role and revenues originated from the contracting authority and not from the users).

### 3.3.2 Discussion on potential functions to be delegated to the private partner and elaboration of PPP options for SVIP

Two types of services can be distinguished for the purpose of this study:

- ▶ **“Irrigation services”** including mainly the following functions: design, construction, cofinancing capital cost (in some PPP options), operation and maintenance. Even if the generic term “irrigation services” will be used in the report, the private operator could be asked to provide water from the hydraulic assets he will manage for other uses than irrigation like water supply. This will not change the nature of the services provided by the operator.
- ▶ **“Supporting services for agricultural production (non-irrigation services) to smallholders and outgrowers”** will refer to the activities listed in the table: support to development of irrigated areas in some cases, support to input supply, extension, processing and marketing services. In Morocco, it is called “aggregation contract”. This term will be used as a synonym in this report.

The following table shows different options for PPP transaction according to the functions performed by the private operator. In each cell is computed the party in charge of the functions: private, public or shared responsibilities (like for financing). In the last line, a comment is made to assess if this PPP option is already implemented or studied in another country (see section 2. and annex 3 for further details on the current international experiences).

Figure 3-5: Options for PPP transaction according to functions to be delegated to the private partner

Potential Functions under responsibility of private operator	Options for PPP transaction models					
	1- Concession on Irrigation services + supporting services in agriculture	2- Concession on Irrigation services	3- Lease / Affermage contract + supportings services in agriculture	4- Lease / Affermage contract	5- Supervision and O&M contract for irrigation services + supporting services in agriculture	6- Supervision and O&M contract
<b>A. Irrigation services</b>						
<b>1. Final design and construction</b>						
Final Design and preparation of bidding documents for construction	Private	Private	Public or Private (in another contract)	Public or Private (in another contract)	Public or Private (in another contract)	Public or Private (in another contract)
Construction	Private	Private	Private (in another contract)	Private (in another contract)	Private (in another contract)	Private (in another contract)
<b>2. Supervision of construction</b>						
	Private	Private	Private (in another contract)	Private (in another contract)	Private	Private
<b>3. Financing of capital costs</b>						
	Private / Public / Beneficiaries	Private / Public / Beneficiaries	Private (?) / Public / beneficiaries	Public / beneficiaries	Public / beneficiaries	Public / beneficiaries
<b>4. Operation and maintenance of Irrigation and Drainage assets</b>						
Transfer of main infrastructures after completion of construction	Private	Private	Private (in another contract)	Private (in another contract)	Private (in another contract)	Private (in another contract)
Operation & Maintenance	Private	Private	Private	Private	Private	Private
Renewal (and / or renewal fund to contribute)	Private / Public	Private / Public	Public	Public	Public	Public
<b>B. Supporting services for agricultural production (non-irrigation services) for smallholders and outgrowers</b>						
Irrigable areas development	Private / Public	Public or Private (in another contract)	Public / Private	Public or Private (in another contract)	Public / Private	Public or Private (in another contract)
Support to inputs supply	Private		Private			
Extension services	Private		Private			
Support to processing & marketing	Private		Private			
<b>Comments</b>	Similar to Brazilian initiatives	Similar to Moroccan and Egyptian initiatives	-	-	-	Similar to Ethiopian initiative

The previous table proposes 6 options:

- ▶ Three options are designed with irrigation services and non-irrigation services functions in the same PPP contract: options n°1, 3 and 5. The other options will separate the two kind of services (n°2, 4 and 6).
- ▶ Options 1 and 2 are with a concession for irrigation services
- ▶ Options 3 and 4 are on a lease / affermage arrangements for irrigation services (no financing function for the private but he will take the risk of demand and payment because his revenues will come from the irrigation fees collected from the farmers)
- ▶ Options 5 and 6 are on O&M (or management) contract arrangements for irrigation services (no financing function for the private no risk of demand because his revenues will come from the Contracting Authority who will take the demand and payment risks).

The first question to answer on this analysis of PPP models is to assess the interest of having irrigation and non-irrigation functions in the same PPP contract.

The next two sections will aim to describe what could be a PPP contract for non—irrigation services (based on international and Malawian experiences) and then to analyze advantages and drawbacks of having these two services in the same PPP contract.

### 3.3.3 Description of supporting services for agricultural production PPP contract

In the following description, we will consider different cases:

- ▶ For the sugar cane chain value, the Illovo Group proposal for expansion areas
- ▶ For other chain value where an agribusiness company (or a large commercial farmer with access to market) will provide services to smallholders / outgrowers. We will distinguish two cases:
  - When land is acquired by the private from the local community
  - When the private does not pretend to produce by itself but just have contract farming.
- ▶ For other chain value where services are provided by a private company specialized in extension (and not part of agribusiness sector).

#### THE ILLOVO GROUP PROPOSAL FOR SUGAR CANE EXPANSION AREAS

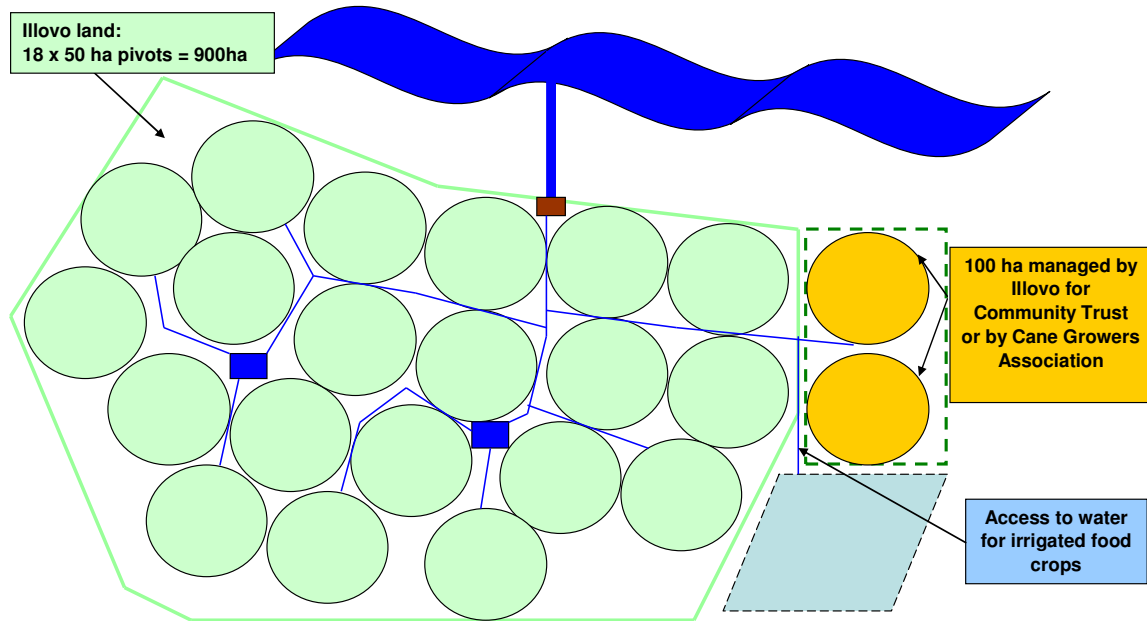
This company wants to develop the following model for most of its expansion areas:

- ▶ For each plot of 1,000 ha, Illovo Group will get a lease for 900 ha, and 100 ha will be management of a community trust.
- ▶ ILLOVO will develop the full area (1,000 ha, in green and orange in the following schematic), pay for the relocation costs and build the bulk water asset for an area dedicated to irrigated food crop (in blue). Illovo will not fund the equipment of this area for food security. It will have to be done by the community, public and / or donors funds.

For the management of the 100 ha under the community trust, there are two possibilities:

- ▶ Either a **Community Trust** will be created (like in Kaombe), **Illovo will manage the 100 ha** on behalf of this trust. A long-term cane supply agreement is signed with Illovo's Nchalo estate. A legal project vehicle (Trust/Charity) is created with a Board of Trustees with representatives from the community. The Trust will manage profits generated.
- ▶ Or a **Small growers association** is created to manage this 100 ha (Illovo's investments are the same as described before). Illovo will not manage the 100 ha, as in the previous case, but could provide extension services.

Figure 3-6: Illovo proposal for involvement of local communities in expansion plans



This relationship between Illovo, the community and the public party / donors (for development of area for irrigated food crop) is a PPP in the sense that:

- ▶ A private partner is providing public services (financing of equipment areas for smallholders, extension services, bulk water supply, etc.)
- ▶ For final users: local community
- ▶ With the support of public party (for equipment of areas for food security purposes).

### FOR OTHER CHAIN VALUES (SEE OPTIONS N°2 & 3 IN FIGURE ON NEXT PAGE)

For other value chains to be developed in SVIP command area, as described in the following table, it is important to distinguish:

- ▶ When an agribusiness company (or even a large commercial farmer) will acquire lease in the area to produce this commercial crop. For example, an investor in juice production wishing to guarantee part of the production (mango, for example) for his factory. He will produce on his lands and may have contract farming with smallholders, providing input supply, extension, support for post-harvest, etc.
- ▶ Other agreement could also be done with an agribusiness company without any own managed land. For example, a company specialized in tomatoes processing that will only install a factory and will rely on the product totally on contract farming. In this case, the private company will have more interest in supporting the farmers to ensure the production.

Figure 3-7: Different PPP designs for supporting services for agricultural production for smallholders

Functions for supporting services to agricultural production	Services provided by agribusiness companies				Services done by other service providers
	With farm land acquired by agribusiness company from the local community and / or from Government		Without farm land acquired (contract farming)		
	1- Sugar Cane Chain Value (Illovo proposal)	2- Other chain value	3- Other chain value	4- All chain value	
	With Community Trust	With Small Growers Association			
<b>Irrigable areas development for smallholders and outgrowers</b>					
Areas for Commercial crops	Full development by the Agribusiness Company		Agribusiness / beneficiaries / Public / Donors ?	Agribusiness / beneficiaries / Public / Donors ?	Beneficiaries / Public / Donors ?
Areas for Irrigated Food Crops	Bulk water assets by Agribusiness company / On-field investments by Govt & Donors				
<b>Management of production in smallholders land</b>	Agribusiness company	Smallholders organization	Smallholders in general	Smallholders in general	Smallholders in general
<b>Support to inputs supply</b>					
Irrigation services	-	Smallholders Organization / Agribusiness company	Agribusiness company or Private operator for O&M	Agribusiness company or Private operator for O&M	Private providers, NGO, farmers apex organizations, etc.
Other inputs supply	-	Smallholders organization			
<b>Extension services</b>	-	Agribusiness company	Agribusiness company	Agribusiness company	
<b>Support to processing &amp; marketing</b>	-	Agribusiness company			

In Morocco, the development of these concepts of non-irrigation services are part of the Plan Maroc Vert (Green Morocco Plan) under the names of “aggregation contracts” where an agribusiness company, the smallholders (preferentially organized or in association or cooperative) and the public party will develop contractual agreement where:

- ▶ The agribusiness company will provide support and market to the smallholders and sometime access to land
- ▶ The smallholders will be committed to produce the commodity under specific requirements and deliver the production to the agribusiness company
- ▶ The public party will provide some incentives (fiscal incentives, access to land in the case of former public state companies, technical support, investment support, support in case of “Force Majeure” like droughts, flood, etc.).

These aggregation contract are obviously very different one from another according to the chain value, the degree of aggregation, etc.

### **DIVERSIFICATION OF EXTENSION SERVICES (NOT DONE THROUGH AGRIBUSINESS COMPANIES) WITH PRIVATE PROVIDERS, NGOs, APEX FARMERS ORGANIZATION, ETC... (SEE OPTION N°4 IN PREVIOUS TABLE)**

Another option could be to develop with a diversification of extension services (an not with direct link with any agribusiness company). This proposal is part of the World Bank project "Irrigation, rural livelihoods and agricultural development project".

This project aims to implement the Government's new extension policy focuses on developing a pluralist and demand driven extension. The extension service is being devolved to the District Assemblies (DAs). Stakeholders would be given control to give demand driven orientation to extension through the District Agriculture and Natural Resource Coordination Committee (DANRCC), the District Stakeholder Panel and the Area Stakeholder Panels. There are a range of service providers in the project districts: district public extension workers; farmer apex organizations, such as the National Smallholder Farmers Association of Malawi (NASFAM); NGOs, such as CARE; and private extension agents working in outgrower schemes, such as the sugar estates in Kasinthula, Chikwawa district.

This option is mostly funded by public funds which is the main difference with the previous arrangements were the private party (agribusiness company) is contributing significantly to the cost.

In some cases, the lack of good local extension providers and / or the poor knowledge of commercial value chains may create a new system with low efficiency. This arrangement may be developed for non-commercial chain values (like irrigated food crops) and if the other arrangements (with agribusiness companies) are not feasible. There is also a need for broad capacity building activities not directly related to one crop (like establishing Producers' organizations) which is a public mandate.

#### **3.3.4 Discussion on mixing or not Irrigation services and non-irrigation services in the same PPP contract**

One single PPP contract for irrigation and non-irrigation services (like options n°1, 3 and 5 of figure 3-8) will have the advantages of:

- ▶ having an unique bidding process with savings of time and resources
- ▶ having only one private partner to deal with for the Contracting Authority
- ▶ limiting risk for the private partner with diversification of activities and revenues.

But will have also the following drawbacks:

- ▶ limit the development of non-irrigation services because only one contract is awarded although, in theory, there is a potential for development of several chain value of cash crops in the project area
- ▶ (create a) risk of selecting a not performing operator. Selecting the best private partner should be done on the most risky function (i.e. on irrigation services) which means that the successful bidder will not be necessarily the best bidder for the non-irrigation services
- ▶ generate extreme dependence for smallholders: water and all the other inputs and services will be provided by the private company

- ▶ oblige the Contracting Authority to select private operator on a competitive bid although the PPP for non-irrigation services could be based on simpler procedures even giving opportunity for private companies to submit unsolicited bids or developing selection process like “beauty contest”.
- ▶ create some difficulties for elaboration, negotiation and regulation of contract having two very different activities (with different modalities of revenues, different performances indicators, etc.).

In conclusion, due these drawbacks, **the consultant recommends to separate contracts for irrigation and non-irrigation services** which allow the contracting authority (ies):

- ▶ to have one private partner for irrigation services (selected on the best proposal)
- ▶ to have one or several partners (agribusiness companies) for aggregation PPP contracts.

The agribusiness companies could be selected on simpler procedures like “call for proposals” where the public party will explain the conditions for attracting the private: tax exemption or other fiscal incentives, lands availability, etc. and receive proposals from private companies. The selection of proposal is made on pre-defined criteria (“beauty contest”).

It is also important for the public party to keep some flexibilities on contract negotiation in accordance with the public interest of the aggregation project. An aggregation project which has more socio-economic impacts (more employment creation, a higher number of smallholders involved, gender issue better considered, etc.) should be implemented under conditions distinct from another project with less socio-economic impacts.

In order to “keep the door open” for the development of unexpected chain values (niches product, pharmaceutical products, biological agriculture, etc.), the public party could develop a specific procedure to receive unsolicited bids for PPP in non-irrigation services from agribusiness companies or other stakeholders (large commercial farmers, etc.).

### 3.3.5 Conclusion: selection of options for financial simulation

In order to go deeper in the analysis, a financial simulation has to be developed for the selected options.

The previous analysis allow us to reach the conclusion of the necessity to separate PPP contracts for irrigation and for non-irrigation services: the consequence is that options n°1, n°2 and n°3 are eliminated. Scenario n°6 is not transferring enough risks to the private partner and will be considered only if options 2 and 4 are not financially feasible

The next section will simulate financial feasibility of options n°2 and n°4 for PPP for irrigation services exclusively.

Table 3-20: Selected options for financial simulation

Potential Functions under responsibility of private operator	Options for PPP transaction	
	2- Concession on Irrigation services	4- Lease / Affermage contract
<b>A. Irrigation services</b>		
<b>1. Final design and construction</b>		
Final Design and preparation of bidding documents for construction	Private	Public or Private (in another contract)
Construction	Private	Private (in another contract)
<b>2. Supervision of construction</b>		
	Private	Private (in another contract)
<b>3. Financing of capital costs</b>		
	Private / Public / Beneficiaries	Public / Beneficiaries
<b>4. Operation and maintenance of Irrigation and Drainage assets</b>		
Transfer of main infrastructures after completion of construction	Private	Private (in another contract)
Operation & Maintenance	Private	Private
Renewal (and / or renewal fund to contribute)	Private / Public	Public
<b>B. Supporting services for agricultural production (non-irrigation services) for s</b>		
Irrigable areas development	Public or Private (in another contract)	Public or Private (in another contract)
Support to inputs supply		
Extension services		
Support to processing & marketing		
<b>Comments</b>	Similar to Moroccan and Egyptian initiatives	-



## 3.4 RESULTS OF FINANCIAL MODELLING FOR IRRIGATION SERVICES

### 3.4.1 Objective of the financial projections

The objective of the financial modelling is to estimate the financial balance of the irrigation services, under different technical and financial hypothesis and assumptions, combined as scenarios. Financial simulations also enable to estimate the level of tariffs required to ensure the financial viability of the PPP project.

The time scale for the simulation starts in 2012 and goes up to 2041, consistent to the duration of the contract estimate of 30 years.

The financial projections are developed in dollar and in current prices :

- ▶ the exchange rate between US\$ and MK is fixed at the flat rate of US\$ 1 = MK 150\$,
- ▶ the international inflation is considered to be steady at 2% during the period.

Financial arrangements and sharing of investments costs between the different stakeholders (including private operator, State, beneficiaries) in the project are a critical issue. A financial package is assumed, considering the possible lending from international partners and their conditions.

Depending on financial sharing of SVIP investments costs, results present in this chapter,

- ▶ Tariffs required to ensure the financial viability of the private operator and consistent with the capacity to pay for irrigation fees of final users (farmers) ;
- ▶ The financial Internal Rate of Return of project ;
- ▶ The impact on State Budget.

### 3.4.2 Main hypothesis and assumptions

The following sections will resume the main technical and financial hypothesis and assumptions used for the financial modelling exercise.

#### 3.4.2.1.1 General design of SVIP

The schematic exposed on next page illustrates the selected design of the SVIP (the justification of these decisions were given in sections 3.1 and 3.2):

- ▶ High level canal options with intake in Kapichira reservoir in order to save CAPEX and to provide pressurized water delivery at the outlet of secondary distribution (pipelines)
- ▶ Development of Phase I (23 300 ha of command area) and Phase II (18,000 ha of command area) with the land use proposed in next section. The estimate of command area came from Coyne & Bellier design (see annex 2 of the C&B design review).
- ▶ Illovo expansion is split between Phase I and Phase II, Kasinthula expansion is in Phase I, diversification is promoted in both SVIP Phases.

### 3.4.2.1.2 Orientation of agricultural production in Phases I & II

The existing stakeholders demand for land and water had been used in the model to make a realistic financial simulation of a PPP approach within this context, but this will need to be revised according to actual land use pattern defined in agreements to be made with Government and local communities.

The actual development model used (Illovo or Kasinthula) will not change the results of the PPP financial modeling. The demand pattern may change after consultation with smallholders and agribusiness companies have been done.

## PHASE I

As concluded in sections 3.1 and 3.2, **Phase I is unavailability predominantly oriented towards sugar cane production** because the SVIP would supply (cf. Annex 4):

- ▶ Existing sugar cane areas: 11,235 ha with 755 ha in Kasinthula and 10,480 ha in Illovo Estate
- ▶ Expansion sugar cane areas:
  - For SVCG Trust (Kasinthula Project): at least 400 ha of incoming expansion based on European Union (EU) fundings plus 2,500 ha to satisfy local demand
  - For Illovo Group: 1,127 ha of expansion (Sande North, Kasinthula Ranches, Jombo East and West, Lengwé North) if the expansion plan is agreed
  - For other Sugar Cane Smallholders Growers and/or Private Companies.

These hypothesis of sugar cane development are in accordance with:

- ▶ The Shire Valley Cane Growers Trust (Kasinthula) and Illovo Group strategies (see section 3.3)
- ▶ Some statements made during the Q&A session done by the Consultant in Chikwawa district where the participants expressed demand for development of the outgrowers model
- ▶ The overarching objectives of the National Adaptation Strategy (NAS) elaborated as a response to the changes of current sugar regime announced by the European Commission<sup>2</sup>: i) to increase cane production and factory output, ii) to increase production through efficiency gains.
- ▶ The overall aim of the 2007-2010 Multi Annual Programme (MIP): reduce poverty in Malawi through the expansion of the outgrowers' sugar cane sector.

Table 3-21: Crop distribution used in financial modelling for Phase I

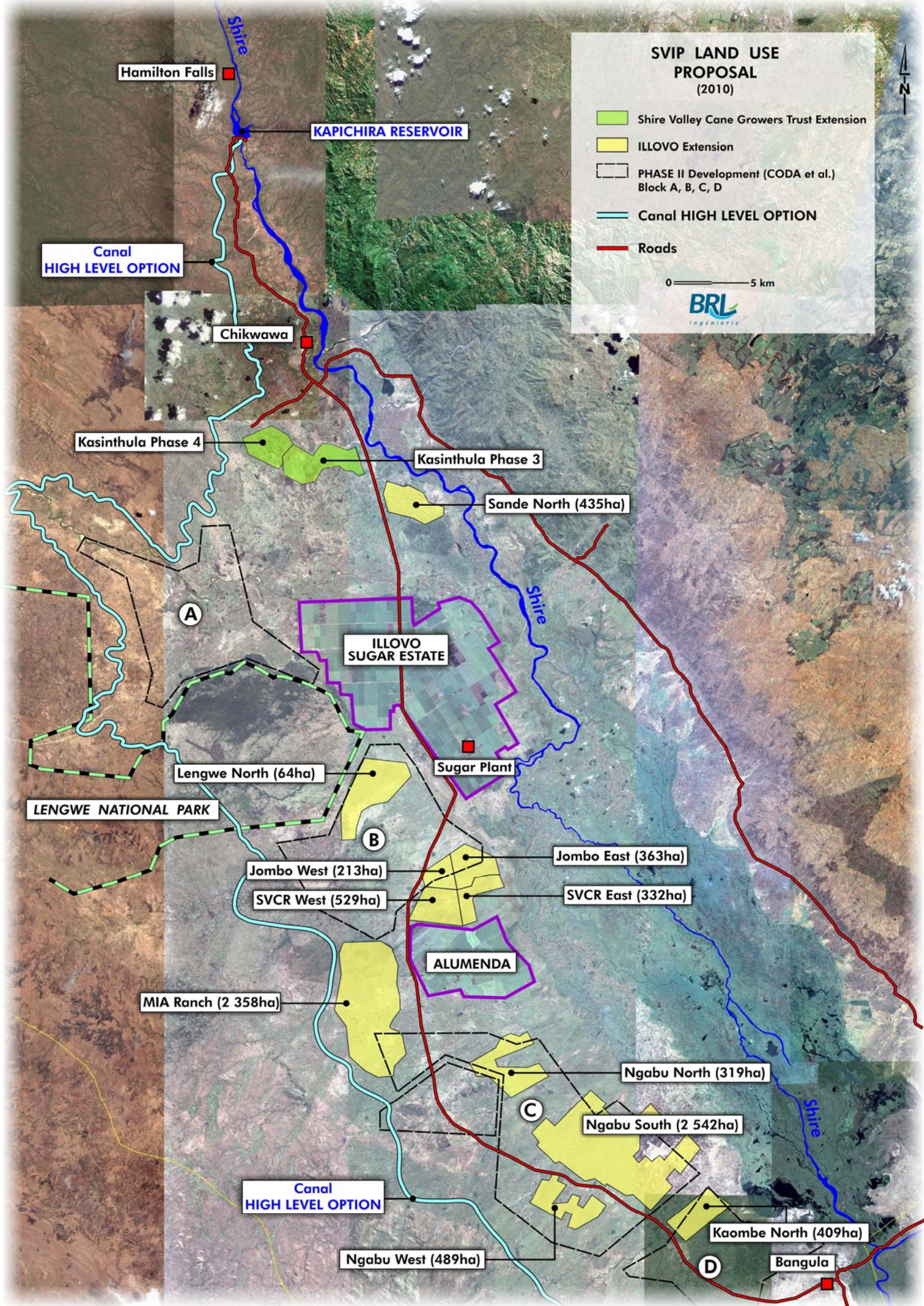
Phase I	Sugar cane (ha)			New areas with diversified crops (ha)		Total in ha)
	Existing areas		New areas (SC growers or companies)	Commercial crops	Irrigated food crops	
	Illovo	Shire Valley Cane Growers Trust areas				
Kasinthula area - pipe 1	454	755	4 739	1 200	552	7 700
Nchalo - pipe 2	3 342		1 200	600	458	5 600
Nchalo - pipe 3	3 342		1 200	600	458	5 600
Nchalo - pipe 4	3 342		1 011	-	47	4 400
<b>Total (in ha)</b>	<b>10 480</b>	<b>755</b>	<b>8 150</b>	<b>2 400</b>	<b>1 515</b>	<b>23 300</b>
%	45%	3%	35%	10%	7%	100%
		48%	35%			
			<b>83%</b>		<b>17%</b>	<b>100%</b>

<sup>2</sup> Decision to align the production and marketing of sugar with the rules of the WTO and then in June 2005 announcement of reforms to the sugar regime of the Common Agricultural Policy in particular phasing out of subsidies and accelerated elimination of quotas and import tariffs for Least Developed Countries.

# SVIP LAND USE PROPOSAL (2010)

- Shire Valley Cane Growers Trust Extension
- ILLOVO Extension
- PHASE II Development (CODA et al.) Block A, B, C, D
- Canal HIGH LEVEL OPTION
- Roads

0 ————— 5 km



Hamilton Falls

KAPICHIRA RESERVOIR

Canal HIGH LEVEL OPTION

Chikwawa

Kasinthula Phase 4

Kasinthula Phase 3

Sande North (435ha)

ILLOVO SUGAR ESTATE

Sugar Plant

Lengwe North (64ha)

LENGWE NATIONAL PARK

Jombo West (213ha)

Jombo East (363ha)

SVCR West (529ha)

SVCR East (332ha)

ALUMENDA

MIA Ranch (2 358ha)

Ngabu North (319ha)

Ngabu South (2 542ha)

Canal HIGH LEVEL OPTION

Ngabu West (489ha)

Kaombe North (409ha)

Bangula

Nevertheless, the consultant has taken the hypothesis that around 17% of the area could be developed with diversified crops:

- ▶ based development of diversified crops promoted by agribusiness companies: 2,400 ha;
- ▶ and some food security crops in the same proportions used for Phase III of Kasinthula Project: 20 ha of irrigated food crops, maize and rice to be compared with 400 ha of sugar cane. In the calculation, 5% of the sugar cane areas developed for outgrowers will be kept for irrigated food crops.
- ▶ new areas for irrigated food crop on Illovo expansion areas (see model on section 3.3.3)°
- ▶ and other development of food crops estimated to 1,260 ha.

## PHASE II

Phase II would have:

- ▶ sugar cane on 75% of the command area: 3,688 ha of existing areas of Illovo and around 9,800 ha of expansion including potential expansion of Illovo or other Sugar Cane Growers and / or private companies;
- ▶ diversified crops on 25% of the command area.

Table 3-22: Proposed crop distribution in Phase II

Phase II	Sugar cane (ha)			New areas with diversified crops (ha)		Total in ha)
	Existing areas		New areas (SC growers or companies)	Commercial crops	Irrigated food crops	
	Illovo	Shire Valley Cane Growers Trust areas				
Alumenda	2 861		-	-	-	2 861
Kaombe	827		-	-	-	827
Other areas	-		9 756	3 600	956	14 312
<b>Total (in ha)</b>	<b>3 688</b>	<b>-</b>	<b>9 756</b>	<b>3 600</b>	<b>956</b>	<b>18 000</b>
%	20%	0%	54%	20%	5%	100%
		20%	54%			
			<b>75%</b>		<b>25%</b>	<b>100%</b>

## WHOLE SVIP

The projected land use for the whole project is shown on the below table. With these assumptions, sugar cane occupies 79% of the area but only 68% if only new areas are considered, diversified crops occupy 21% of total area but 32% if only new areas are considered.

Table 3-23: Proposed crop distribution for whole SVIP

Total SVIP	Sugar cane (ha)			New areas with diversified crops (ha)		Total in ha)
	Existing areas		New areas (SC growers or companies)	Commercial crops	Irrigated food crops	
	Illovo	Shire Valley Cane Growers Trust areas				
Phase I	10 480	755	8 150	2 400	1 515	23 300
Phase II	3 688	-	9 756	3 600	956	18 000
<b>Total (in ha)</b>	<b>14 168</b>	<b>755</b>	<b>17 906</b>	<b>6 000</b>	<b>2 471</b>	<b>41 300</b>
% on total area	34%	2%	43%	15%	6%	100%
		36%	43%			
			79%		21%	100%
% on new areas			68%	23%	9%	100%

### 3.4.2.1.3 Estimate of Capital expenditure (CAPEX)

The estimate for Capital Expenditures for Phase I, Phase II and whole SVIP are shown on the following tables. The sources for unit costs are:

- ▶ Review of feasibility study 2010 done by Coyne & Bellier for Illovo for: intake, feeder canal, Bangula canal estimates (see details in section 3);
- ▶ Illovo estimates for tertiary and on-field works and equipment for expansion areas with centred pivot: 9,301 USD/ha (see details in annex 5). In Phase III of Kasinthula, the estimate for capital costs is 6,820 USD/ha (including pumps). We will selected this cost of 6,800 USD/ha in the following calculation.
- ▶ Illovo estimates for on-field equipment for existing areas: 1,872 USD/ha (see details next section where the costs of shifting from river pumping to SVIP is estimated for Illovo areas);
- ▶ Pipelines: estimate of the consultant using optimized (reduced) investments if compared with 2010 Review: 3,000 USD for each ha in command area.

Table 3-24: Estimate of CAPEX for Phase I (in Thousands USD<sub>2010</sub>)

Intake & Phase I	Unit cost	Quantity	Total
Intake			5 213
Feeder canal (Phase I) - 35 m <sup>3</sup> /s - 30 km			63 022
Pipe 1 - 7,700 ha pivot (optimized)	3 000	7 700	23 100
Pipe 2 - 5,600 ha (optimized)	3 000	5 600	16 800
Pipe 3 - 5,600 ha (optimized)	3 000	5 600	16 800
Pipe 4 - 4,400 ha (optimized)	3 000	4 400	13 200
Illovo on-field equipment for existing areas (costs for connection to SVIP)	1 872	10 480	19 618
Illovo tertiary and on-field works and equipment for expansion areas	6 800	1 127	7 666
KCG tertiary and on-field works and equipment for existing areas	1 872	755	1 413
KCG tertiary and on-field works and equipment for expansion areas	6 800	2 900	19 720
Outgrowers (on Illovo expansion) tertiary and on-field works and equipment	6 800	125	852
Other outgrowers areas tertiary and on-field works and equipment	6 800	3 998	27 185
Commercial crops areas tertiary and on-field works and equipment	6 800	2 400	16 320
Tertiary and on-field works and equipment for irrigated food crops	6 800	1 515	10 304
<b>Total Intake + Phase I</b>			<b>241 212</b>

Table 3-25: Estimate of CAPEX for Phase II (in Thousands USD<sub>2010</sub>)

Phase II	Unit cost	Quantity	Total
Bangula canal			114 341
Pipes (optimized)	3 000	18 000	54 000
Illovo tertiary and on-field works and equipment for existing areas (costs for connection to SVIP)	1 872	3 688	6 904
Illovo tertiary and on-field works and equipment for expansion areas	6 800	6 981	47 468
Outgrowers (on Illovo expansion) tertiary and on-field works and equipment	6 800	776	5 274
Other outgrowers areas tertiary and on-field works and equipment	6 800	2 000	13 600
Commercial crops areas tertiary and on-field works and equipment	6 800	3 600	24 480
Tertiary and on-field works and equipment for irrigated food crops	6 800	956	6 501
<b>Total Phase II</b>			<b>272 568</b>

Table 3-26: Estimated total CAPEX of the SVIP (in thousands USD<sub>2010</sub>)

Item per Phase	Estimate (in Thousands USD)	%
<b>Phase I</b>		
Intake	5 213	1.0%
Feeder canal	63 022	12.3%
Pipelines	69 900	13.6%
Tertiary and on-field works and equipment	103 078	20.1%
<i>Sub-total Phase I</i>	<i>241 212</i>	<i>46.9%</i>
<b>Phase II</b>		
Bangula canal	114 341	22.3%
Pipelines	54 000	10.5%
Tertiary and on-field works and equipment	104 227	20.3%
<i>Sub-total Phase II</i>	<i>272 568</i>	<i>53.1%</i>
<b>TOTAL (in M. USD)</b>	<b>513 780</b>	<b>100.0%</b>

The total CAPEX of the SVIP estimate is 514 M. USD<sub>2010</sub> including:

- ▶ Phase I with 46.9%, Phase II with 53.1%
- ▶ Secondary network (pipelines): 13.6% (Phase I) + 10.5% (Phase II) of total CAPEX. A discussion will be done to assess the possibility of beneficiaries contribution to this investment.
- ▶ Tertiary and on-field investments: more than 40%. Part of this capital costs will be covered directly by the beneficiaries (Illovo and agro-business companies, for instance).

An assessment of the assets needed for operation and maintenance had been done in Annex 4. The results are an estimate of O&M assets around 775,000 USD<sub>2010</sub>, to be renewed every 10 years.

Consequently, the total CAPEX estimate reaches 516 M. USD<sub>2010</sub> in constant prices, and 565 M. USD in current prices after application of international price index.

CAPEX profile is represented in the graph hereafter: it conveys the investment peaks in 2013-2015.

Figure 3-9: Estimated CAPEX profile of the SVIP (in current prices)

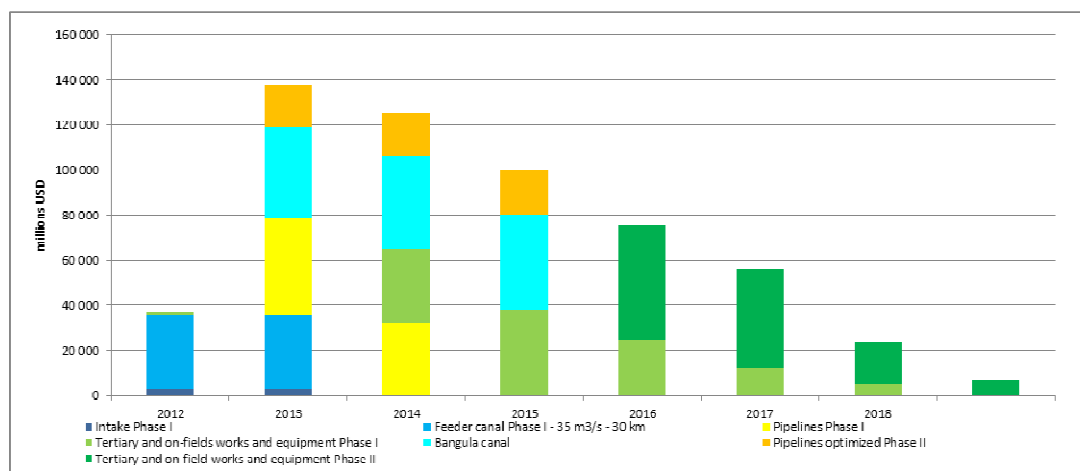


Table 3-27: Estimated CAPEX (in current prices)

	Total	2012	2013	2014	2015	2016	2017	2018	2019
<b>PHASE I</b>									
Intake Phase I	5,477	2,712	2,766	0	0	0	0	0	0
Feeder canal Phase I - 35 m3/s - 30 km	66,223	32,784	33,440	0	0	0	0	0	0
Pipe 1 - 7 700 ha pivot, (optimized)	24,514	0	24,514	0	0	0	0	0	0
Pipe 2 - 5 600 ha, (optimized)	17,828	0	17,828	0	0	0	0	0	0
Pipe 3 - 5 600 ha, (optimized)	18,185	0	0	18,185	0	0	0	0	0
Pipe 4 - 4 400 ha, (optimized)	14,288	0	0	14,288	0	0	0	0	0
Illovo on-field equipment for existing areas (costs for connection to SVIP)	21,507	0	0	7,691	13,815	0	0	0	0
Illovo tertiary and on-field works and equipment for expansion areas	8,413	0	0	3,573	3,754	1,087	0	0	0
KCG tertiary and on-field works and equipment for existing areas	1,471	1,471	0	0	0	0	0	0	0
KCG tertiary and on-field works and equipment, for expansion areas	22,096	0	0	6,624	3,754	3,829	3,906	3,984	0
Outgrowers (on Illovo expansion) tertiary and on-field works and equipment	930	0	0	397	533	0	0	0	0
Other outgrowers areas tertiary and on-field works and equipment	30,108	0	0	7,361	12,012	9,172	1,562	0	0
Commercial crops areas tertiary and on-field works and equipment	18,459	0	0	1,840	1,877	6,509	6,639	1,593	0
Tertiary and on-field works and equipment, for irrigated food crops	11,362	0	0	4,830	2,270	4,105	156	0	0
<b>TOTAL Phase I</b>	<b>260,861</b>	<b>36,966</b>	<b>78,548</b>	<b>64,789</b>	<b>38,016</b>	<b>24,702</b>	<b>12,263</b>	<b>5,577</b>	<b>0</b>
<b>PHASE II</b>									
Bangula canal	123,783	0	40,447	41,256	42,081	0	0	0	0
Pipelines optimized Phase II	58,459	0	19,102	19,484	19,873	0	0	0	0
Illovo tertiary and on-field works and equipment, for existing areas (costs for connection to SVIP)	7,775	0	0	0	0	7,775	0	0	0
Illovo tertiary and on-field works and equipment, for expansion areas	54,219	0	0	0	0	22,974	23,433	7,812	0
Outgrowers (on Illovo expansion) tertiary and on-field	6,114	0	0	0	0	1,532	1,562	1,593	1,427

	Total	2012	2013	2014	2015	2016	2017	2018	2019
works and equipment									
Other outgrowers areas tertiary and on-field works and equipment	15,469	0	0	0	0	7,658	7,811	0	0
Commercial crops areas tertiary and on-field works and equipment	28,312	0	0	0	0	7,658	7,811	7,967	4,876
Tertiary and on-field works and equipment, for irrigated food crops	7,430	0	0	0	0	3,446	2,789	797	398
<b>TOTAL Phase II</b>	<b>301,562</b>	<b>0</b>	<b>59,548</b>	<b>60,739</b>	<b>61,954</b>	<b>51,042</b>	<b>43,406</b>	<b>18,170</b>	<b>6,702</b>
<b>O&amp;M ASSETS FOR THE PRIVATE OPERATOR excluding renewal</b>									
Vehicles (4*4)	1,947	260	265	0	0	0	0	0	0
Computer / softwares	187	25	25	0	0	0	0	0	0
Offices equipment	175	23	24	0	0	0	0	0	0
Workers and waterman equipment	0	0	0	0	0	0	0	0	0
Full equipment workshop	195	26	27	0	0	0	0	0	0
Contingencies (15%)	375	50	51	0	0	0	0	0	0
<b>TOTAL O&amp;M Assets</b>	<b>2,879</b>	<b>385</b>	<b>392</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL</b>	<b>565,302</b>	<b>37,351</b>	<b>138,488</b>	<b>125,529</b>	<b>99,970</b>	<b>75,744</b>	<b>55,669</b>	<b>23,747</b>	<b>6,702</b>

It is considered that the PPP contract doesn't include tertiary infrastructures and on-field works and equipment (will be financed by the beneficiaries, either directly like Illovo Group of agribusiness companies, either by other public and / or international funding).

Consequently, the PPP contract investments reach 306 M. USD<sub>2010</sub> in constant prices and 332 M. USD in current prices.

Table 3-28: Estimated CAPEX in, PPP contract (in constant and current prices)

	Th USD (current prices)	Th USD 2010 (constant prices)	Life duration of assets
<b>PHASE I</b>			
Intake Phase I	5,477	5,213	100 years
Feeder canal Phase I - 35 m <sup>3</sup> /s - 30 km	66,223	63,022	75 years
Pipe 1 - 7 700 ha pivot, (optimized)	24,514	23,100	75 years
Pipe 2 - 5 600 ha, (optimized)	17,828	16,800	75 years
Pipe 3 - 5 600 ha, (optimized)	18,185	16,800	75 years
Pipe 4 - 4 400 ha, (optimized)	14,288	13,200	75 years
<b>Subtotal</b>	<b>146,516</b>	<b>138,134</b>	75 years
<b>PHASE II</b>			
Bangula canal	123,783	114,341	100 years
Pipelines optimized Phase II	58,459	54,000	75 years
<b>Subtotal</b>	<b>182,242</b>	<b>168,341</b>	
<b>O&amp;M ASSETS FOR THE PRIVATE OPERATOR including renewal</b>			
Vehicles (4*4)	1,947	1,500	10 years
Computer / softwares	187	144	10 years
Offices equipment	175	135	10 years
Workers and waterman equipment	0	0	10 years
Full equipment workshop	195	150	10 years
Contingencies (15%)	375	289	10 years
<b>Subtotal</b>	<b>2,879</b>	<b>2,218</b>	10 years
<b>TOTAL</b>	<b>331,637</b>	<b>308,694</b>	10 years



Life duration of assets, between 100 and 75 years, exceeds duration of the PPP contract. Consequently, SVIP investments of Phase I and Phase II won't be renewed during the PPP contract.

However, a renewal fund could be constituted from now to finance future renewal by including a fee of 5 USD / 1,000 m<sup>3</sup> into the tariff paid by final users, during the implementation of the contract (30 years) and collected on behalf of the Contracting Authority. The fund would raise 110.6 M. USD<sub>2010</sub>, which corresponds to 33% of investment costs needs for the next cycle of around 100 years.

In the following simulations, this fee isn't included into the tariff to final users.

#### 3.4.2.1.4 Volume of water distributed by the private operator

The main hypothesis for the estimate of volume of distributed water are the following:

##### HYPOTHESIS FOR EFFICIENCY

These assumptions came from Coyne & Bellier study except for the distribution efficiency. For this efficiency, Coyne & Bellier proposed 99% while the consultant used 95%.

Efficiency	
Conveyance (lined canal)	94%
Distribution (piped system)	95%
Irrigation application	
Furrow	65%
Dragline sprinkler	70%
Pivot	80%

Source: 2010 Review of feasibility study

##### WATER DEMAND FOR DIFFERENT ON-FIELD IRRIGATION TECHNIQUES

Sources are Coyne and Bellier for sugar cane and Coda study for the other crops.

Water demand at pipe outlet for sugar cane		
Furrow	23 138	m <sup>3</sup> /ha/year
Sprinkler	21 486	m <sup>3</sup> /ha/year
Pivot	18 800	m <sup>3</sup> /ha/year
Mixed	21 889	m <sup>3</sup> /ha/year

Source: 2010 Review of feasibility study

Water demand at pipe outlet for other crops with furrow		
Maize	11 972	m <sup>3</sup> /ha/year
Cow peas	5 445	m <sup>3</sup> /ha/year
Sweet Potatoes	6 317	m <sup>3</sup> /ha/year
Sorghum	8 389	m <sup>3</sup> /ha/year
Cotton	11 780	m <sup>3</sup> /ha/year
Rice	10 872	m <sup>3</sup> /ha/year
<b>For double cropping</b>	<b>23 752</b>	<b>m<sup>3</sup>/ha/year</b>

Source: 2010 Review of feasibility study

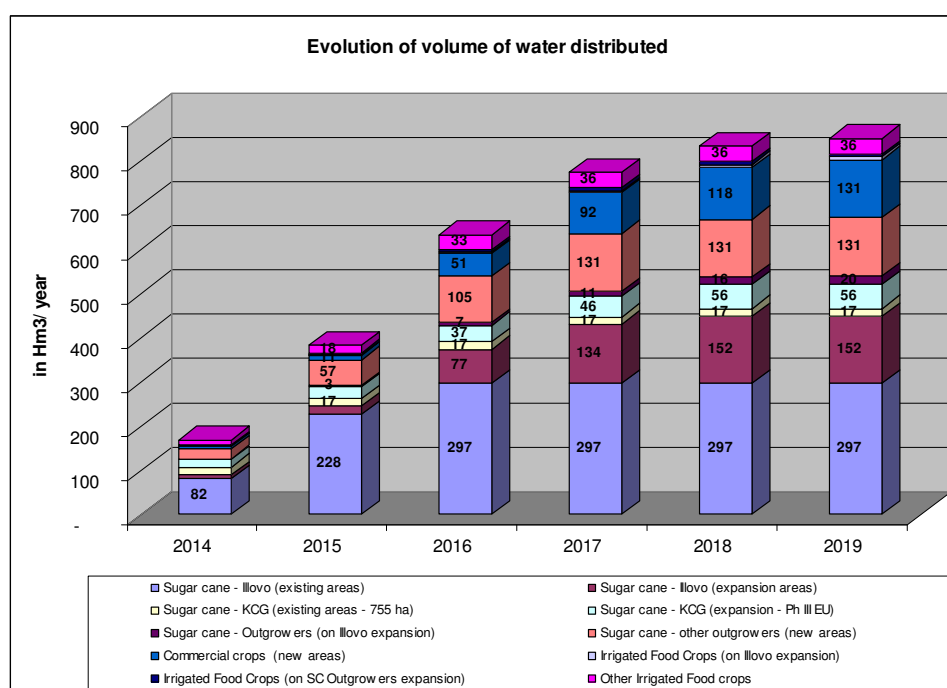
The equipped areas for irrigated food crops are considered to be double cropped with a water demand of 23,752 m<sup>3</sup>/ha/year. Commercial crops areas demand are considered with an average consumption of 21,889 m<sup>3</sup>/ha/year (like sugarcane with mixed system).

The volume of water distributed at farmers' s intake (volume invoiced by the operator) will increase during the first 8 years and reach, in 2019 and following years, 853 Hm<sup>3</sup> per year.

Table 3-29: Evolution of volume of water distributed on SVIP

	2012	2013	2014	2015	2016	2017	2018	2019
<b>Phase I and II</b>								
Sugar cane - Illovo (existing areas)	-	-	82	228	297	297	297	297
Sugar cane - Illovo (expansion areas)	-	-	9	18	77	134	152	152
Sugar cane - KCG (existing areas - 755 ha)	-	-	17	17	17	17	17	17
Sugar cane - KCG (expansion - Ph III EU)	-	-	18	28	37	46	56	56
Sugar cane - Outgrowers (on Illovo expansion)	-	-	1	3	7	11	16	20
Sugar cane - other outgrowers (new areas)	-	-	22	57	105	131	131	131
Commercial crops (new areas)	-	-	5	11	51	92	118	131
Irrigated Food Crops (on Illovo expansion)	-	-	1	2	3	4	6	6
Irrigated Food Crops (on SC Outgrowers expansion)	-	-	2	4	6	6	6	6
Other Irrigated Food crops	-	-	12	18	33	36	36	36
<b>TOTAL (in Hm<sup>3</sup>)</b>	-	-	<b>169</b>	<b>385</b>	<b>634</b>	<b>775</b>	<b>835</b>	<b>853</b>

Figure 3-10: Evolution of volume of water distributed with breakdown by main uses



### 3.4.2.1.5 Products, costs and cash flows

An assessment of the annual costs for O&M (staff, maintenance costs, etc.) has been done in Annex 4: we have estimated a staffing around 70 employees and total O&M costs (including staffing) reaching a total of 30 USD/ha/year which seems reasonable if compared with international experiences due to the consistency of hydraulic assets (low requirement of staff and maintenance due to the presence of pipelines and distribution to large water users like Illovo at outlet of pipeline).

Hypothesis and assumptions regarding products and other costs are presented in the table hereafter.

Figure 3-11: Hypothesis and assumptions

	Variables	Hypothesis and assumptions
Macroeconomy	International inflation	2% per year
	Exchange rate MK/USD	USD 1\$ = MK150\$
Contract	Duration	30 years
Investments	Schedule	Investments spread on 8 years (see above): - Phase I : 2012-2018 - Phase II : 2013-2019
	Renewal	Renewal of O&M assets every 10 years Life duration of other assets (between 75 years and 100 years) exceeds the duration of the contract 30 years
Operating expenses	Maintenance costs	See Annex 4 Increase with the progressive commissioning of assets and reach 306 476 USD <sub>2010</sub> per year (=,0 1% of total PPP contract, investment s) from 2020
	Staff	See Annex 4 10 285 USD <sub>2010</sub> /employee/year (average for all positions) 35 employees in 2014, 52 employees in 2015 and, around 70 employees from 2016 Wages are indexed to inflation
	Operating costs	See Annex 4 50%, x, 232 500 USD <sub>2010</sub> in 2014 100%, x, 232 500 USD <sub>2010</sub> from, 2015
	Water rights fee from Shire River	35 100 USD / year increasing by 5% per year : average of 0.1 USD/1,000m <sup>3</sup> Collected by the operator
	Insurances	0 25% of assets (gross value)
	Financial interests	Interests on long-term loans, depending on financial arrangements (see above for concession and affermage scenario) Interests on bank overdrafts, = 6.5%
	Bad debts	Decrease gradually from 20% of revenue sales in 2014, to 5% in 2020 Stable at 5% from 2020
	Depreciation of assets	Obsolescence depreciation is applied on the whole investments financed by the private operator Depreciation don't take into account tax impact of no-revaluation of assets
Revenues	Water sales	Volume of water distributed x tariff
	Tariff for private operator	Average of costs / volume of water distributed In constant USD / m <sup>3</sup> (evolution with tariff index)
	Financial revenues	Excess cash paid at 3 %
Taxation	Company tax	Company tax of 30% imposed on income
	Value added tax	VAT Exemption on tariff to final users
Cash flow statement	Dividends	Dividends are distributed as a % of earned net income, only if, retained earnings, net income and cumulative cash-flows are positive.
	Current liabilities / Trade payables	3 months of operating expenses
	Current assets / Client receivables	2 months of sales

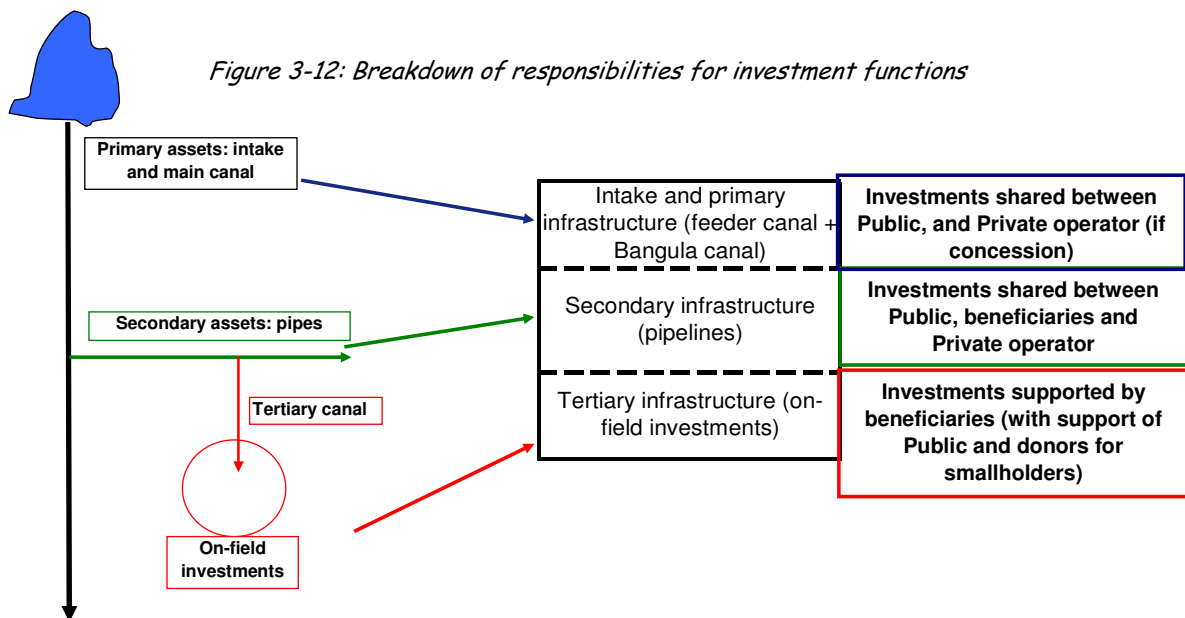
### 3.4.2.1.6 Financing of SVIP investments

Financial arrangements and sharing of investments costs between the different stakeholders within the project are a critical issue. Three sources of funds can be mobilized: State subsidies, private partner funds (loans and equity) in the case of a concession, and beneficiaries.

Considering investments included in the PPP contract (Intake, primary and secondary infrastructures (331,637 Th. USD):

- ▶ Beneficiaries contribution to the secondary infrastructures will be determined by their capacity to pay (see chapter below);
- ▶ The remaining costs of investments will be financed by Public subsidies, and, in the case of a concession, by the private operator who will pass on these costs on the tariff paid by final users. The sharing of investments costs will impact the tariff fees paid by final users.

The following figure and table propose a breakdown of responsibilities for financing the initial capital costs of SVIP.



Project Stakeholders  Type of investment	Public	Private partners				Smallholders farmers	
		Agribusiness Companies		Private operator in charge of irrigation & drainage services		Kasinthula Cane Growers Irrigation	Others
		Illovo Sugar Estate	Other companies	Concession or BOT systems	Other PPP transaction model		
Intake and primary infrastructure (feeder canal + Bangula canal)	X (100-P1)%	- 0%	- 0%	X P1 %	- 0%	- 0%	- 0%
Secondary infrastructure (pipelines)	X (100-I2-O2-P2--K2-S2)%	X I2%	X O2%	X P2 %	- 0%	X K2%	X S2%
Tertiary infrastructure (on-field investments)	X (100-S3)%	X 100%	X 100%	- 0%	- 0%	X 100%	X S3%

**Legend / remarks :**

X	means the stakeholder participates to the considered investment
-	means the stakeholder does not participate to the considered investment
I2%	contribution to the capital costs as a water user (beneficiary of the project)
O2%	may be initially supported by the public if no other agribusiness companies are part of the Project
P1 and P2%	contribution to the capital costs of the private partner (as a concessionary)
K2%	contribution to the capital costs as a water user (beneficiary of the project)
S2 and S3%	will be initially supported by the public and may be repaid on credit form by the smallholders

The following paragraphs will aim to determine the figures especially:

- ▶ Illovo capacity for contribution (I2%)
- ▶ Other beneficiaries like KCG and other agribusiness companies (K2% and O2%)
- ▶ And then P1% and P2% in the case of a concession (when the private partner will be required to participate to the capital costs).

### 3.4.3 Capacity for Illovo to contribute to capital costs and willingness to pay for SVIP irrigation fees

#### OBJECTIVES OF CALCULATION

The objective of this chapter is to assess Illovo's willingness to contribute to the capital costs for secondary distribution (Pipes 2, 3 and 4) as a beneficiary of the project (not as the private partner of the PPP: the aim is to determine "12%" figure in the previous table.

#### MAIN HYPOTHESIS AND ASSUMPTIONS

Table 3-30: Main hypothesis for the calculation of Illovo's capacity to contribute to the capital costs for secondary distribution (pipelines)

Main hypothesis for current situation (without project):			
Current consumption of energy in present situation	6 067 KWh/ha	or	85 954 829 KWh/year
Current cost of energy in present situation	45 105 MK/ha	or	301 USD/ha
Other operation costs for pumping station	7 085 MK/ha	or	47 USD/ha
Maintenance costs for pumping stations	14 603 MK/ha	or	97 USD/ha
Increase of ESKOM price of energy in coming years	60%		
			<b>Total O&amp;M costs in current situation:</b> 445 USD/ha 66 793 MK/ha
Main hypothesis for future situation (with SVIP):			
	Total areas for pipes 2,3, 4	10 668 ha	including ## ha of expansion connected to SVIP
Investments for distribution and on-field :			
Ring main to current pump stations	10 668 MK/ha	or	1 872 USD/ha
Other operation costs	3 542 MK/ha	or	24 USD/ha
Maintenance costs	6 723 MK/ha	or	45 USD/ha
			<b>Total O&amp;M costs with SVIP - High Level Canal Option:</b> 68 USD/ha 10 266 MK/ha

The calculation consists in comparing additional costs (investment costs including their financing) and costs savings resulting from SVIP project on existing areas with costs without SVIP project.

The current O&M costs are totalizing 445 USD<sub>2010</sub>/ha/year with 300 USD<sub>2010</sub> of electricity for pumping and pressurized irrigation system. It is considered that electricity will increase by 60% by 2014 up to 480 USD<sub>2010</sub>. With this assumption, O&M costs would reach 625 USD<sub>2010</sub>/ha/year.

To be connected to the pipelines from SVIP, Illovo will have to invest in ring main to current pumping stations which represent a capital costs around 1,872 USD<sub>2010</sub>/ha. The calculation is done for Illovo area in SVIP Phase I existing areas (on the command areas of pipelines 2 3 and 4, Pipeline 1 is not considered): 10,026 ha.

The O&M costs with SVIP will be reduced to 68 USD<sub>2010</sub>/ha/year, excluding the SVIP irrigation fees.

The calculation will consist in estimating the contribution of the capital costs for different hypothesis of SVIP irrigation fees (paid to the private partner for O&M services) and for different financial Internal Rate of Return on equity invested.

The hypothesis for financing these investments are 40% from equity and the remaining from a commercial loan with 8% interest rate, a period of 20 years and a grace period of 3 years.

## RESULTS AND DISCUSSION

The total capital costs for the secondary distribution is considered to be the pipelines n°2, n°3 and n°4 considered in the Design Study Review, but with an optimization of the design which permits an average cost of 3,000 USD/ha for pipelines capital costs (instead of 6,000 USD/ha in average as shown in this study). This optimization will be allowed by the reduction of length of these pipelines. In that study, pipelines n°2 and n°3 had 17 km, and pipeline n°4 a little less than 27 km. These distances were justified in that study by the fact that only Phase I was considered, the pipelines started at chainage 30 km. If both SVIP Phases are considered, the pipelines will be connected downstream on Bangula canal and will be shorter (as shown on map 3).

*Table 3-31: Estimate of Illovo capacity to contribute to pipelines capital costs  
(in Th USD, depending on irrigation fee and IRR expected)*

		SVIP Irrigation fee (USD/1,000 m <sup>3</sup> )				
		20 USD/ 1,000 m <sup>3</sup>	18 USD/ 1,000 m <sup>3</sup>	15 USD/ 1,000 m <sup>3</sup>	12 USD/ 1,000 m <sup>3</sup>	10 USD/ 1,000 m <sup>3</sup>
IRR	12%	5,030 Th. USD	9,054 Th. USD	15,090 Th. USD	21,127 Th. USD	25,151 Th. USD
	15%	2,012 Th. USD	5,533 Th. USD	11,066 Th. USD	16,096 Th. USD	19,617 Th. USD
	18%	0	3,018 Th. USD	8,048 Th. USD	12,575 Th. USD	15,593 Th. USD
	20%	0	1,660 Th. USD	6,539 Th. USD	10,563 Th. USD	13,581 Th. USD

*Table 3-32: Estimate of Illovo capacity to contribute to pipelines capital costs, (% of contribution to pipelines investment costs, depending on irrigation fee and IRR expected)*

		SVIP Irrigation fee (USD/1,000 m <sup>3</sup> )				
		20 USD/ 1,000 m <sup>3</sup>	18 USD/ 1,000 m <sup>3</sup>	15 USD/ 1,000 m <sup>3</sup>	12 USD/ 1,000 m <sup>3</sup>	10 USD/ 1,000 m <sup>3</sup>
<b>IRR</b>	12%	10%	18%	30%	42%	50%
	15%	4%	11%	18%	32%	39%
	18%	0%	6%	16%	25%	31%
	20%	0%	3%	13%	21%	27%

Total capital costs (pipelines n°2, n° 3 and n°4):	<b>Th of USD 50,301</b>
--	-------------------------

Illovo capacity (and interest) to contribute to the CAPEX of secondary assets (pipelines) will vary from:

- ▶ 0% if SVIP irrigation fees is over 18 USD/ 1,000 m<sup>3</sup> and IRR expected is 18% or 20%
- ▶ To a maximum of 50% with an IRR of 12% if irrigation fees is 10 USD / 1,000 m<sup>3</sup>.

### 3.4.4 Estimate of irrigation fees according to PPP transaction model

The following paragraphs will present possible irrigation tariffs according to PPP transaction, and the needed contribution of stakeholders attached to these tariffs for the selected scenarios 2 and 4

Potential Functions under responsibility of private operator	Options for PPP transaction	
	2- Concession on Irrigation services	4- Lease / Affermage contract
<b>A. Irrigation services</b>		
<b>1. Final design and construction</b>		
Final Design and preparation of bidding documents for construction	Private	Public or Private (in another contract)
Construction	Private	Private (in another contract)
<b>2. Supervision of construction</b>		
	Private	Private (in another contract)
<b>3. Financing of capital costs</b>		
	Private / Public / Beneficiaries	Public / Beneficiaries
<b>4. Operation and maintenance of Irrigation and Drainage assets</b>		
Transfer of main infrastructures after completion of construction	Private	Private (in another contract)
Operation & Maintenance	Private	Private
Renewal (and / or renewal fund to contribute)	Private / Public	Public
<b>B. Supporting services for agricultural production (non-irrigation services) for smallholders and outgrowers</b>		
Irrigable areas development	Public or Private (in another contract)	Public or Private (in another contract)
Support to inputs supply		
Extension services		
Support to processing & marketing		
<b>Comments</b>	Similar to Moroccan and Egyptian initiatives	-



### 3.4.4.1 Irrigation fee for a concession contract (scenario 2)

#### OBJECTIVES OF CALCULATION

This chapter presents estimate of irrigation fees for the final users (farmers) if the PPP contract is a concession with a required contribution of the private partner in initial capital costs.

Several calculation enable to evaluate the tariff obtained with different level of contribution to the capital costs, under several constraints as capacity for contribution of certain beneficiaries (Illovo, KCG and agribusiness companies), capacity to pay tariffs by all final users, expected return on equity invested by the private partner.

#### SPECIFIC HYPOTHESIS AND ASSUMPTIONS FOR THIS CALCULATION

##### Investments costs in the scope of the contract

Investments costs to be shared between the private partner, Public party and beneficiaries (Illovo, Kasinthula and agribusiness companies) are those of the PPP contract: intake, primary infrastructure and secondary infrastructure, 332 M. USD (or 306 M. USD<sub>2010</sub>). In all scenarios, the O&M assets are financed by the private partner.

##### Financial arrangements for private partner

It is considered that the private partner will finance the investments costs by combining :

- ▶ Equity (20%) with an expected IRR at 20% ;
- ▶ Commercial loan (45%), with 8% of interest, a maturity of 15 years and no grace period ;
- ▶ Concessionary loan (35%), with 2% of interest, a maturity of 30 years and a grace period of 5 years.

##### Beneficiaries contributions

As it has been explained above, beneficiaries contribution is expected to be on secondary infrastructure (pipelines) investments, it consists of:

- ▶ Illovo contribution for Pipes 2, 3 and 4 (Phase I) expressed as a percentage of costs investments: evaluated on existing areas, considering additional investment costs to be financed (under the constraint of an expected return on equity invested of 15%) and O&M cost savings resulting from SVIP (see above).
- ▶ Kasinthula and agribusiness companies contribution for Pipes 2, 3 and 4 (Phase I) and Illovo, Kasinthula and agribusiness companies contribution for other pipes (Pipe 1 Phase I and Other Pipes Phase II): equal to the % of Illovo contribution for Pipes 2, 3, 4 and maximum to 10%. These are average numbers and some variations may be introduced between different type of users.

##### Public contributions:

The remaining costs of investments will be financed by Public subsidies.

### Irrigation fees:

The tariff applied to final users corresponds to the tariff for the private partner added to water rights fee from Shire river (0.11 USD/1,000m<sup>3</sup>):

- ▶ Final users benefit from VAT exemption on irrigation fee ;
- ▶ Renewal fund contribution, evaluate at around 5 USD/1,000m<sup>3</sup>, is not included in the tariff to final users.

## **RESULTS**

The graph and the table hereafter present results of calculation with several combination of irrigation fees and percentage of contribution for each contributor.

We can see that while the tariff decreases :

- ▶ Private partner contribution decreases,
- ▶ Beneficiaries contributions become possible and enable State contribution to be less important. However, when the maximum contribution of 10% applied to certain beneficiaries is reached (from a tariff at 18 USD/1,000m<sup>3</sup>), the State contribution has to increase again in order to get a lower tariff.,

Figure 3-13: Combination of irrigation fees and % of contribution for each contributor

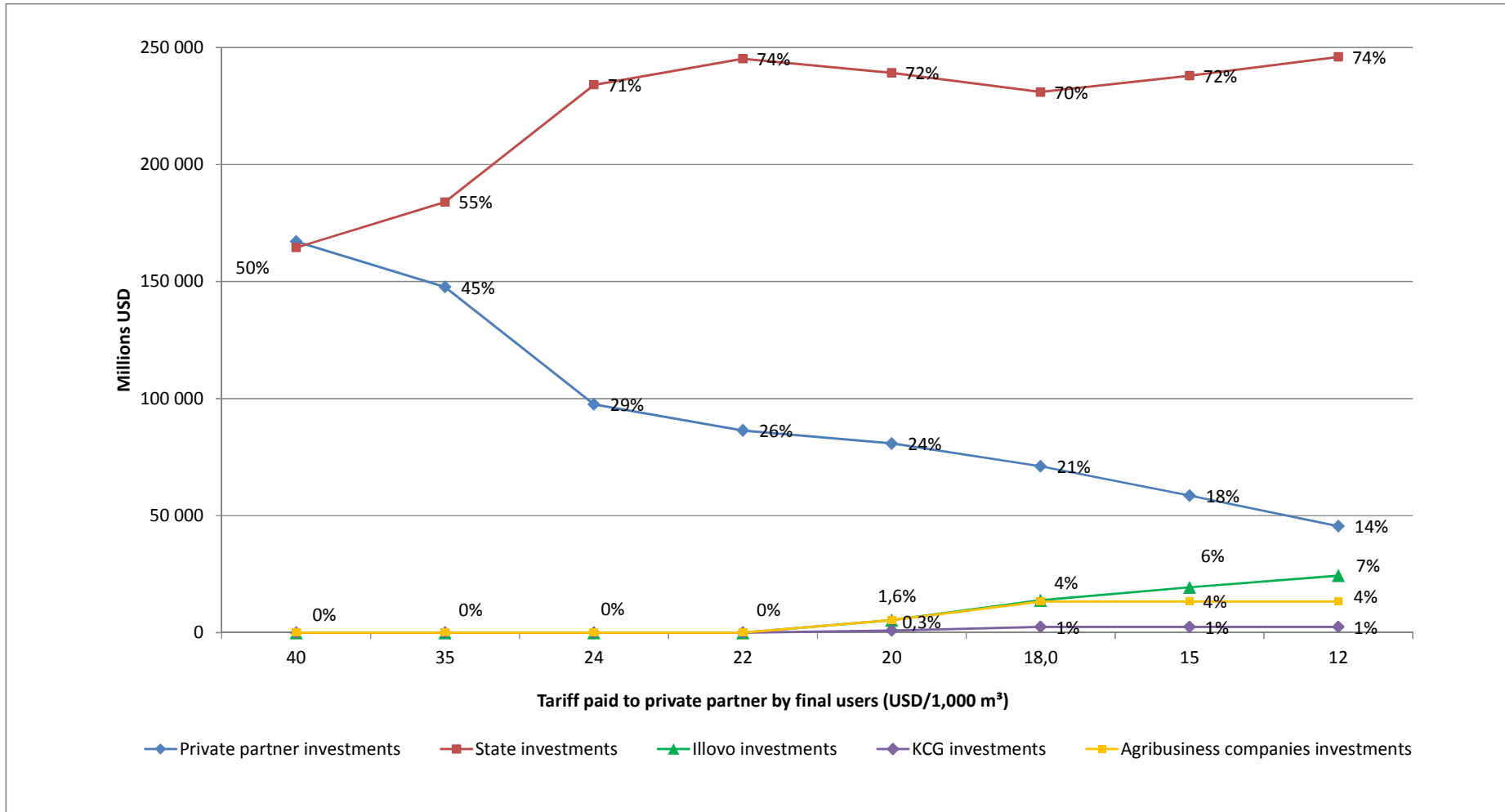


Table 3-33: Combination of irrigation fees and contribution for each contributor in Th. USD  
(in current prices)

Tariff pay by final users to private partners	USD/1,000m <sup>3</sup>	40	35	24	22	20	18	15	12
Private partner investments	Th USD	167,168	147,676	97,554	86,416	80,847	71,101	58,570	45,483
	% of invest.	50%	45%	29%	26%	24%	21%	18%	14%
State investments	Th USD	164,468	183,960	234,083	245,221	239,147	230,927	237,924	245,981
	% of invest.	50%	55%	71%	74%	72%	70%	72%	74%
Illovo investments Including Pipes 2, 3, 4	Th USD	0	0	0	0	5 331	13 830	19 364	24 394
	% of invest.	0%	0%	0%	0%	1 6%	4%	6%	7%
	Th USD	0	0	0	0	2,012	5,533	11,066	16,096
	% of invest.	0%	0%	0%	0%	4%	11%	22%	32%
KCG investments	Th USD	0	0	0	0	981	2,451	2,451	2,451
	% of invest.	0%	0%	0%	0%	0 3%	1%	1%	1%
Agribusiness companies investments	Th USD	0	0	0	0	5,331	13,327	13,327	13,327
	% of invest.	0%	0%	0%	0%	1 6%	4%	4%	4%
Financial IRR for private partner investors	%	20%	20%	20%	20%	20%	20%	20%	20%
Payback period	years	9 yrs	9 yrs	9 yrs	9 yrs	9 yrs	9 yrs	9 yrs	9 yrs
Project Financial before public subsidies	%	2%	1%	-2%	-3%	-3%	-4%	-5%	-7%
Project Financial after public subsidies	%	13%	13%	13%	13%	13%	13%	13%	13%
Impact on State budget (investment subsidies and fiscal impact)	NPV@5% USD/1,000m <sup>3</sup>	7.5	9.8	15.4	16.6	16.4	16.1	17.0	18.1

All scenarios respect financial constraints of private partner, with an IRR of 20%.

With a tariff from 12 USD/1,000 m<sup>3</sup> to 40 USD/1,000m<sup>3</sup>, the private partner contributes from 14% to 50% of investment costs, and public subsidies from 74% to 50% of investment costs. A lower tariff means a higher contribution from the State : with a tariff at 40 USD/1,000m<sup>3</sup>, the net subsidy (investment costs - fiscal impact) amounts 7.5 USD/1,000m<sup>3</sup> compared with 18.1 USD/1,000m<sup>3</sup> when tariff is fixed at 12 USD/1,000m<sup>3</sup>.

With a tariff higher than 20 USD/1,000m<sup>3</sup> beneficiaries cannot contribute to investment costs:

- ▶ With a tariff of 40 USD/1,000 m<sup>3</sup>, Public subsidies support 50% of the investment costs, the private partner 50%, beneficiaries can't contribute ;
- ▶ With a tariff of 24 USD/1,000 m<sup>3</sup>, Public subsidies support 71% of the investment costs, the private partner 29%, beneficiaries can't contribute ;
- ▶ With a tariff of 18 USD/1,000 m<sup>3</sup>, Public subsidies support 70% of the investment costs, the private partner 21%, Illovo and agribusiness companies 4% and KCG 1% ;

The scenario with 18 USD for each 1,000 m<sup>3</sup> (or 1 8 cUSD/m<sup>3</sup>) will be considered as the base case with a reasonable share for the private partner (21%) and a still affordable irrigation fee for the farmers. The following table shows the weight of SVIP irrigation fee in total cost production for different diversified crops based on commercial and intensive management. SVIP irrigation fees will represent from 4.7% to 14.3% (sugar cane) of total costs production with this tariff of 18 USD/ 1,000 m<sup>3</sup> (see details on Annex 4). It is important to note that yield and inputs utilization are high in the crop budgets like it has to be for an intensive production under irrigation. Yield considered are computed in the table and is, for example, 10 T/ha for maize.

Table 3-34: Impact on SVIP irrigation fee on profitability for diversified crops

<b>Maize</b> For 1 ha						<b>Rice</b> For 1 ha						<b>Cotton</b> For 1 ha					
7 782 m <sup>3</sup> /ha						7 067 m <sup>3</sup> /ha						7 657 m <sup>3</sup> /ha					
Irrigation SVIP fees (USD/m <sup>3</sup> )	0.01	0.012	0.015	0.018	0.02	Irrigation SVIP fees (USD/m <sup>3</sup> )	0.01	0.012	0.015	0.018	0.02	Irrigation SVIP fees (USD/m <sup>3</sup> )	0.01	0.012	0.015	0.018	0.02
Selling Price (MK/bag)	1 700	1 700	1 700	1 700	1 700	Selling Price (MK/bag)	5 000	5 000	5 000	5 000	5 000	Selling Price (MK/Kg)	100	100	100	100	100
Yield in Bags (50 kgs) per ha	200	200	200	200	200	Yield in Bags (50 kgs) per ha	80	80	80	80	80	Yield in kg per ha	3 125	3 125	3 125	3 125	3 125
Sales Value (MK/ha)	340 000	340 000	340 000	340 000	340 000	Sales Value (MK/ha)	400 000	400 000	400 000	400 000	400 000	Sales Value (MK/ha)	312 500	312 500	312 500	312 500	312 500
Total Cost (except irrigation fee) in MK/ha	258 290	258 290	258 290	258 290	258 290	Total Cost (except irrigation fee) in MK/ha	233 284	233 284	233 284	233 284	233 284	Total Cost (except irrigation fee) in MK/ha	245 659	245 659	245 659	245 659	245 659
SVIP Irrigation Fee (MK/ha)	11 673	14 008	17 510	21 012	23 346	SVIP Irrigation Fee (MK/ha)	10 600	12 720	15 900	19 080	21 200	SVIP Irrigation Fee (MK/ha)	11 485	13 782	17 228	20 673	22 970
SVIP Irrigation Fee (USD/ha)	77.8	93.4	116.7	140.1	155.6	SVIP Irrigation Fee (USD/ha)	70.7	84.8	106.0	127.2	141.3	SVIP Irrigation Fee (USD/ha)	76.6	91.9	114.9	137.8	153.1
Profit Margin with irrigation fee (MK/ha)	70 037	67 702	64 200	60 698	58 364	Profit Margin with irrigation fee (MK/ha)	156 116	153 996	150 816	147 636	145 516	Profit Margin with irrigation fee (MK/ha)	55 355	53 058	49 613	46 167	43 870
Profit Margin with irrigation fee (USD/ha)	467	451	428	405	389	Profit Margin with irrigation fee (USD/ha)	1 041	1 027	1 005	984	970	Profit Margin with irrigation fee (USD/ha)	369	354	331	308	292
Breakeven price (MK/bag)	1 350	1 361	1 379	1 397	1 408	Breakeven price (MK/bag)	3 049	3 075	3 115	3 155	3 181	Breakeven price (MK/Kg)	82	83	84	85	86
% of SVIP fee in total cost production	4.3%	5.1%	6.3%	7.5%	8.3%	% of SVIP fee in total cost production	4.3%	5.2%	6.4%	7.6%	8.3%	% of SVIP fee in total cost production	4.5%	5.3%	6.6%	7.8%	8.6%

<b>Sugar cane</b> For 1 ha 18 800 m3/ha						<b>Pigeon pea</b> For 1 ha 3 539 m3/ha						<b>Sorghum</b> For 1 ha 5 453 m3/ha					
<b>Irrigation SVIP fees (USD/m3)</b>	0.01	0.012	0.015	0.018	0.02	<b>Irrigation SVIP fees (USD/m3)</b>	0.01	0.012	0.015	0.018	0.02	<b>Irrigation SVIP fees (USD/m3)</b>	0.01	0.012	0.015	0.018	0.02
ERS Sugar Deliveries (tn.sugar)	14	14	14	14	14	Selling Price (MK/bag)	3 750	3 750	3 750	3 750	3 750	Selling Price (MK/bag)	3 000	3 000	3 000	3 000	3 000
ERS Sugar Price (MK / tn.sug.)	53 000	53 000	53 000	53 000	53 000	Yield in Bags (50 kgs) per ha	68	68	68	68	68	Yield in Bags (50 kgs) per ha	80	80	80	80	80
Sales Value (MK/ha)	727 177	727 177	727 177	727 177	727 177	Sales Value (MK/ha)	253 125	253 125	253 125	253 125	253 125	Sales Value (MK/ha)	240 000	240 000	240 000	240 000	240 000
Total Cost (except irrigation fee) in MK/ha	303 615	303 615	303 615	303 615	303 615	Total Cost (except irrigation fee) in MK/ha	192 034	192 034	192 034	192 034	192 034	Total Cost (except irrigation fee) in MK/ha	177 059	177 059	177 059	177 059	177 059
SVIP Irrigation Fee (MK/ha)	28 200	33 840	42 300	50 760	56 400	SVIP Irrigation Fee (MK/ha)	5 308	6 370	7 963	9 555	10 617	SVIP Irrigation Fee (MK/ha)	8 179	9 815	12 269	14 722	16 358
SVIP Irrigation Fee (USD/ha)	188.0	225.6	282.0	338.4	376.0	SVIP Irrigation Fee (USD/ha)	35.4	42.5	53.1	63.7	70.8	SVIP Irrigation Fee (USD/ha)	54.5	65.4	81.8	98.1	109.1
Profit Margin with irrigation fee (MK/ha)	395 361	389 721	381 261	372 801	367 161	Profit Margin with irrigation fee (MK/ha)	55 782	54 721	53 128	51 535	50 474	Profit Margin with irrigation fee (MK/ha)	54 762	53 126	50 672	48 218	46 583
Profit Margin with irrigation fee (USD/ha)	2 636	2 598	2 542	2 485	2 448	Profit Margin with irrigation fee (USD/ha)	372	365	354	344	336	Profit Margin with irrigation fee (USD/ha)	365	354	338	321	311
Breakeven price (MK/bag)	6.3	6.4	6.5	6.7	6.8	Breakeven price (MK/bag)	2 924	2 939	2 963	2 987	3 002	Breakeven price (MK/bag)	2 315	2 336	2 367	2 397	2 418
% of SVIP fee in total cost production	8.5%	10.0%	12.2%	14.3%	15.7%	% of SVIP fee in total cost production	2.7%	3.2%	4.0%	4.7%	5.2%	% of SVIP fee in total cost production	4.4%	5.3%	6.5%	7.7%	8.5%

## SENSITIVITY ANALYSIS

The robustness of the base case scenario (tariff 18 USD/1,000 m<sup>3</sup>) is tested through sensitivity analysis. This analysis consists in observing the variation of private and public contribution needed to maintain the tariff target.

Three sensitivity analyses are carried out:

- ▶ CAPEX (capital expenditures) 30% higher than expected;
- ▶ CAPEX 30% lower than expected ;
- ▶ IRR investor at a level of 15% rather than 20%.

Sensitivity analysis shows that, to maintain a tariff of 18 USD/m<sup>3</sup> :

- ▶ in the case of higher capital costs, the public contribution will have to be raised from 70% to 74%
- ▶ in the case of lower capital costs the public contribution could be reduced from 70% to 62%
- ▶ a lower IRR expected by the investor leads to a higher participation from the private operator, and the public contribution could be reduced from 70% to 64%.

*Table 3-35: Sensitivity analysis*

Scenario		Base case scenario	SVIP CAPEX +30%	SVIP CAPEX -30%	IRR 15%
<b>Tariff pay by final users to private partners</b>	USD/1,000m <sup>3</sup>	18	18	18	18
Private partner investments	Th USD	71,101	71,705	70,970	89,200
	% of invest.	21%	17%	28%	27%
State investments	Th USD	230,927	304,984	156,271	212,827
	% of invest.	70%	74%	62%	64%
Illovo investments Including Pipes 2, 3, 4	Th USD	13,830	15,772	12,015	13,830
	% of invest.	4%	4%	5%	4%
	Th USD	5,533	5,558		5,533
	% of invest	11%	8%		11%
KCG investments	Th USD	2,451	3,187	1,716	2,451
	% of invest.	1%	1%	1%	1%
Agribusiness companies investments	Th USD	13,327	16,753	9,902	13,327
	% of invest.	4%	4%	4%	4%
Financial IRR for private partner investors	%	20%	20%	20%	15%
Payback period	years	9 yrs	9 yrs	9 yrs	11 yrs
Project Financial IRR before public subsidies	%	-4%	-5%	-2%	-4%
Project Financial IRR after public subsidies	%	13%	13%	13%	11%
Impact on State budget : costs of project (contract investment – positive fiscal impact)	NPV@5% USD/1,000m <sup>3</sup>	16.1	21.9	10.1	14.9

## CONCLUSION

Considering a tariff of 18USD/m<sup>3</sup>, the contribution for each stakeholder is presented in the table hereafter:

*Table 3-36: Breakdown of Contribution for each stakeholder in a concession contract  
(in Th. USD, current prices)*

Item per SVIP Phase	Investments in PPP Contract						Other Investments				Total	%
	Private partner	Public	Illovo Group	KCG / Public (donors)	Other outgrowers / Public (donors)	Agribusi. company / Public (donors)	Illovo Group	KCG / Public (donors)	Other outgrowers / Public (donors)	Agribusi. company / Public (donors)		
<b>Phase I</b>												
Intake	1,342	4,135									5,477	1%
Feeder canal	16,225	49,999									66,223	12%
Pipelines	6,006	50,892	7,985	2,451		7,482					74,815	13%
Tertiary and on-field works and equipment							30,850	23,567	41,469	18,459	114,345	20%
<i>Sub-total Phase I</i>	<i>23,573</i>	<i>105,026</i>	<i>7,985</i>	<i>2,451</i>	<i>0</i>	<i>7,482</i>	<i>30,850</i>	<i>23,567</i>	<i>41,469</i>	<i>18,459</i>	<i>260,861</i>	<i>46%</i>
<b>Phase II</b>												
Bangula canal	30,327	93,456									123,783	22%
Pipelines	14,322	32,445	5,846			5,846					58,459	10%
16 7 USD/1,000m <sup>3</sup>							68,109		22,899	28,312	119,320	21%
<i>Sub-total Phase II</i>	<i>44,649</i>	<i>125,901</i>	<i>5,846</i>	<i>0</i>	<i>0</i>	<i>5,846</i>	<i>68,109</i>	<i>0</i>	<i>22,899</i>	<i>28,312</i>	<i>301,562</i>	<i>53%</i>
<b>O&amp;M Assets</b>												
Including renewal	2 879	0									2,879	1%
<i>Sub-total O&amp;M assets</i>	<i>2,879</i>	<i>0</i>									<i>2,879</i>	<i>1%</i>
<b>TOTAL</b>	<b>71,101</b>	<b>230,927</b>	<b>13,830</b>	<b>2,451</b>	<b>0</b>	<b>13,327</b>	<b>98,959</b>	<b>23,567</b>	<b>64,368</b>	<b>46,771</b>	<b>565,302</b>	<b>100%</b>
<b>in %</b>	<b>13%</b>	<b>41%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>2%</b>	<b>18%</b>	<b>4%</b>	<b>11%</b>	<b>8%</b>	<b>100%</b>	

Considering only PPP contract investments and according to DAC (OECD / calculation of Grant element), the grant element of the concessionary loan reaches 53% (using a discount rate of 10%).

The public financial support allocated to the financing of beneficiaries contribution (except Illovo contribution) has not been specified to date. We can assume that it could reach from 50% to 100% of these investments. If this public support amounts 50%, it brings the Grant element in the total financing of the investments project up to a level of 76% (assumption n°1 of the below table).



*Tableau 3-1 : Calculation of grant element in the investments project financing  
(PPP contract investments only)*

	Amount (M USD)	Assumption 1 Grant Element	Assumption 2 Grant Element	Assumption 3 Grant Element
Public subsidies	230.9	100%	100%	100%
Private Operator – Equity	14.2	0%	0%	0%
Private Operator - Commercial loan	30.3	0%	0%	0%
Private Operator - Concessionary loan	24.5	53%	53%	53%
Private Operator - Self-financing Investments	2.1	0%	0%	0%
Illovo Financing	13.8	0%	0%	0%
Other beneficiaries Contribution	15.8	50%	75%	100%
<b>Total</b>	<b>331.6</b>	<b>76%</b>	<b>78%</b>	<b>79%</b>

### **3.4.4.2 Estimate of level of Irrigation fee if affermage contract (scenario 4)**

#### **OBJECTIVES OF CALCULATION**

This chapter gives an estimate level of irrigation fee for the final users (farmers) if the PPP contract involves only Operation and Maintenance functions for the private partner.

#### **SPECIFIC HYPOTHESIS AND ASSUMPTIONS FOR THIS CALCULATION**

##### ***Irrigation fees***

The paragraph hereafter presents results of calculation for several levels of tariff to final users: 10 USD/1,000 m<sup>3</sup>, 15 USD/1,000 m<sup>3</sup> and 18 USD/1,000 m<sup>3</sup>. It is considered that these tariffs are average tariffs. They could be differentiated among the different farmers according to their capacity/willingness to pay for irrigation fees.

##### ***Investments costs***

Investment costs will be financed by Public subsidies and by beneficiaries through their contribution. The private partner doesn't contribute to investment costs of SVIP Phase 1 and Phase 2, but he finances his O&M assets investments by capital equity.

##### ***Beneficiaries contributions***

As it is explained above, beneficiaries contribution is expected to be for secondary infrastructure (pipelines) investments, it consists of:

- ▶ Illovo contribution for Pipes 2, 3 and 4 (Phase I) expressed as a percentage of costs investments : evaluated on existing areas, considering additional investment costs to be financed (under the constraint of an expected return on equity invested of 15%) and O&M cost savings resulting from SVIP
- ▶ Kasinthula and agribusiness companies contribution for, Pipes 2, 3 and 4 (Phase I) and Illovo, Kasinthula and agribusiness companies contribution for other pipes (Pipe 1 Phase I and Other Pipes Phase II): equal to the % of Illovo contribution for Pipes 2, 3, 4 and maximum to 10%.

### **Remuneration of the private operator :**

The tariff for private partner is negotiated on an yearly basis with the Contracting Authority: this tariff must cover all operating expenses and a 15% margin on sales on behalf of his remuneration.

The difference between the tariff for final users and the tariff for private partner is a fee for the Contracting Authority.

## **RESULTS**

With a tariff fixed at 10 USD/1,000 m<sup>3</sup>:

- ▶ Illovo is able to contribute to 39% of CAPEX of pipelines 2, 3 and 4: 19,617 Th USD;
- ▶ The contribution of other beneficiaries for Pipes 2, 3 and 4 investment costs and of all beneficiaries (including Illovo) for the other pipes investment costs reach 10%: 24,076 Th USD;
- ▶ Public party contribution reaches 285,064 Th USD;
- ▶ The fund, composed by fee collected for the Contracting Authority, reaches 124,137 Th USD (before indexation). It corresponds to the coverage of 37% of debt service of a loan contracted to finance investments (hypothesis of a loan IDA from World Bank: maturity 30 years plus 10 years of grace period and interest rate of 0.75%);
- ▶ Considering investment subsidies, tax income and fees to be collected on behalf of the Contracting Authority, the total impact on State finances is estimated to be a cost of 16.7 USD/1,000m<sup>3</sup>.

With a tariff fixed at 15 USD/1,000 m<sup>3</sup> :

- ▶ Illovo is able to contribute to 18% of CAPEX of pipelines 2, 3 and 4: 9,255 Th USD;
- ▶ The contribution of other beneficiaries for Pipes 2, 3 and 4 investment costs and of all beneficiaries (including Illovo) for the other pipes investment costs reach 10%: 24,076 Th USD;
- ▶ Public party contribution reaches 295,426 Th USD;
- ▶ The fund composed by fee collected for the Contracting Authority, reaches 213,170 Th USD (before indexation). It corresponds to the coverage of 61% of debt service of a loan contracted to finance investments (hypothesis of a loan IDA from World Bank: maturity 30 years plus 10 years of grace period, interest of 0.75%);
- ▶ Considering investment subsidies, tax income and fees to be collected on behalf of the Contracting Authority, the total impact on State finances is estimated to be a cost of 13,2 USD/1,000m<sup>3</sup>.

With a tariff fixed at 18 USD/1,000 m<sup>3</sup> :

- ▶ Illovo is able to contribute to 7% of CAPEX of pipelines 2, 3 and 4: 3,521 Th USD;
- ▶ The contribution of other beneficiaries for Pipes 2, 3 and 4 investment costs and of all beneficiaries (including Illovo) for the other pipes investment costs reach 10%: 24,076 Th USD;
- ▶ Public party contribution reaches 301,161 Th USD;
- ▶ The fund, composed by fee collected for the Contracting Authority, reaches 262,761 Th USD (before indexation). It corresponds to the coverage of 73% of debt service of a loan contracted to finance investments (hypothesis of a loan IDA from World Bank: maturity 30 years plus 10 years of grace period, interest of 0.75%);

- Considering investment subsidies, tax income and fees to be collected on behalf of the Contracting Authority, the total impact on State finances is estimated to be a cost of 11.3 USD/1,000m<sup>3</sup>.

Table 3-37: Contribution for each stakeholder

Tariff pay by final users to private partners	USD/1,000m <sup>3</sup>	10	15	18
State investments	Th USD (current)	285,064	295,426	301,161
	NPV@5%,USD/1,000m <sup>3</sup>	22,8	23,6	24,1
	% of invest.	86%	89%	91%
Private partner (O&M assets)	Th USD(current)	2,879	2,879	2,879
	% of invest.	1%	1%	1%
Illovo investments Including Pipes 2, 3, 4	Th USD(current)	27,915	17,553,	11,818
	% of invest.	8%	5%	4%
	Th USD(current)	19,617	9,255	3,521
	% of invest	39%	18% <sup>3</sup>	7% <sup>4</sup>
KCG investments	Th USD(current)	2,451	2,451	2,451
	% of invest.	1%	1%	1%
Agribusiness companies investments	Th USD(current)	13,327	13,327	13,327
	% of invest.	4%	4%	4%
Remuneration for private partner	Total from year 1 to year 30 Th USD (current)	40,798	60,730	73,188
	Total from year 1 to year 30 Th USD (constant)	29,295	43,561	52,476
	USD/1,000m <sup>3</sup> (constant) (Average year 1 to year 30)	1.3	1.9	2.3
	% of total sales (average year 1 to year 30)	15%	15%	15%
Fee for the Contracting Authority	Th USD (before tariff indexation)	124,137	213,170	262,761
Impact on State budget (investment subsidies – tax income - fees for Contracting Authority)	NPV@5% USD/1,000m <sup>3</sup>	16.7	13.2	11.3

<sup>3, 4</sup> Due to change in the index formula tariff (change in the part of inflatable expenses and no inflatable expenses), tariff for final users evolve differently in the affermage scenario compared with the concession scenario. As a result, Illovo capacity to contribute to pipelines 2, 3 and 4 costs is lower than in the concession scenario.

## CONCLUSION

Considering a tariff of 10 USD/m<sup>3</sup> for an affermage contract, the contribution for each contributor is presented in the table hereafter:

Table 3-38: Breakdown of Contribution for each stakeholder in a affermage contract

Item per SVIP Phase,	Investments in PPP Contract						Other Investments				Total	%
	Private partner	Public	Illovo Group	KCG / Public (donors)	Other outgrowers / Public (donors)	Agribus. company / Public (donors)	Illovo Group	KCG / Public (donors)	Other outgrowers / Public (donors)	Agribus. company / Public (donors)		
<b>Phase I</b>												
Intake	0	5,477									5,477	1%
Feeder canal	0	66,223									66,223	12%
Pipelines	0	42,813	22,069	2,451		7,482					74,815	13%
Tertiary and on-field works and equipment							30,850	23,567	41,469	18,459	114,345	20%
<i>Sub-total Phase I</i>	0	114,514	22,069	2,451	0	7,482	30,850	23,567	41,469	18,459	260,861	46%
<b>Phase II</b>												
Bangula canal	0	123,783									123,783	22%
Pipelines	0	46,767	5,846			5,846					58,459	10%
Tertiary and on-field works and equipment							68,109		22,899	28,312	119,320	21%
<i>Sub-total Phase II</i>	0	170,550	5,846	0	0	5,846	68,109	0	22,899	28,312	301,562	53%
<b>O&amp;M Assets</b>												
Including renewal	2,879	0									2,879	1%
<i>Sub-total O&amp;M assets</i>	2,879	0									2,879	1%
<b>TOTAL</b>	<b>2,879</b>	<b>285,064</b>	<b>27,915</b>	<b>2,451</b>	<b>0</b>	<b>13,327</b>	<b>98,959</b>	<b>23,567</b>	<b>64,368</b>	<b>46,771</b>	<b>565,302</b>	<b>100%</b>
<b>in %</b>	<b>1%</b>	<b>50%</b>	<b>5%</b>	<b>0%</b>	<b>0%</b>	<b>2%</b>	<b>18%</b>	<b>4%</b>	<b>11%</b>	<b>8%</b>	<b>100%</b>	

Considering a tariff of 15 USD/m<sup>3</sup> for an affermage contract, the contribution for each contributor is presented in the table hereafter:

Table 3-39: Breakdown of Contribution for each stakeholder in a affermage contract

Item per SVIP Phase	Investments in PPP Contract						Other Investments				Total	%
	Private partner	Public	Illovo Group	KCG / Public (donors)	Other outgrowers / Public (donors)	Agribus. company / Public (donors)	Illovo Group	KCG / Public (donors)	Other outgrowers / Public (donors)	Agribus. company / Public (donors)		
<b>Phase I</b>												
Intake	0	5,477									5,477	1%
Feeder canal	0	66,223									66,223	12%
Pipelines	0	53,377	11,506	2,451		7,482					74,815	13%
Tertiary and on-field works and equipment							30,850	23,567	41,469	18,459	114,345	20%
<i>Sub-total Phase I</i>	0	125,077	11,506	2,451	0	7,482	30,850	2,567	41,469	18,459	260,861	46%
<b>Phase II</b>												
Bangula canal	0	123,783									123,783	22%
Pipelines	0	46,767	5,846			5,846					58,459	10%
Tertiary and on-field works and equipment							68,109		22,899	28,312	119,320	21%
<i>Sub-total Phase II</i>	0	170,550	5,846	0	0	5,846	68,109	0	22,899	28,312	301,562	53%
<b>O&amp;M Assets</b>												
Including renewal	2,879	0									2,879	1%
<i>Sub-total O&amp;M assets</i>	2,879	0									2,879	1%
<b>TOTAL (in M. USD)</b>	<b>2,879</b>	<b>295,627</b>	<b>17,352</b>	<b>2,451</b>	<b>0</b>	<b>13,327</b>	<b>98,959</b>	<b>23,567</b>	<b>64,368</b>	<b>46,771</b>	<b>565,302</b>	<b>100%</b>
<b>in %</b>	<b>1%</b>	<b>52%</b>	<b>3%</b>	<b>0%</b>	<b>0%</b>	<b>2%</b>	<b>18%</b>	<b>4%</b>	<b>11%</b>	<b>8%</b>	<b>100%</b>	

Considering a tariff of 18 USD/m<sup>3</sup> for an affermage contract, the contribution for each contributor is presented in the table hereafter:

Table 3-40: Breakdown of Contribution for each stakeholder in a affermage contract

Item per SVIP Phase	Investments in PPP Contract						Other Investments				Total	%
	Private partner	Public	Illovo Group	KCG / Public (donors)	Other outgrowers / Public (donors)	Agribus. company / Public (donors)	Illovo Group	KCG / Public (donors)	Other outgrowers / Public (donors)	Agribus. company / Public (donors)		
<b>Phase I</b>												
Intake	0	5,477									5,477	1%
Feeder canal	0	66,223									66,223	12%
Pipelines	0	58,910	5,972	2,451		7,482					74,815	13%
Tertiary and on-field works and equipment							30,850	23,567	41,469	18,459	114,345	20%
<i>Sub-total Phase I</i>	0	130,611	5,972	2,451	0	7,482	30,850	23,567	41,469	18,459	260,861	46%
<b>Phase II</b>												0%
Bangula canal	0	123,783									123,783	22%
Pipelines	0	46,767	5,846			5,846					58,459	10%
Tertiary and on-field works and equipment							68,109		22,899	28,312	119,320	21%
<i>Sub-total Phase II</i>	0	170,550	5,846	0	0	5,846	68,109	0	22,899	28,312	301,562	53%
<b>O&amp;M Assets</b>												
Including renewal	2,879	0									2,879	1%
<i>Sub-total O&amp;M assets</i>	2,879	0									2,879	1%
<b>TOTAL (in M. USD)</b>	<b>2,879</b>	<b>301,161</b>	<b>11,818</b>	<b>2,451</b>	<b>0</b>	<b>13,327</b>	<b>98,959</b>	<b>23,567</b>	<b>64,368</b>	<b>46,771</b>	<b>565,302</b>	<b>100%</b>
<b>in %</b>	<b>1%</b>	<b>53%</b>	<b>2%</b>	<b>0%</b>	<b>0%</b>	<b>2%</b>	<b>18%</b>	<b>4%</b>	<b>11%</b>	<b>8%</b>	<b>100%</b>	

The results of financial simulation will be used in the final analysis in the last section comparing concession and affermage options.

## 3.5 ANALYSIS OF PPP OPTIONS FOR IRRIGATION SERVICES FOR SVIP

### 3.5.1 Risk allocation

A general discussion on risks is developed in the following table.

*Table 3-41: Risk description and allocation for irrigation services*

<b>Risk</b>	<b>Description</b>	<b>Allocation</b>
Construction	The risk that quantities or prices of inputs are higher than planned, or that construction takes longer, than estimated.	To be assumed by the party in charge of construction.
Operational	The risk that the infrastructure provided or service delivered: <ul style="list-style-type: none"> <li>▶ Fails to meet original specifications</li> <li>▶ Has higher operations and maintenance costs than expected</li> <li>▶ Is interrupted or ceased because of a fault of the operator.</li> </ul>	Usually assumed by the private operator because it has responsibility for operating the facility to provide the service.  However, where inputs are controlled by the government, the government may take on risks related to the provision of this input. In this case, the water and the energy availabilities must be secured and guarantees by the public party..
Commercial	The risk that operating revenues differ from expected revenues. Commercial risk is often broken down into: <ul style="list-style-type: none"> <li>▶ Demand risk, when customers use the service less than expected</li> <li>▶ Payment risk, when customers do not pay the expected fees, or pay their bills later than expected</li> </ul>	If the PPP involves a private operator taking over the operations of a service for which there is well-established demand and payment capacity, this may be borne completely by the private operator  If the PPP is for a food security oriented project with uncertain demand, serving customers whose payment capacity has not been tested, or if demand and payment risks are quite high, these risks may be shared between the public party and private operator or borne completely by the public party
Financial	The risk of the project failing to obtain financing, or that financing terms will differ from forecasts	If the project is financially viable on its own, the private operator should be able to obtain financing with little difficulty, and financial

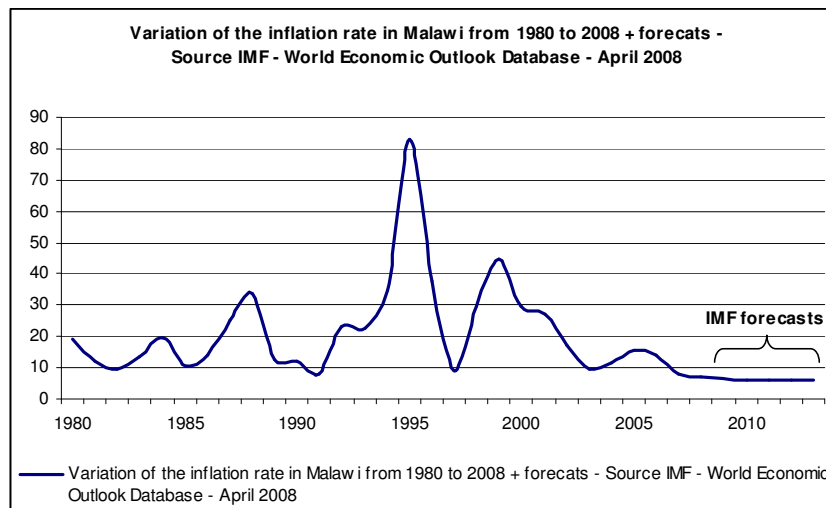
Risk	Description	Allocation
		<p>risk is borne by the private operator.</p> <p>If the project requires government funds to be financially viable, the government may need to bear some degree of financial risk.</p>
Exchange rate	The risk that variability in foreign exchange rates will affect project profitability. This arises when project inflows are in a different currency than project outflows, such as debt repayments or input purchases.	<p>May be shared between private operator and the public party, or consumers, through indexation of prices</p> <p>Where government policy has a large impact on exchange rates, the private party may have to bear a larger share of exchange rate risk</p>
Regulatory	The risk that changes in regulations affecting the PPP's sector will affect project cash flows. Includes tariff risk, where tariff is government-controlled—the risk that tariffs will not be upheld or enforced at a cost-recovery level	Usually borne by private operator, unless tightly specified in contract. However, the PPP contract may also include penalties to the government for not adjusting tariffs as specified
Land acquisition	The risk that the project developer will not be able to acquire the necessary land, or that it costs more than expected	<p>If the land on which the project will be developed is owned or otherwise controlled by the government, the public party may bear this risk</p> <p>If land will be acquired from other private-sector parties in the real estate market, this risk may be assumed by the private operator</p>
Force Majeure	<p>The risk of events beyond the control of either party.</p> <p>Force majeure risks can be categorized as “insurable” and “uninsurable”. Acts of nature, such as earthquakes, floods or droughts are typically insurable. Some political events, such as acts of terrorism or wars, are typically uninsurable</p>	<p>If the risks are insurable, they are usually assumed by the private operator, who may obtain an insurance policy to mitigate its exposure to these risks</p> <p>If the risks are uninsurable, they are usually assumed by the public party</p>
Sovereign political	The risk that legal or political changes negatively impact the project. Examples include the risks of expropriation, inability to repatriate dividends, or inconvertibility of foreign exchange	Usually borne by the private operator. Some government or multilateral agencies offer insurance against these types of risks, such as Political Risk Insurance offered by the U.S.



## FOCUS ON THE FOREIGN EXCHANGE RISK

In this analysis, simulations have been developed in USD but the Foreign exchange risk (Forex risk) has to be considered for PPP development in Malawi. The local inflation is 8%, which is the rate recommended by IMF for financial projections over the next ten years.

Figure 3-14: Inflation rate in Malawi



The forex risk for the private borrower and investor is difficult to address because of the fundamental mismatch between the fact that the debt and equity tend to be denominated in foreign currency whereas the majority of revenue is in local currency, thereby exposing the financial structure to the foreign exchange risk.

When the currency depreciation is slow, the debt increase is gradual. Gradual tariff increases allow the economic sustainability of the project to be maintained and are affordable to the local population. The balance sheet and the cash flows of the Water Irrigation Service Operator are gradually modified. The economic balance can be maintained by adjusting the irrigation tariffs according to local inflation. The tariff increases may be decided by the local government or to be adjusted automatically via the application of a tariff indexing formula integrating the local inflation rate and the forex rate. As a matter of fact, the US Dollar denomination in the financial projections doesn't anticipate any tariff evolution in local currency.

Sudden and substantial devaluation poses a problem to the operator that had to raise capital in foreign currency. Rapid adjustments of tariffs often are not possible for political reasons. The most satisfactory long-term solution to this risk is the greater use of local sources of finance, denominated in the same local currency as the source of project revenues. Development agencies have started to develop new products for guaranteeing debt raised in local currency.

The other Risk Mitigation Instruments (RMIs) are as follows:

- ▶ use of currency finance or hedging;
- ▶ government exchange rate guarantees;
- ▶ devaluation liquidity backstopping schemes.

A Devaluation Liquidity Backstopping Facility (DLBF) is proposed as one method of mitigating the risk of forex fluctuations. The DLBF would be a contingent facility provided by an international public body with a first class financial standing, able to carry the financial burden from devaluation up to the end of the period of revenue recovery. The international body would guarantee the foreign loans involved and finance the additional debt service entailed by devaluation. The guarantee would be counter-guaranteed by the host government, and disbursements on it would create sovereign debt. The national government would recover its outlays by levying an “affordable” water surcharge, collected through the usual billing entity over an appropriate period of time.

At the time the foreign loan was contracted, an initial base case financial model would be produced, predicting a specific proportion of debt service to revenues under “normal” operating conditions. This percentage would translate into a nominal amount of local currency which, when divided by the payment due in foreign currency, gives the “affordable” exchange rate. This rate is the threshold above which the DLBF would intervene.

Amongst other features, the project would pay annual premiums to the Facility, a minimum level of devaluation would be borne by the project, and any positive post-devaluation exchange rate changes would reduce the compensation amounts (Winpenny (2003)).

This solution was implemented in a public-private partnership in Brazil. Tariffs are indexed to local inflation. In case of sudden devaluation, the liquidity backstopping facility provides a loan in foreign currency that is used to service the debt. The private operator can repay the loan to the liquidity backstopping facility as local inflation catches up with the devaluation (Thomsen 2005).

#### **Box OPIC’s Exchange Rate Liquidity Facility for AES Tiete project**

AES Tiete is a complex hydropower scheme in Sao Paulo, Brazil, privatized in 1999, which sells power to the State at an inflation-indexed price. The owners of the company issued fixed interest securities to a value of \$300 million protected by devaluation coverage offered by OPIC, in the form of a \$30 million stand-by credit facility.

Payment is triggered when the real exchange rate falls below the floor values fixed at the time of the deal, and if the project is unable to meet its scheduled debt service payments. Currency risk is isolated from operational risks. The facility is revolving, in the sense that advances are repaid, with interest, when the project has a positive cash flow after servicing senior debt, for example after a subsequent appreciation of the real exchange rate.

The use of this Facility enabled the securities to achieve an investment-grade rating at the time of their issue (though they have subsequently been downgraded, due mainly to local market problems and the status of the power offtaker). The scheme relies on several key factors for its viability: the existence of a reliable and transparent measure of local inflation; a foreign exchange market responsive to market forces; a convertible currency that is initially not substantially overvalued; and a risk that is relatively modest and quantifiable on historical evidence. Ipso facto this limits its potential application to a few emerging markets.

Sources: OPIC presentations; Wright, Matsukawa & Sheppard, 2002

### 3.5.2 Advantages / drawbacks

#### RISK ALOCATION ACCORDING TO PPP OPTIONS

These risks are not allocated equally according to the different options of PPP transactions. The next table shows how the concession (option n°2) transfers a maximum of risks to private sector compared to other options.

For the demand and payment risks, a mechanism of sharing risks should be elaborated to cover food security activities:

The public party will have to bear costs for investments and envisage to subsidy SVIP irrigation fee for the command area dedicated to food security purposes if these crops generate less profitability than showed in section 3.4.4.1.

Table 3-42: Main Risks allocation for PPP options

Description of risks	Options for PPP transaction models		
	2- Concession on Irrigation services	4- Lease / Affermage contract	6- Supervision and O&M contract
<b>1. Construction risk</b>	Private	Public	Public
<b>2. Operational risk</b>	Private	Private	Private
<b>3. Demand risk</b>			
For high value chain value activities of SVIP	Private	Private	Public
For Food security activities of SVIP	Public	Public	
<b>4. Payment risk</b>			
For high value chain value activities of SVIP	Private	Private	Public
For food security activities of SVIP	Public	Public	
<b>5. Capital Costs financing</b>			
For high value chain value activities of SVIP	Private / Public	Public	Public
For food security activities of SVIP	Public		

## SYNTHESIS OF FINANCIAL RESULTS

The table hereafter summarizes the findings of comparison between concession and affermage options.

Figure 3-15: Synthesis of main financial indicators for concession and affermage

Main items for scenari comparison	Options for PPP transaction models	
	2- Concession on Irrigation services (base case: 18 USD/ 1,000 m3)	4- Lease / Affermage contract (base case scenario: 10 USD / 1,000 m3)
<b>1. Financing risk</b>	<b>Private / Public</b>	<b>Public</b>
1.1 Participation of private to capital costs	Participation to the CAPEX is 21% or 70 M. USD	0% for CAPEX, only for O&M assets
1.2 Public funding (M. current USD)	231 M. USD (base case)	285 M. USD (base case)
1.3 Beneficiaries contribution to capital costs (M. current USD)	29.5 M. USD (base case)	43.7 M. USD (base case)
<b>2. Fiscal impacts</b>		
2.1 Subsidies for PPP contract Investments (NPV@5%, M. constant USD)	-190 M USD	-235 M USD
2.2 Income tax (NPV@5%, M constant USD)	25 M USD	6 M USD
2.3 Fees for Contracting Authority (NPV@5%, M constant USD)	0 M USD	57 M USD
2.4 Total Impact on State budget (NPV@5%, M constant USD)	-165 M USD	-172 M USD
2.5 Impact on State budget : investment subsidies – tax income - fees for Contracting Authority (NPV@5%, constant USD/1,000m <sup>3</sup> )	16,1 USD/1,000m <sup>3</sup>	16,7 USD/1,000m <sup>3</sup>
<b>3. Attractiveness for private sector</b>		
3.1 Risks	High	Medium
3.2 Turn-over perspectives (before tariff indexation, year 30)	15 M. USD / year	8.5 M. USD /year
3.3 Equity (M current USD)	14 M. USD	0.8 M. USD (to finance O&M assets)

### 3.5.3 Recommendations

#### 3.5.3.1 Choosing a PPP option for irrigation services

The previous table confirms that concession will transfer more risks to the private partner (21% of CAPEX / 70 M. USD in current prices) but the tariff of SVIP irrigation fees could be higher.

Public contribution is higher for affermage (285 M. USD against 231 M. USD) and the impact on State Budget is higher (16,7 USD / 1,000 m<sup>3</sup> against 16,1 USD / 1,000 m<sup>3</sup> for concession).

The consultant would recommend **to deepen the analysis of these two options in the PPP Feasibility study, giving priority to the concession** if tariff is confirmed to be affordable for the final users.

### 3.5.3.2 Limiting risks by a proper selecting bids process for a concession contract

Financial proposal evaluation and classification can be done in one of the following **two ways**.

The first (subsidy-based selection) consists of determining the scale and the tariff structure of the fees to be charged and asking the candidates to propose the **minimum subsidy** needed from the public authorities in order to finance the investment. For the Contracting Authority, the disadvantage of this method is its great uncertainty regarding the amount of subsidies required. Nevertheless, it has an advantage: the evolution of the price charged for the scheme services is controlled and this is decisive for the acceptance of the project by the users.

The second method (tariff-based selection) consists of determining the total public and private subsidies based on the total investment and asking the candidates to propose a **target tariff for the fees payable by the users**. The second method eliminates the uncertainty regarding public subsidies while keeping the burden for the users to a minimum. The risk is that the resulting tariffs are unaffordable for the users.

Table 3-43: Advantages and drawbacks of selection methods

	Subsidy-based selection	Tariff-based selection
Description	In the financial proposal, the candidates indicate the <b>amount the State is required to subsidize; they are</b> required to implement their investment programmes; the rates paid by the users are determined in the tendering specifications	In the financial proposal, the candidates indicate the <b>tariffs applicable to the users</b> ; the distribution of investment outlay between the Utility Manager and the State is determined in the tendering specifications
Reference	Commonly used for telephone and rural electricity utilities	Used in the Guerdane (Morocco concession project)
<b>Consequences</b>		
Tariffs	Tariffs limited subjectively	Risk of <b>charging the users a higher rate</b> with this method
State subsidy	Risk of asking for higher State subsidies (because tariffs charged are lower)	Risk of excessively high public subsidies compared to actual investment (case of Guerdane)
<b>Risks for the stakeholders</b>		
For the Contracting Authority	Uncertainty about amount to be subsidized  Risk that the concession contract needs to become a <b>government contract</b> if the private partner's share of the investment outlay is too little	Certainty regarding amount to be subsidized  Risk of excessively high public subsidies (see previous explanations)
For the private partner	The tariffs negotiated are likely to be questioned if there is a surplus on investment costs	Risk of accumulating arrears (because the users are probably charged more with this method)

	Subsidy-based selection	Tariff-based selection
<b>Risks in the process</b>		
Adjudication process	Less risk of unsuccessful outcome	Risk of <b>unsuccessful outcome</b> if the users cannot afford to pay the price proposed,
Implementation of the concession/management contract	Risk of <b>not completing the investment programme</b> Risk of <b>more serious failure</b> due to tariff insufficiency	The users contest the tariffs

After comparing the advantages and drawbacks of the two methods in the above table, we can see that:

- ▶ there is a higher rate of failure for the bidding process with tariff-based selection, but this is a safer method for a successful implementation of the project;
- ▶ depending on the amount of the State subsidies, the subsidy-based selection method may require a government contract instead of a concession contract; it does not enable the amount to be budgeted in advance, which can mean that extra time is necessary to approve the financial set-up;
- ▶ the risk of failure during implementation appears to be greater than with the subsidy-based method.

Finally, a mix of both method is recommended in order to limit the following two principal risks:

- ▶ **the risk of being unable to adjudicate if the tariffs proposed by the candidates are too high compared to present prices and what the users can afford;**
- ▶ **the risk of overestimating investment costs which would mean that the Contracting Authority would pay out subsidies that are too high compared to the initial set-up and the proposed tariffs (this happened in Guerdane project).**

The rules for tenderers will quote several amounts corresponding to public subsidies, e.g. three amounts, based on the results of the Consultant's financial simulations (see further on).

Candidates will have to propose values for the following two parameters:

- ▶ **The maximum percentage corresponding to subsidies:** this will prevent penalizing the Contracting Authority if the investment programme has been overestimated; the Private partner will not be tempted to minimise the cost of investments because the Private partner is responsible for covering any additional costs.

In the example below, Candidate 1 considers that USD 70 million is 70% maximum of the total investment. If the investment ultimately amounts to USD 100 million, the State subsidy will be USD 70 million. If the ultimate total is only DH90 million, the State subsidy will be DH 63 million.

- ▶ **The tariffs to be paid by the users,** based on the method used for the Guerdane irrigation scheme concession contract.

Candidates must complete the following table; the amounts indicated below are given as an example:

Maximum subsidies	Candidate 1		Candidate 2		Candidate 3	
	Maximum percentage corresponding to State subsidies	Rate paid by the users, incl. VAT (USD cents per CM)	Maximum percentage corresponding to State subsidies	Rate paid by the users, incl. VAT (USD cents per CM)	Maximum percentage corresponding to State subsidies	Rate paid by the users, incl. VAT (USD cents per CM)
USD 70 million	70%	1				
USD 80 million	80%	09				
USD 90 million	90%	0.8				

The three proposals for the three different amounts subsidized must be remitted in three separate sealed envelopes each labelled with the corresponding amount of subsidies.

The Bid Evaluation Committee will use a confidential evaluation matrix including:

- ▶ the maximum admissible tariff, e.g. 1.0 USD cent per CM.
- ▶ criteria to prevent dumping, both for the price per CM and the maximum amount subsidized, which would render the project impracticable.

The envelopes must be opened lowest subsidy upwards. For the same amounts subsidized, bids will be ranked by increasing order of the VAT inclusive rates per CM proposed. If one or more candidates propose rates that are lower than or equal to the maximum acceptable price charged, they may be required to negotiate depending on the selected negotiation method.

To award the concession contract, two methods of negotiation with the candidates are possible:

- ▶ contact the lowest bidder and if negotiation fails, contact the second lowest bidder, and so on;
- ▶ contact the two lowest bidders and negotiate in parallel with both of them.

### **3.5.3.3 Other issues related to the success of SVIP development in Public Private Partnership**

Among the other issues to be detailed in the following studies for SVIP development are:

#### **THE LAND TENURE IN SVIP AREA**

The issue of land tenure in the area involves strategic interests among:

- ▶ local communities
- ▶ Illovo Group and its expansion plan
- ▶ Potential other investors (agribusiness companies) who will be attracted to invest if land is secure and if they can have access to consolidated area of land (probably several hundreds or thousands hectares).

#### **THE INSTITUTIONAL ASPECTS**

The development of SVIP in PPP may require the creation of an new entity or require the reorganization of the existing entities to:

- ▶ Take responsibilities for the development of all the supporting services not included in the PPP contract for irrigation services. This concerns all the supporting services to agricultural development (either on PPP or other institutional arrangements): extension, credit, research, social services, etc.
- ▶ Be in charge of land management if it is decided to have a regulator for land issue in the area. This entity could be the landlord responsible for acquiring the land for irrigation and sale or lease contract (99-year) to large commercial farmers and small holder producer companies, as well as to carry out the coordination, planning development and monitoring of the entire SVIP project. It will be important that this entity does not engage in any major commercial activity to expose GoM to commercial risks such as involvement in the provision of farm inputs and agricultural support services.
- ▶ Act as Contracting Authority if the Ministry of Irrigation and Water Development intends to delegate this function to a region-based entity.

#### **THE ENERGY AND WATER BALANCE**

The SVIP will impact water and energy balance (increase of water abstraction upstream Kapichira, decrease of energy consumption by reduction of river withdrawals, creation of surplus of energy from the sugar plant, etc.).

These impacts need to be quantified and taken into account in the financial analysis of the SVIP.



***World Bank***

***Ministry of Irrigation and Water  
Development***

***Privatization Commission***

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**PUBLIC PRIVATE  
PARTNERSHIP OPTIONS  
STUDY AND AWARENESS  
RAISING FOR IRRIGATION  
INVESTMENT IN MALAWI**

***Annexes of Final report***

*February 2011*



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**PUBLIC PRIVATE PARTNERSHIP OPTIONS STUDY AND  
AWARENESS RAISING FOR IRRIGATION INVESTMENT  
IN MALAWI**

**ANNEXES OF THE FINAL REPORT**

**ANNEX 1: COMPREHENSIVE LEGAL FRAMEWORK ANALYSIS ..... 3**

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## LIST OF ABBREVIATIONS AND ACRONYMS

BOO	Build Operate Own (type of PPP model)
BOT	Build Operate Transfer (type of PPP model)
DB	Design Build (type of PPP model, other name for EPC)
DBO	Design Build Operate (type of PPP model, combining EPC and O&M contracts)
EPC	Engineering Procurement Construction (type of PPP model)
GoM	Government of Malawi
IFC	International Finance Corporation (entity of the World Bank Group)
MAFS	Ministry of Agriculture and Food Security
MIGA	Multilateral Investment Guarantee Agency (entity of the World Bank Group)
MIWD	Ministry of Irrigation and Water Development
MPD&C	Ministry of Planning, Development and Cooperation
MWERA	Malawi Water & Energy Regulatory Authority
O&M	Operation and Maintenance
PC	Privatization Commission
PPIAF	Public Private Infrastructure Advisory Facility
PPP	Public Private Partnership
SVIP	Shire Valley Irrigation Project

# **Annex 1: Comprehensive Legal framework analysis**

## 1.0 THE CONSTITUTION OF MALAWI

1.1 The options for a Public-Private Partnership (PPP) program would depend to a large extent on the soundness of the existing legislative and regulatory framework. In the first place, the core objectives of PPP programme must be consistent with the constitutional order prevailing in Malawi. The Constitution represents the principal legislative instrument in this country. Any Act that is inconsistent with the provisions of the Constitution shall to the extent of such inconsistency be invalid.

1.2 The Constitution, in Chapter IV (Human Rights), guarantees the welfare of the people of Malawi and their economic activity, their ability to work and to pursue a livelihood anywhere in Malawi. In this regard, the Constitution entitles every person to acquire property alone or in association with others. Further, the Constitution provides for the protection of labour rights. The main elements of the Constitution of relevance to this assignment are:

### 1.2.1 Equality

Section 20 prohibits discrimination of persons in any form and it guarantees all persons equal and effective protection against discrimination on grounds of race, colour, sex, language, religion, political or other opinion, nationality, ethnic or social origin, disability, property, birth or other status. This implies that everyone is equal before the law in Malawi.

### 1.2.2 Right to own Property

Section 28 of the Constitution permits any person irrespective of nationality to acquire property. This would mean that a foreign investor has the right to acquire property and undertake business in Malawi.

### 1.2.3 Economic Activity

Section 29 grants to every person the right to freely engage in economic activity, to work and pursue a livelihood anywhere in Malawi.

#### 1.2.4 Right to Development

In terms of section 30, all persons and peoples have a right to development and, therefore, to the enjoyment of economic, social, cultural and political development and the State is obliged to take all necessary measures for the realization of the right to development. Such measures include equality of opportunity for all in their access to basic resources, education, health services, food, shelter, employment and infrastructure.

#### 1.2.5 Labour

Section 31 entitles every person to fair and safe labour practices and to fair remuneration.

#### 1.2.6 Rule of Law and Access to Justice

One of the fundamental principle on which the Constitution is founded is the rule of law. The Constitution seeks to protect individual rights and freedoms, including economic activity, property, freedom of movement and residence, and access to justice and legal remedies. Section 41 grants every person the right to access any court of law or any other tribunal with jurisdiction for final settlement of legal issues. The section also grants the right to an effective remedy for acts violating his legal rights and freedoms. Section 9 of the Constitution vests in the judiciary the responsibility to protect and enforce the Constitution.

#### 1.2.7 Expropriation of Property

Section 44(4) of the Constitution allows for the expropriation of property if conducted for "...public utility...", but allows for adequate notification and compensation. Thus, prima facie if the Government of Malawi (GoM) forms the view that certain property is required for the benefit of the general public "...adequate compensation..." would be made to the owner. Concern has been raised as to whether this may not be abused by the State to expropriate land "in the public interest" arbitrarily. No such incident though has been recorded. Further, neither 'public utility' nor "adequate compensation" is defined.

## 2.0 PRIVATE AND FOREIGN INVESTMENT LAWS

2.1 This section examines legislation that was enacted to promote local and foreign investment into the economy.

### 2.2 Investment Promotion Act

- 2.2.1 This is a piece of legislation that was enacted to promote the attraction of investments into Malawi. It establishes the Malawi Investment Promotion Agency (MIPA) as an agency responsible for implementing the investment promotion functions of the GoM.
- 2.2.2 The Act incorporates every recognised incentive to invest in Malawi, including facilitation of land transfers, tax holidays and neutral international arbitration. Through MIPA, investors can access general incentives and export incentives, or incentives for manufacturing in bond. The Act is generally a good piece of legislation. MIPA is, however, hampered by inexplicable bottlenecks, e.g., insufficient funding, and more crucially the fact that MIPA is not in fact "a One Stop Shop". Investor applications for incentives are submitted through an Investment Approval Committee that meets once a month. This Committee is made up of public sector offices such as Ministry of Industry and Trade, Department of Immigration and the Malawi Revenue Authority. Further, the Committee has authority to consider and approve temporary work permits only. Applications for the general incentives or the export incentives have to be submitted direct to the Minister of Finance.
- 2.2.3 The GoM is revising its National Investment Policy by updating its investment policy, procedures and institutional framework so as to match the present day realities. The proposed revised policy seeks to eliminate inherent weaknesses in the investment environment and, more crucially, align the investment policy to the aspirations of the MGDS. A good investment law should, among other matters, state in no uncertain terms the entry requirements to do business, correct gaps or inconsistencies in the legal framework and provide the fundamental guarantees that investors expect. To address these matters, a new piece of legislation, that is, the Investment and Export Promotion Bill, 2008 has been proposed.

### 2.3 Export Promotion Council Act

- 2.3.1 The Malawi Export Promotion Council (MEPC) was established under the aegis of the Act to promote the export of agricultural and manufactured goods produced in Malawi. It is rather odd that MIPA, and not MEPC, manages the Export Processing Zone Act. For the past 9 years the GoM has been proposing the merger of MIPA and the MEPC, to take advantage of synergy in expertise.

### 2.4 Investment and Export Promotion Bill, 2008

- 2.4.1 The Investment and Export Promotion Bill, 2008 was published on 11<sup>th</sup> July 2008 and it seeks to repeal the Investment Promotion Act and the Export Promotion Council Act and have MIPA and the MEPC merged into one entity, namely, the Malawi Investment and Trade Centre. The rationale for the merger is to try to

rationalise export trade and investment, reduce duplication of efforts and improve efficiency.

2.4.2 Among other things, the Bill deals with matters relating to investment certificates, how one can apply for the investment certificate, the process for consideration of the investment certificate and under what circumstances can the investment certificate be revoked, among other issues.

2.4.3 The Bill also deals with matters relating to relevant permits and provides that the Centre should provide one-stop service in the issuing of the relevant permits and the processing of the relevant permits.

## 2.5 Export Incentives Act

2.5.1 The Export Incentives Act was enacted in 1989 to provide incentives to exports, and also established a National Export Policy Committee. The Minister supervises the implementation of the Act and, by virtue of section 3(3), also supervises the National Export Policy Committee. The Act establishes a Foreign Exchange Revolving Fund to assist registered exporters with foreign exchange. This revolving fund assists potential exporters with pre-export finance requirements. It was originally targeting the Small and Micro Enterprises (SME).

2.5.2 Part V lists the incentives applicable under the Act. These include:

- (a) a 12% income tax allowance on taxable income derived from exports;
- (b) duty draw back on raw materials, including packaging, imported for the purpose of the manufacture, processing or production of Malawi products destined for export; and
- (c) technical assistance offered to exporters by MEPC.

2.5.3 Other incentives include: transport allowance of 25% of international transport costs on CIF basis and duty waiver on imports of capital equipment used mainly in the manufacture of exports.

2.5.4 The Government has identified a few shortcomings in the present Act and it has, accordingly, prepared a draft Bill, that is, the Export Incentives (Amendment) Bill which seeks to amend the Export Incentives Act.

## 2.6 Export Processing Zones Act

2.6.1 The provides for the establishment, operation and administration of Export Processing Zones (EPZ). An EPZ is a specialised industrial bonded estate where



specialised facilities and incentives are provided to produce goods under one operation, mainly for export. Customs tariffs are not applied to an EPZ.

- 2.6.2 The incentives for operating in an EPZ in Malawi include zero corporate tax rate, no withholding tax on dividends and no Value Added Tax (VAT). Investors are free to choose a location. Thus, unlike in developed countries, EPZ are not confined to a Government designated geographical area. An EPZ is an area or building declared as such by the Minister, upon recommendation of the EPZ Appraisal Committee.
- 2.6.3 The final authority to issue an export enterprise certificate rests exclusively with the Minister, at his discretion. PPP investors would prefer clear rules and procedures and transparency in this authority. Further, section 10 (5) provides that the certificate is valid for 5 years only. Investors would again prefer a much longer period. PPP investors certainly will need at least 15 years' certificate. It is not difficult to see why there are presently no more than 10 EPZ companies in the entire country.
- 2.6.4 The Government has identified a few shortcomings in the present Act and it has, accordingly, prepared a draft Bill, that is, the Export Processing Zones (Amendment) Bill which seeks to amend the Export Processing Zones Act.

## 2.7 Public Enterprises (Privatisation) Act

- 2.7.1 It is possible, and some countries have succeeded in carrying out a successful privatisation without a specific law. Malawi chose to have a specific law. While the law is critical, of more importance though is a privatisation strategy – encompassing the political will to privatise. That is always the starting point.
- 2.7.2 The Act was enacted in 1996. It clearly states the Government's commitment to reduce Government intervention in business in order to maximize efficiency. In Africa, where political commitment to reforms can sometimes be erratic, it was a good decision to set the rules and regulations in a piece of legislation; also to avoid 'grid-lock' between vested interests and personalities in powerful government circles. The Act has helped to protect the Government politically and, more importantly; it has rendered very difficult any reversals of approach or policy. A similar approach is recommended for PPPs.
- 2.7.3 The Act establishes the Privatisation Commission as the sole authority in Malawi for the implementation of the privatisation programme. The public enterprises earmarked for privatisation are listed in a Divestiture Sequence Plan approved by Cabinet. The scope of the Act extends to PPPs of existing assets, but it is believed that it does not extend to PPPs of new projects. Further, whereas the skills and resources needed to undertake a privatisation program are not dissimilar to those needed in a PPP project, the latter's needs go beyond, especially in the area of contract enforcement and monitoring. The Privatisation

Act is deficient on this, and hence the need for new legislation to cater for the enlarged requirements of PPP projects.

2.7.4 Detailed descriptions of the shortcomings in the Act are available in the Privatisation Strategy Project: Legal Report, June 2004. Shortcomings include a proposal to revisit the policy document to take into account new developments, including an affirmative intention by the Government to promote indigenous Malawi citizens. The Regulations are also being simplified, with some parts relegated to a manual for flexibility. The management and use of proceeds is also being reinforced.

#### 2.7.5 Lessons for PPP Legal Framework

2.7.5.1 The 12 year experience with managing the privatisation process will provide a useful tool in designing an appropriate legal framework for PPPs. Some of the very useful lessons from privatisation in the past decade include the need for a robust public awareness. Unlike with privatisation, where there was no logical framework for an awareness campaign at the beginning, the PPP policy must first address that issue.

2.7.5.2 The policy framework for PPPs must also ensure that there is sufficient political commitment at the highest levels of government. Without it, even if everything is in place, there will be no future with PPP.

2.7.5.3 Finally, the management of the proceeds of PPPs will need to be more accountable and transparent than has been the case in the past.

#### 2.8 Public-Private Partnership Development Bill, 2008

2.8.1 There is general agreement that whilst there is no law against PPPs in Malawi, a facilitative environment cannot hurt. The country currently has [no policy], legislation or institutional framework dealing specifically with PPPs. This notwithstanding, PPPs mostly in the form of concessions and leases have been undertaken primarily, but not exclusively, under the auspices of the privatization program. The absence of a PPP-specific governing framework is not peculiar to Malawi. A number of other jurisdictions have held the view that so long as investments can be made profitably there is no need for any specific PPP legal and institutional framework. For developed countries, this argument may not carry the same relevance as in poor countries. There is no disputing that in developing countries such as Malawi where market-oriented systems are less developed, the private sector is reluctant to undertake PPPs when the legal and policy framework is absent.

- 2.8.2 The PPP-specific legislation would create a comprehensive framework to deal with the entire PPP project lifecycle, provide a direct legal basis for PPP contracts, provide a general framework that specifies the rights of the private sector, clarify the “rules of the game” for various government entities and address some of the concerns of the private sector and the lenders.
- 2.8.3 The Public-Private Partnership Development Bill, 2008 was published on 4<sup>th</sup> July 2008 and it seeks to facilitate the development and implementation of public sector and private sector partnership. In this regard, the Bill aims to utilize PPPs as a tool for procuring and financing infrastructure projects and services in the public sector.
- 2.8.4 Part II relates to the administration for PPP arrangements. The power to control and implement PPP arrangements is conferred on the Privatisation Commission.
- 2.8.5 Part III makes provisions for PPP arrangements in terms of obligations of public authorities, private parties and the type of infrastructure and sectors which may be considered under PPPs
- 2.8.6 Part VI provides for, among other things, settlement of disputes concerning PPP arrangements
- 2.8.7 The Bill has not been processed to finality because the Government has noted a few areas that need improvement. One big question is whether to have the Public-Private Partnership Bill as a stand- alone legislation that makes reference to the Public Enterprises (Privatisation) Act or to incorporate the provisions of Bill into the Public Enterprises (Privatisation) Act.

## 2.9 Exchange Control Act

- 2.9.1 Many advanced economies have virtually abolished the monitoring and controlling of foreign exchange. The Reserve Bank of Malawi continues to perform this function under the aegis of the Act.
- 2.9.2 The Exchange Control Regulations permit any foreign company or person to invest in foreign currency in Malawi, provided the investment is registered with an authorised dealer bank. Registration of foreign capital is essential for purposes of remittance of income and profits.
- 2.9.3 There are no rules regarding the volume of capital. However, investors must make their own independent business judgment. In this regard, a prospective investor would be advised to furnish his authorised dealer bank with his project brief.
- 2.9.4 A foreign investor is free to introduce capital as cash or capital equipment subject to independent clean report valuation by organisations such as SGS. Consumer

goods are not acceptable, and, further, the equipment must be directly related to the proposed nature of business. Technology is also acceptable by converting cost of technology and technology services into equity capital. Debt/Equity swap through the purchase by a foreign investor of a foreign debt in exchange of Kwacha equivalent capital is also acceptable. These in-kind techniques will prove useful in PPPs.

- 2.9.5 Remittance of dividends, or the entire capital on disinvestment, is permissible provided the investment was registered with an authorised dealer bank.

### 3.0 DISPUTE RESOLUTION MECHANISM

#### 3.1 Introduction

3.1.1 The GoM, through the Ministry of Industry and Trade, has embarked on implementing a Private Sector Development Strategy and Reform Programme with a view, among other objectives, of reducing the time taken and the costs required to settle disputes by increasing the use of alternative dispute resolution mechanisms and thereby improving the investment climate in Malawi. While the High Court Commercial Division has made considerable strides in making commercial justice readily available, its major limitation has been a threshold related to the amount of claims it may adjudicate upon (K1,000,000, with a few exceptions) and costs associated with the ordinary litigation process. It has however made great achievements in reducing the time taken to settle commercial matters.

3.1.2 Dispute resolution includes any process whereby parties can bring about the conclusion of a dispute. Techniques of dispute resolution range from informal negotiations between the parties themselves, through increasing formality and more directive intervention from external sources such as court intervention with strict rules of procedure. Alternative Dispute Resolution (ADR) is a term used to denote a range of processes that involve the use of third party, external to the dispute and which can be regarded as an alternative to courts. In Malawi, one form of compulsory ADR that has been integrated into court procedures is mediation. In general terms mediation is a private and structured form of negotiation assisted by a third party. If settlement is reached it can become a legally binding contract. Another known form of ADR is arbitration. Arbitration is a formal, contractual, private and binding process where the dispute is resolved by the decision of a nominated third party, the arbitrator or arbitrators.

#### 3.2 Legal System

3.2.1 Malawi follows the English legal system. There are three types of courts, namely, the Supreme Court of Appeal, the High Court and the Subordinate Courts, in that descending order of seniority.

3.2.2 The Supreme Court is the superior court of record with jurisdiction to hear appeals from the High Court and such other tribunals or courts as Parliament may prescribe. The High Court has unlimited original jurisdiction to hear and determine any civil or criminal proceedings. Subordinate to the High Court is the Industrial Relations Court and (also in process) the Juvenile Court and the Magistrates Courts. The civil jurisdiction of Magistrates' courts is limited, as per the prescription of the Courts Act. Similarly, their criminal jurisdiction is also limited, and they may not try serious offences such as treason, murder or manslaughter.

3.2.3 The Industrial Relation Court has original jurisdiction over labour disputes and such other issues relating to employment. There has been uncertainty whether the High Court has jurisdiction to hear labour disputes as a court of first instance. The matter appears to have been settled in Mkandawire v Council of the University of Malawi Constitutional Civil Cause Number 19 of 2004 (unreported) where the High Court had this to say:

“the High Court has got unlimited original jurisdiction to determine labour disputes and such issues relating to employment but such jurisdiction is not limitless, especially where the Constitution had deliberately put in place an institution such as the Industrial Relations Court to determine employment related matters as a court of first instance”.

3.2.4 The judiciary is headed by a Chief Justice who is appointed by the President, subject to confirmation by two-thirds of the National Assembly. All other judges are appointed by the President on recommendation from the Judicial Service Commission. All judicial officers hold offices until the age of 70, or until removed in accordance with section 119 of the Constitution.

### 3.3 Arbitration and Conciliation

3.3.1 The importance of a fair, efficient and credible process for settlement of disputes is as important to Malawi as it is elsewhere. Granted that litigation can be, and often is, expensive alternative dispute resolution mechanisms are welcome and encouraged in Malawi. The Doing Business Report 2008 compared Malawi to Global best countries. Using three criteria of cost of enforcement, the procedure involved and time it takes to collect debt, Malawi was rated fairly in relative to other comparable countries.

3.3.2 Alternative dispute resolution mechanisms are being encouraged. In this regard, the Courts (Mandatory) Mediation Rules 2004 apply to most civil actions pending before the High Court and subordinate courts, excepting those, for example, relating to the liberty of an individual or interpretation of the Constitution. One of the objectives of the Rules is that 'parties shall strive to reduce cost and delay in litigation, and facilitate the early and fair resolution of disputes'.

3.3.3 According to the Assistant Registrar of the High Court (ADR) the uptake of these Rules has somewhat been slow. He attributes this to reluctance on the legal fraternity to use the mediation process because the fees are lower.

#### 3.3.4 Statutory Arbitration

Most laws in Malawi that establish regulatory bodies for example in water and energy refer certain disputes to arbitration. This is called statutory arbitration. It is conducted in the same manner as any other arbitration subject to reference law.

#### 3.4. Arbitration Act

3.4.1 Parties to a contractual arrangement are free to submit to local or foreign arbitration. Local arbitration is governed by the Arbitration Act, which contains rules on the effect of arbitration, how the arbitrator may be appointed, conduct of the proceedings and effect of arbitral awards. The GoM is bound by any arbitration award. Local arbitration is usually hampered by the absence of qualified and experienced resident arbitrators. An arbitration award is enforceable, with the court's leave, as if it were a judgment of the High Court.

3.4.2 Foreign investment agreements would almost certainly be governed by rules of agencies specifically set up to arbitrate international disputes. Local arbitration may be conducted under the aegis of the Act, though large contracts, such as those relating to PPPs, would almost certainly be governed by rules of agencies specifically set up to arbitrate international disputes. Foreign arbitration awards, in respect of which Malawi is party to the relevant protocol, are fully enforceable, again with the court's leave, as if they were judgments of the High Court of Malawi.

3.4.3 The Act comes into the category of being a law which has been on the statute books for a while, but is generally adequate for the purposes which it serves. Recommendations for change are mainly intended to ensure that the Act reflects current thinking in dispute resolution and also is up-to-date in terms of the international conventions which apply in the field.

#### 3.5 Draft Arbitration Bill, 2010

3.5.1 The draft Bill seeks to repeal the existing Arbitration Act and re-enact the law relating to arbitration. The prime objective of the draft Bill is to put in place a legislative framework that facilitates the fair resolution of disputes by an independent and impartial tribunal without unnecessary delay or expense. The draft Bill has adopted many of the principles of the United National Commission on International Trade Law (UNCITRAL) Model Law while avoiding some of that law's perceived shortcomings.

3.5.2 The draft Bill represents a significant advance in arbitration law. It puts more power in the hands of parties, while at the same time imposing obligations on them and the tribunal to achieve what arbitration was always supposed to be able to do: to provide an efficient and cost-effective means of dispute resolution.

### 3.6 Investment Disputes (Enforcement of Awards) Act [Cap 40:01]

The Act was enacted to make provision for the enforcement in Malawi of awards of the Tribunal of the International Centre for the Settlement of Investment Disputes.

## 4.0 LAWS LAYING OUT FISCAL TAX POLICIES AND INCENTIVES

4.1 This section examines legislation enacted to lay out fiscal tax policies and incentives. Tax is a legally imposed contribution to state revenues, which may be imposed on income or gains, property, goods and services. The incidence of tax may fall upon companies, trusts, individuals or any other person.

4.2 The main taxes applicable in Malawi are income tax, fringe benefit tax, customs duty, excise duty and value added tax

### 4.3 Taxation Act

4.3.1 The Act provides for the taxation of incomes, graduated tax and minimum tax. Under the Act, Malawi citizens, non-citizen residents, individuals and companies are taxed on the basis of income from within or deemed to be within Malawi. For non-residents, whether citizens of Malawi or not, tax is levied on income attributable to a permanent establishment or business in Malawi.

4.3.2 Income tax is assessed on the basis of a person's income. "Income" means the total amount in cash or otherwise, including any capital gain, received by or accrued to or in favour of a person in any year or period of assessment from a source within or deemed to be within Malawi". A person's income tax is, therefore, income excluding any amount exempt from tax under the Act.

4.3.3 The First Schedule to the Act provides a list of incomes generally exempt from income tax. The top rate personal tax rate has been set at 35%, whilst fringe benefit tax has been aligned to the corporate tax rate of 30%. Minimum turnover tax for companies applies when a tax loss has been determined or the computed tax on income is less than the amount payable as minimum tax. This is likely to have a bearing on PPP projects as they will not be expected to be in profitable position in the first few years of their operation.

4.3.4 In Malawi, income tax is collected by 3 methods, that is, Pay As You Earn, Withholding Tax and Provisional Tax.

4.3.5 The Act has already incorporated major tax reforms undertaken in the past 5 to 7 years. It is believed that the major focus of the tax reform should be improving tax administration and enforcement, and that when these are achieved and maintained Malawi will truly become an attractive investment destination.

#### 4.4 Customs and Excise Act and Value Added Tax Act

4.4.1 Customs duty is tax levied on goods imported into or exported from Malawi. The governing legislations are Customs and Excise Act and the Value Added Tax (VAT).

4.4.2 Customs duty is of three types, namely, import duty, excise duty and VAT. Import duty is the duty charged, levied, collected and paid in respect of goods imported into Malawi. Excise duty is the duty charged, levied, collected and paid in respect of some goods imported into, or manufactured, or produced in Malawi. VAT is tax charged levied, collected and paid in respect of goods imported into, or manufactured in Malawi, and specified services supplied in Malawi. These custom duty taxes are levied at specified rates though Malawi is progressively moving towards zero rated taxes in accordance with regional trade agreements/commitments.

4.4.3 In order to fast-track development, Government may wish to review industrial rebate and widen manufacturing machinery under zero rates.

#### 4.5 Treatment of Foreign Nationals/Companies

4.5.1 The income of a foreign national resident in Malawi is taxable, as if he was a national, at the same rate as specified in the Eleventh Schedule to the Taxation Act. The income of a person not being a resident in Malawi, but arising from a source within Malawi, is liable to what is called a non-resident tax at a rate presently at 15% of the gross amount of such income. However, such an individual may claim relief under the 'double taxation' provisions contained in section 122 of the Taxation Act.

4.5.2 All companies are required to pay tax, presently at 30%, except if the company is in an EPZ designated by the Minister or if the company is operating in a priority industry so designated by the Minister. In any case, all companies not incorporated in Malawi pay an additional 5% tax.

#### 4.6 Treatment of Dividends

4.6.1 With regards to dividends, a company incorporated in Malawi pays a withholding tax of 10% of the dividend. The amount of tax so withheld is treated as final tax in



the hands of the recipient; thus he or she is not required to compute it as assessable income for that year. A foreign company, without a “permanent establishment” in Malawi in receipt of a dividend sourced within Malawi would be liable to the non-resident tax imposed by section 76A.

#### 4.7 Tax Incentives available for Infrastructure Projects

4.7.1 The granting of investment incentives is still largely discretionary. The business community would prefer this was replaced by more favourable capital allowances available to all. Take as an example capital allowances on buildings. Currently, commercial premises do not give rise to capital allowances for tax purposes, except for a new building where the cost is over MK100 million. The current position of excluding so many categories of buildings would negatively impact PPPs. At the moment the only buildings/premises that qualify for capital allowances, below the MK 100 million threshold, are those directly used for manufacturing or for warehousing manufacturing-related products that are physically joined to the factory.

#### 4.7.2 Procedures for Modifying Taxes

Most of the tax rates are contained in the Schedule to the Taxation or Customs and Excise Act or the VAT Act, and amendable by order of the Minister as if they were subsidiary regulations

#### 4.8 Procedures for Resolving Tax Disputes

Any person aggrieved by a decision, assessment or determination by the Commissioner General of the Malawi Revenue Authority may lodge an appeal to the Commissioner General, and in that event the burden of proof is on the person aggrieved. Obviously this is an odd arrangement, so the Government has announced its intention to appoint a Tax Ombudsman.

#### 4.9 Comments on the Tax Laws

4.9.1 There are many issues of concern to the private sector about the tax regime in Malawi. First, the levels of tax revenues collected as a proportion of GDP are one of the highest in sub-Saharan Africa, meaning that those that comply are over taxed. As a matter of broad policy, there is need to “increase attractiveness to establish, operate and grow formal tax compliant business sector, and the tax base must be broadened to cover other parts of the economy not presently taxed”.

4.9.2 As well as the structure of the tax, the way tax is administered is also an important area of concern to businesses in Malawi. The bottlenecks include-

- (a) there is need to improve the appeals procedures in the Taxation Act. An appeal advisory team was proposed, but has not been implemented yet. The private sector has welcomed the introduction of commercial courts, better still an interim first appeal process, e.g., Tax Ombudsman;
- (b) in most tax regimes, companies under the same ownership structure are allowed to lump or pool their profits and losses and pay tax on the net result. This is referred to as 'Group Relief'. Group Relief would encourage the development of large companies such as those contemplated in PPP projects in light of the investment requirements needed in the infrastructure services sector;
- (c) Capital Gains Tax (CGT) continues to be taxed in a manner and at a rate similar to trading or employment income in the process scaring away investment in Malawi. This is exacerbated by a CGT rate of 30% which is reportedly much higher than Malawi's neighbours. On average similar taxes are at about 15%. Related to this is the lack of "rollover relief" meaning that the private sector has no incentive to invest in new technology to replace old and obsolete equipment. PPP investors, fearful of unacceptable CGT and in the absence of rollover relief, will choose to modernise their factories and equipment only after the equipment is completely run down. The CGT does not allow an investor to realise the real value of its old equipment.

#### 4.10 Estate Duty Act

4.10.1 The Act provides for duties on estates of deceased persons.

4.10.2 In some jurisdictions where capital gains tax exists, they have done away with the estate duty. The argument is that this penalises innocent individuals whom the deceased wanted to provide for.

#### 4.11 Stamp Duties Act

4.11.1 The Act provides for the imposition of stamp duties, fees and penalties in respect of certain instruments.

4.11.2 The level of stamp duty payable is quite significant. This adds to the cost of doing business in Malawi.

### 5.0 EMPLOYMENT RELATED LAWS

5.1 This section looks at legislation pertaining to employment matters.

## 5.2 Employment Act

5.2.1 The Act was enacted in 2000 replacing five pieces of legislation. Its provisions reflect both international best practice in employment standards and also some of the typical regional variations (such as the establishment of the post of a Labour Commissioner to oversee employment conditions, severance allowances and sick leave entitlements).

5.2.2 The Act provides that an employee's working hours shall be set in the contract of employment. However, no employee other than a guard or other employees exempted by section 38 may work for more than 48 hours per week, excluding overtime. A guard who works more than 48 hours per week shall have those hours treated as overtime, and also provided that the employer will allow such a guard a period of rest where he has worked for six consecutive days.

5.2.3 In general, the Act fairly balances the rights of workers against the requirements of employers to be able to maintain a good degree of flexibility in being able to adjust their workforce numbers in certain circumstances. This is important for investors. The Act was passed with the objective of introducing fairness and equity at the work place as a reaction to the relevant ILO conventions that Malawi had acceded to. The Employment Act was a significant improvement on the Acts it replaced, but, there are still some gaps left.

5.2.4 The Act falls short of elimination of all forced or compulsory labour and is also deficient in elimination of discrimination at the workplace on the basis of emerging issues like HIV/AIDS.

5.2.5 The insolvency laws as applicable to the Act are unrealistic and are unfair to the new investor. Investors would be forced to accommodate employees of a failed undertaking regardless of commercial reality. The Act is considered by some to be extremely generous in awarding employees continuous periods of employment when in effect the employees are not even present and this could have a disastrous effect on Malawi's economy.

5.2.6 Section 32(2) states that where an undertaking or a part thereof is sold, transferred or otherwise disposed of, the contract of employment of an employee in employment at the date of the disposition shall automatically be transferred to the transferee and all the rights and obligations between the employee and the transferor at the date of disposition shall continue to apply as if they had been rights and obligations between the employee and the transferee and anything done before the disposition by or in relation to the transferor in respect of the employee shall be deemed to have been done by or in relation to the transferee. Despite this state of the law, employees almost invariably seek to receive all their

benefits at the time of the transfer. And so although on the one hand the successor organisation is expected to take over all the liability in relation to the benefits payable to the workforce, the labour insist on getting paid.

### 5.3 Labour Relations Act

5.3.1 The Act was enacted in 1996 to replace the outdated Trade Union Act and the Trade Disputes (Arbitration) and Settlement Act. The main objective of the Act is to protect sound labour relations through the protection and promotion of freedom of association. The main sources of the Act are ILO Conventions concerning the freedom of association and the protection of the right to organise.

5.3.2 Generally speaking, most employers consider the Act overly protective of an employee. Investors would not positively view this, as investors are reluctant to invest in a country whereby employees are not easily replaced and/or retrenched as economic conditions or skill needs dictate from time to time. Employees under the Act are believed to be afforded a great level of protection such that the playing field is not considered to be level by employers.

5.3.3 The Act imposes stringent conditions on the employer involved in a trade dispute. Section 25(2) for example allows one-fifth of the workforce to influence issues, for example demand collective bargaining. One-fifth is a rather small threshold and likely to chill investment. Further, section 6 deals with protection of employees. Subsection 2 thereof requires the employer to provide proof that subsection (1) was not breached. The proper legal position ought to be for the employee to prove the breach on a balance of probabilities.

### 5.4 Treatment of Retrenchment

5.4.1 In Malawi, the formal business sector believes that the Employment Act has been drafted with interests of the employee in mind, and at the peril of the employer or investor. As a result of the Act, the employer finds labour issues very costly in Malawi. The following matters illustrate the point-

- (a) as a result of the Act, where an undertaking is disposed, a new investor is forced to take on the employees whether or not they fit into his plans. If he decides to lay off some or all, he has to pay severance allowance; and
- (b) the Act makes provision for the payment of employee's remuneration benefits even when the company is insolvent.

5.4.2 Treatment of retrenchment benefits continues to be dicey, but is governed by either the terms and conditions of service or the Act. Section 35 and the First Schedule to the Act describe the severance allowance payable. The High Court

in Japan International Co-operation Agency v Jere Civil Cause Number 25 of 2002 (unreported) justified the severance allowance in the following words:

“In effect section 35 compels employers to recognise the commitment and the valuable contribution which employees make to the work they do. Clearly the provision protects employees from being told to go with one’s month’s pay after working for an employer for a considerable number of years. Section 35(1) is meant to protect employees who have long served their masters and puts a stop to exploitation”.

## 5.5 The Employment (Amendment) Act

5.5.1 Malawi has recently been enacted the Act to address some of the issues raised under section 5.4.1.

5.5.2 The Act amends section 35 of the Employment Act and the First Schedule to the Act in order to clarify the circumstances in which severance allowance is payable. Under the new section 35(1), severance allowance will only be payable where a contract of employment is terminated-

- (a) as a result of redundancy or retrenchment;
- (b) due to economic difficulties, technical, structural or operational requirements of the employer; or
- (c) upon the unfair dismissal of the employee by the employer

5.5.3 The Act has also inserted a new section 35A to make provision for gratuity entitlements for the category of employers who are exempted from providing pension benefits to their employees under the proposed pension legislation(Pension Bill, 2010).

## 5.6 Social Safety Net Provisions

There are no social protection mechanisms in place presently, though at an informal level some companies have offered employees affected by retrenchment some counseling and training. A Social Action Plan is being contemplated.

## 5.7 Workers Compensation Act

5.7.1 By virtue of the Act, an employer is liable to compensate an employee if an injury, other than the contraction of a scheduled disease, arises out of and in the course of his employment.

5.7.2 The Act also provides for the establishment of a Workers Compensation Fund administered by the Labour Commissioner. The Commissioner announced a few years ago the establishment of the Fund, but employers have yet to start making contributions. The safest and reasonable thing to do is to procure workers compensation insurance.

## 5.8 Immigration Act

5.8.1 The Act came into force in 1964 and it regulates the entry of persons into Malawi, prohibits the entry into Malawi of undesirable persons and makes provision for the deportation from Malawi of undesirable persons.

5.8.2 The Act is an old piece of legislation and some of its provisions do not match the present social and economic environment. It, therefore, needs a complete overhaul. UNESCO is promoting best practices in migration on the strength of two themes: to fight against irregular and exploitative migration and to promote 'brain gain', as opposed to 'brain drain'. The review of our Immigration Act should be undertaken with the above themes in mind. Subject to the overriding issue of national security concerns, the revised Act should address with more clarity and fairness the following issues:

- (a) universal human rights;
- (b) access to justice for those persons subject to decisions under the law; and
- (c) facilitation of entry to those persons providing or implementing FDI projects and transactions in Malawi.

## 6.0 WATER SECTOR LAWS

6.1 The main relevant bodies responsible for the water services in Malawi are the President, the Minister, Ministry of Water Development, the Water Boards and the Ministry of Health. The roles and interrelationships of the various players are not very well defined. For instance, the responsibility for tariff approvals hovers from the Ministry responsible for Statutory Corporations and the Ministry of Water Development. In the urban areas, the provision of municipal services is vested with the City Councils while at the district level it is central government or the district council itself.

6.2 There are many pieces of legislation governing this wide area, including the Water Resources Act and Waterworks Act.

## 6.3 Water Resources Act

6.3.1 The Act was enacted in 1969.

### 6.3.2 Basis Principles

6.3.2.1 The Act contains two basic principles, that is, the ownership of all public water is vested in the President and the right to divert, dam, store, abstract public water is subject to the grant of a formal water right.

6.3.2.2 No person can acquire any right or title by a prescriptive claim to the use of water or by way of conveyance, lease or other instrument. Rights, which are for specific purposes and fixed duration, can be acquired only by way of a water right granted by the Minister.

6.3.2.3 The control of all public water is vested in the Minister and he is under a statutory duty to exercise his powers in accordance with the Act

### 6.3.3 Water Resources Board

The Act establishes the Water Resources Board whose functions, subject to any specific or general directions of the Minister, include-

- (a) advising the Minister in respect of applications for the grant of a water right;
- (b) creating, where appropriate, relevant easement over land in order that a grant of a water right may have the beneficial enjoyment of such a right;
- (c) monitoring the construction of any approved works associated with the grant of a water right;
- (d) entering onto land, at all reasonable times, for the purposes of making such surveys and undertaking investigations as the Board considers necessary in the interest of the conservation and the best use of water in Malawi; and
- (e) publishing applications for water rights and inviting objections (if any), adjudicating on the objections and determining issues of easements and ensuring that a copy of any such statutory easement has been given to all persons known to have an interest in the land and to the Deeds Registrar

#### 6.3.4 Variation of Water Rights on Account of Drought, etc

6.3.4.1 The Act, in section 11, empowers the Minister to vary or suspend water rights where in his opinion the supply of public water is insufficient or is likely to become insufficient. The duty on the Minister is to serve notice in writing on the holders of the water rights affected. There is no right to compensation in respect of any variation or suspension under section 11.

6.3.4.2 The Minister may by notice addressed to the holders of any water right, determine or demise such a right when the Minister is satisfied that public water is required for a public purpose. The term “public purpose” is not defined in the Act.

6.3.4.3 The holder of any right adversely affected by the determination or diminution is entitled to compensation in respect of such loss. If there is failure to agree on the quantum of such compensation, the issue may be referred to the High Court.

6.3.4.4 If during a period of 2 years or greater no beneficial use has been made of a water right, the Minister may, having regard to the investment in the associated capital works and the long term national interest, serve notice, on the holder of a water right, of determination of the water right or declaring the right diminished or modified to the extent as specified in the notice.

#### 6.3.5 Controlled Areas

6.3.5.1 Section 22 empowers the Minister, in the public interest, to designate any part of Malawi to be a controlled area for the purposes of the Act, namely, controlling, conserving, and apportioning, between conflicting interests/priorities, the optimum utilization of the water resources of Malawi. Within any such “controlled area”, the Minister may establish a comprehensive scheme for the development of the natural resources of the area, and may create an authority for the purpose of the administering the natural resources of the area.

6.3.5.2 Although the Act does not require consultations, it is considered good practice for extensive consultations to take place with interested parties prior to any determination of a “controlled area”.

#### 6.3.6 Penalties

The Act prescribes a number of offences and the sanctions in relation thereto. It is important to take into account the impact of inflation on the deterrent nature of penalties.

#### 6.4 Waterworks Act



- 6.4.1 The Waterworks Act seeks to facilitate the establishment of water boards and water areas, ensure proper administration of such water areas and provide for the development, operation and maintenance of waterworks and waterborne sewerage sanitation systems.
- 6.4.2 The Act confers a range of extensive powers on the Boards to plan, construct, maintain, enlarge waterworks and works associated therewith. The Boards have powers to carry pipes or other equipment, required for the purposes of planning, constructing, maintaining, enlarging any works, through or over land subject to-
- (a) the requirement of sections 37,38 and 39 of the Public Roads Act relating to prior consultation with Highway Authority. Failure to observe the requirements of the Public Roads Act by either the Board or any contractor of the Board can result in financial penalties being levelled on the Board;
  - (b) prior notice of the intended works, for which entry is requested, has been given to the owner and occupier of the land and falling consent to enter, notices have being published in accordance with section 12 at least a month before entry with intent to carry out the specified works.
- 6.4.3 Powers of entry are conferred by section 14 to employees of the Board or to a duly authorised agent to enter onto land for the specific purpose of surveying, setting out and marking the line of any pipe or works.
- 6.4.4 Powers to Suspend, etc., Supplies
- 6.4.4.1 Notwithstanding the duties to supply water, the Board is given wide powers to reduce, suspend, stop or divert supplies of water. Such action by the Board is without prejudice to any water rate, meter rent or other sums due or to become due under the Act.
- 6.4.4.2 The powers can be exercised without the prior approval of the Minister and any order from a court.
- 6.4.4.3 The Act is silent on the question of restoration or continuation of supply of water or of sewerage services.
- 6.4.4.4 Section 52 of the Act places a duty on a new occupier to inform the Board on change of occupancy and failure is met with a penalty. It is recommended that the burden be on the person moving out. If this were introduced and adhered to the previous owner would report his departure to the Board who would in turn ensure that the water is disconnected. The new owner would need to fill out a form to have the water reconnected.

## 6.5 Irrigation Act

6.5.1 The Irrigation Act was enacted in 2001 but it has yet to come into operation (No Notice of Commencement has been issued). The Act makes provision for the sustainable development and management of irrigation.

### 6.5.2 National Irrigation Policy

Part II relates to the National Irrigation Policy. The Policy ranks paramount in the business of the Government and as such all public officers and authorities are required to act with due diligence and dispatch intaking action necessary to give effect to the Policy.

### 6.5.3 Malawi Irrigation Board

Part III establishes the Malawi Irrigation Board . The functions of the Board are set out in Part IV and these include-

- (a) advising Government and other stakeholders on policy matters relating to irrigation and drainage;
- (b) approving standards and guidelines for the development and management of irrigation and drainage;
- (c) acting as a forum for information sharing;
- (d) conducting inquiries;
- (e) exercising authority affecting registration of irrigation consultants; and
- (f) promoting and maintaining co-operation in irrigation and drainage with similar bodies in other countries.

### 6.5.4 Irrigation Fund

Part VI establishes the Irrigation Fund whose main object is the development and management of irrigation and drainage. The Fund may be applied for the purposes of, among other matters-

- (a) financing by way of loans or grants any research or study carried on, by or for the benefit of persons or organizations engaged in irrigation and drainage; and

- (b) paying the cost of any irrigation scheme which the Minister, on the recommendation of the Board, considers to be in the interest of the development and management of irrigation and drainage.

#### 6.5.5 Local Community Participation

6.5.5.1 Part VII relates to local community participation in development and management of irrigation and drainage. Section 35 empowers the Minister to enter into an irrigation management agreement with an irrigation authority providing for a management plan and assistance to be provided by the Government.

6.5.5.2 “irrigation management authority” is defined as any local community organization established for the purpose of promoting local participation in the development and management of irrigation and includes any irrigation scheme, club, cooperative or association.

#### 6.5.6 Incentives to Farmers

Section 37 provides that the Minister shall, on the recommendation of the Board and in consultation with the Minister responsible for finance, determine fiscal incentives for the promotion of irrigation farming and such other measures as may be necessary for preventing the failure or non-viability of irrigation farming.

#### 6.5.7 Rectification Order

Section 38 empowers the Minister to issue a rectification order against any person whose acts or omissions have or are likely to have adverse effects on a public watercourse. The order may also specify how expenses in respect of rectification measures are to be apportioned amongst the users of the public watercourse.

#### 6.5.8 Registration of Irrigation Consultants

Part VIII prohibits persons from engaging as irrigation consultants unless they are registered as such under the Act. A person qualifies to be registered as an irrigation consultant if the person is not less than 25 years and either-

- (a) passed a qualifying examination approved by the Board and has not less than 3 years post qualification practical experience in the work of an irrigation consultant; or
- (b) satisfied the Board that he possesses a qualification which, in the opinion of the Board, furnishes sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of the work of an irrigation consultant.

### 6.5.9 Offences and Penalties

6.5.9.1 Part IX deals with offences and penalties. Section 45 makes it an offence to willfully damage irrigation canals, drains or associated infrastructure. It is also an offence for a farmer to fail to maintain irrigation canals, drains or associated infrastructure in his agricultural holding if the holding is within a communal irrigation scheme.

6.5.9.2 The following are also offences-

- (a) engaging in practices which are destructive to the catchment area of a river or public watercourse supplying water to an irrigation scheme or farm;
- (b) permitting livestock to graze, otherwise as prescribed by the Minister, in dambo areas under irrigation;
- (c) setting on fire crops in an irrigation scheme or farm;
- (d) refusing to assist in averting, fighting or extinguishing a fire in an irrigation scheme or farm
- (e) grazing livestock or permitting livestock to encroach upon any irrigation scheme or farm on which there is a crop which has not been harvested;
- (f) applying on an irrigation scheme or farm any chemical or substance that has been prohibited by the Minister by notice published in the Gazette.

### 6.5.10 Regulations

Section 55 allows the Minister to make regulations. Matters that may be covered in regulations include-

- (a) the manner of and conditions for recognition by the Government of associations and other bodies engaged in irrigation and drainage;
- (b) the procedure to be followed in handing over existing Government smallholder irrigation schemes to local communities and these schemes are listed in the Schedule to the Act; and
- (c) the management of irrigation schemes.

## 7.0 LAND RELATED LAWS

7.1 The relevant land laws in Malawi are the Land Act, the Registered Land Act and the Land (Amendment ) Act 2004.

### 7.2 The Land Act, Cap 57:01

7.2.1 The Land Act was enacted in 1965 replacing the Land Ordinance Act of 1951. The Act provides a general legal framework for land in Malawi and enunciates the policies that were then in place. It describes the different land holding systems. Like its predecessor, the Act categorises land into three types of land-

- (a) private land, that is, land owned, held or occupied under a freehold title, or a leasehold title, or a Certificate of Claim;
- (b) public land, that is, all land which is occupied used or acquired by the Government and any other land not being customary or private land; and
- (c) customary land, that is, all land which is held, occupied or used under customary law, but does not include public land

7.2.2 In essence, however, there are two practical categories because customary land is like a species of public land and as such one cannot claim individual or private ownership over it. While the Act does not provide a comprehensive definition of land, it defines customary land as the undoubted property of the people of Malawi vested in perpetuity in the President. The Act restricts the rights over customary land to occupational rights or rights of use only.

7.2.3 Under the Act, the Minister can grant leases to an individual to use the land as private land only for purposes prescribed in the lease. The lease cannot be assigned without prior permission from the Minister. The Minister can unilaterally raise the rent upon giving six months notice. A 2004 amendment puts a restriction on the sale of land to foreigners by according priority to buy land to Malawians.

### 7.3 The Registered Land Act, Cap 58:01

7.3.1 The Registered Land Act was enacted in 1967. The main objective of the Act was to simplify the registration of rights and interests in land and provide a comprehensive regime of how such rights and interests can be used for commercial and investment purposes.

7.3.2 In its initial stage, the Act applied only to Lilongwe West but was later extended to apply to Blantyre City, Lilongwe City, Zomba Municipality (now City), Mzuzu City.

7.3.3 The registration of rights and interests in land under this Act is simpler than under the deeds registration system and is convenient for investment purposes, but could still be improved.

#### 7.4 Customary Land (Development) Act, Cap 59:01

7.4.1 The Act was enacted in 1967. The purpose was to ascertain individual rights in customary land so that the same can be translated into private ownership capable of being registered as such under the Registered Land Act.

7.4.2 Like the Registered Land Act, the Customary Land (Development) Act was initially applied experimentally to Lilongwe West only. The application of the Act was never extended to other parts of the country.

7.4.3 The Act provides a fairly comprehensive scheme of ascertaining rights and interests in customary land before a person can be registered as a private owner of that land.

7.4.4 The Act has now been administratively abandoned and as a result much customary land is yet to be translated into more secure private ownership.

#### 7.5 Land Acquisition Act, Cap 58:04

7.5.1 The Land Acquisition Act was enacted in 1971 to provide for acquisition of land by the Government for public purposes. The Act provides for a compensation to be assessed by the Minister whose decision is final and not subject to review by, or appeal, to any court of law.

7.5.2 The need for a legislative framework providing for compulsory acquisition of land by the Government cannot be dispensed with. The critical issue is for the acquisition procedure to be fair and reflect respect to a person's constitutional right to acquire and hold property. Additionally, the provision that the Minister's decision cannot be challenged in a court of law must now be suspect in view of the Republican Constitution that guarantees every person access to justice.

#### 7.6 Conveyancing Act, Cap 58:03

7.6.1 The Conveyancing Act was enacted in 1952. It incorporates the Conveyancing Act, 1911, of the United Kingdom as being applicable to Malawi.

7.6.2 The procedure for conveyancing under the Conveyancing Act is cumbersome, complicated and expensive. It is an outdated legislation that needs a complete overhaul so that an efficient and cost-effective framework is put in place.

#### 7.7 Land (Amendment) Act, 2004

7.7.1 The high quality investors that Malawi hopes to attract through PPPs are those likely to invest long term for purposes of constructing national infrastructure like factories, roads, airports etc. Such exercises require significant investment in land, so the legal regime that controls rights to land will be of interest to them.

7.7.2 Many private sector investors have expressed concern with the promulgation of the Land Amendment Act 2004, which has introduced significant changes in the management of land. The changes include reducing the 99 leasehold tenure to 50 years and not permitting non-nationals to own freehold land. This is perceived by many foreign investors as a deterrent to investment in industries with long gestation periods. However, it is worthy noting that the land policy encourages noncitizens wishing to invest in freehold land to do so in joint venture with citizens of Malawi as part of the Government's economic empowerment initiative.

7.7.3 Section 24D stipulates that where freehold land is held by a person who is not a citizen of Malawi for a continuous period of more than two years and during that period such person has not shown or effected his intention to develop the land, the Minister may demand voluntary surrender of the land within a period of ninety days. The new provision appears to discriminate against non-citizens.

7.7.4 Section [24A(l)] of the Land Act Regulations, provides that a lessee may not transfer or otherwise dispose of any portion of leasehold property without first obtaining written consent from GoM. Similarly, Section 24A of the Land Act requires anyone wishing to offer for sale any private land to give 30 days written notice to the Minister of Lands. These take time to process and they add to the cost of doing business.

7.7.5 In summary, the position relating to ownership of land by foreigners is as follows-

- (a) future ownership of freehold land by foreigners is frozen;
- (b) noncitizens and foreign companies are permitted to lease land but the lease tenure shall not exceed fifty years;
- (c) foreigners interested in freehold status are encouraged to enter into joint ventures with citizens; and
- (d) non-citizens owning freehold land are encouraged to obtain Malawi citizenship in order to retain freehold status.

## 7.8 Expropriation powers

The Government has power to convert any customary land to public land in accordance with section 27 of the Land Act. The Government may not compulsorily acquire private land, except in the case of leasehold land where the lessee chooses to surrender his interest. Since a PPP investor would have private land interests either as a freehold or leasehold owner, there is no risk of the Government compulsorily acquiring his land.

## 7.9 Special Law Commission on Land Related Legislation

7.9.1 Malawi has recently adopted a new land policy that 'reflects the imperatives of changing economic, political and social circumstances'. The new land policy together with a new Land Act (proposed) attempts to 'democratise the management of land'

7.9.2 Some of the main constraints and challenges that have necessitated a wholesale reform of the legislative framework of land and related matters include-

- (a) traditional or customary land rights are not recognized;
- (b) the re-allocation of customary land has been incomplete;
- (c) under-investment in land;
- (d) restrictive application of pro-economic development land laws;
- (e) bureaucracy and inefficiency in the administration of land matters;
- (f) complexity of land transactions;
- (g) over-fragmentation of land laws as there are numerous pieces of legislation all dealing with land or land matters;
- (h) lack of transparency in the management of customary land rights; and
- (i) the institutional and regulatory framework for the control of land use and management has been less than satisfactory and in other cases a complete failure: the Government is developing a Land Use Planning and Development Control Policy that will attempt to address issues of land use and development as outlined in the National Land Policy. This is a welcome development.



## 8.0 LAWS RELATING TO AGRICULTURE

### 8.1 Agriculture (General Purposes) Act, Cap 65.05

8.1.1 This Act seeks to make miscellaneous provisions for the general regulation of the agriculture industry. The Minister is empowered to regulate those activities in the agriculture industry not otherwise regulated by or under any other written law. The law regulates such areas as licensing of buying, selling or otherwise marketing of agricultural crops.

8.1.2 Section 3(2)(c) empowers the Minister to set a minimum or maximum price payable to producers of agricultural crops. In a liberalised environment, these types of legal provisions would beg the question as to what would happen if those buying, as has happened on many an occasion, simply do not abide by the set prices? Probably the more effective way of safeguarding the interests of the smallholder producer lies in ensuring that competitive forces are at play all the time.

### 8.2 Agricultural and Livestock Marketing Act, Cap 67.01

8.2.1 This Act consolidates the law relating to the marketing of cotton, livestock and produce. No person can buy or sell any produce or livestock specified under the Act in a declared area without a licence.

8.2.2 Section 5(1)(a) empowers the Minister to exempt any person from the requirement to hold a licence. Additionally, the Minister may under section 5(1)(b) order the sale or purchase of specified produce or specified livestock to or by any person at any time. There is no provision detailing the circumstances under which the Minister may exercise these powers. It is suggested that such discretionary powers be dispensed with unless specific circumstances are envisioned deserving of such special treatment. In that case those circumstances should be outlined in the legislation so as to limit the risk of the discretion being abused and also assure investors that similar cases will be treated in the same way.

### 8.3 Fertilisers, Farm Feeds & Remedies Act, Cap 67.04

8.3.1 The Act seeks to provide for the regulation of the sale and distribution of fertilisers, farm feeds and remedies.

8.3.2 Section 6 allows the Minister to exclude any fertilizer, remedy or farm feed from the application of the provisions of the Act. There is no provision detailing the circumstances under which the Minister may exercise this power. It is suggested that such discretionary powers be dispensed with unless specific circumstances

are envisioned deserving of such special treatment. In that case those circumstances should be outlined in the legislation so as to limit the risk of the discretion being abused and also assure investors that similar cases will be treated in the same way.

#### 8.4 Farmers' Stop Order Act, Cap 63.03

8.4.1 This Act seeks to provide for the regulation of Farmers' Stop Orders. For a stop order to be valid it needs to be registered with the Registrar General's office and it remains valid for the period stated therein.

8.4.2 Although the provisions of the Act seem to be restricted to farmers, these provisions would be of equal benefit to other trades as well. It is thus recommended that the import of this Act should be changed to a general one instead of it being limited to crops and farmers. At a minimum it should cover other agricultural ventures such as animal husbandry, as a form of security; this would help other entrepreneurs to access financial facilities.

#### 8.5 Hide and Skin Trade Act, Cap 50.02

8.5.1 This is an Act that provides for the regulation of the trade in hides and skins. There is need for a buyers' licence for anyone who wishes to buy hides and skins for resale within or outside the country. The premises at which a holder of a licence wishes to dry the hides and skins need also to be registered with the Minister.

8.5.2 Through a proviso to section 3(1), the Minister is empowered to exempt any person from the need to hold a licence. As discussed above, the circumstances under which this power can be exercised need to be given. In the alternative, the Minister should be required to give reasons for coming to his decision to exempt any person from the application of the Act. Otherwise, such power could be subject of abuse.

8.5.3 Section 17 requires a separate licence for each set of premises to be used by a buyer or exporter. This requirement is cumbersome and places undue load on the licensee adding to the cost of doing business in Malawi. It should suffice to licence the person or organisation and thereafter stipulate as a condition of the licence the type of premises on which the licensee can undertake the business. If the premises do not meet the stipulated standards, the Licensing Authority could give notice for the licensee to remedy the shortfall failing which the licence can be revoked. The licensee should be required as is already the situation under section 13 to simply register the premises at which he proposes to undertake his business.

#### 8.6 Control of Diseases of Animals Act, Cap 66.02

8.6.1 The Act requires that animals which are diseased be separated from those not so affected and a report filed with the Inspector or police officer. In addition the Minister of Agriculture has powers to make orders and declarations regarding infected, diseases and animals.

8.6.2 Sections 18(2) and 22 prescribe penalties. These penalties may have been punitive at the time that they were prescribed. However, in an inflationary economic climate, these amounts are so low that they mean very little. It is suggested as a general point that the respective laws should only prescribe the fact that penalties will be payable for certain offences. However, the exact amount should be reserved to the Minister to prescribe from time to time through the promulgation of regulations.

#### 8.7 Fisheries Conservation and Management Act, Cap 66.05

8.7.1 Under the Fisheries Conservation and Management Act, the law provides for the regulation and control of fishing, and of the purchase, sale, marketing, processing, import and export of fish. It also provides for the conservation of fish. No person shall engage in any class of fishing for which a licence is required unless he is a holder of valid licence appropriate to such fishing.

8.7.2 Section 59 empowers the Minister to exempt any person from the application of the any provision of the Act. As discussed above, the circumstances under which this power can be exercised need to be given. In the alternative, the Minister should be required to give reasons for coming to his decision to exempt any person from the application of the Law. Otherwise such power could be subject of abuse.

#### 8.8 Meat and Meat Products Act, Cap 67.02

8.8.1 The Act provides for the improvement and control of the production, processing, manufacture, grading, sale, marketing and distribution of meat and meat products.

8.8.2 Section 4(1) empowers the Minister to make regulations for the better carrying out of this Act. The Minister can under powers in paragraph (m) and (n) prescribe that no one should import into or export from Malawi or sell any meat products. However, in both cases, the law gives the Minister the power to exempt certain individuals or organisations. Neither the principal legislation nor the Regulations made under it mentions the circumstances under which the Minister may provide this exemption. It is critical that playing field is level. Thus it would be providing one party with undue advantage if that party did not have to get permission whilst everyone else needed one. It is recommended that either everyone should be required to secure the licence or alternatively the

circumstances under which the Minister may exempt someone should be clearly articulated.

#### 8.9 Protection of Animals Act, Cap 66.01

8.9.1 Under this Act, it is an offence to cruelly ill-treat an animal, or carry an animal in such a manner or position as to cause that animal unnecessary suffering.

8.9.2 Section 3(3) makes references to the Cruelty to Animals Act, 1876, of the United Kingdom. It is suggested that appropriate changes to our law be undertaken so that such reference be deleted and the Act can be updated as may be appropriate.

#### 8.10 Slaughter of Cattle Act, Cap 50.04

8.10.1 This Act provides for the control of the slaughter of cattle and prohibits the slaughter of immature and female cattle unless such slaughter is authorised by the Inspector.

8.10.2 This Act seeks the growth of the cattle population in Malawi. It is suggested that similar provisions should be enacted for the protection of other domesticated animals such as goats, sheep and pigs.

8.10.3 Theft of animals is probably Malawi's biggest challenge in as far as the growth of the animal industry is concerned. This needs to be tackled if farmers are going to be motivated to take the rearing of animals as a serious business proposition. It is suggested that some form of titling of animals be introduced that would ensure some level of protection. No animal would then be slaughtered without such a title. It is understood that similar enactments have been in use in Botswana for a very long time with some measure of success.

#### 8.11 Milk and Milk Products Act, Cap 67.05

8.11.1 This piece of legislation provides for the improvement and control of the production, processing and marketing of milk products.

8.11.2 Section 3(1)(b) empowers the Minister to fix prices to be paid for any grade or type of milk or milk product to producers, manufacturers, processors, distributors, or sellers. In a liberalised economic environment, we wonder whether this type of legal provisions have continued relevance.

#### 8.12 Crocodiles Act, Cap 66:06

8.12.1 This is an Act to provide for the control and protection of crocodiles including the regulation of the hunting, trading and rearing of crocodiles.

8.12.2 Section 4(2) gives the Minister the discretion to issue or refuse to issue a licence under the Act. He may also attach any conditions as he may deem necessary or expedient. In this report, we have repeatedly expressed the view that the sort of discretion that Section 4(2) grants to the Minister does not reassure investors. Investors are always weary that a Minister may exercise such discretion to the advantage of a particular investor. This in turn will have the effect of tilting the playing field against all other investors in that sector. We thus recommend that if any discretion is to be given to the Minister, the law should articulate the circumstances in which such discretion will be exercised. This would at least assure investors that every investor meeting the prescribed eventualities will be treated equally.

8.12.3 The view in paragraph 8.12.2 also applies to section 6 which allows the Minister to cancel a licence without assigning any reasons therefor. In today's Malawi, those in authority must be prepared to be held accountable for their actions. Provisions such as the one under reference do not bode well for the building of confidence in investors. If they are to be expected to make serious investments they should have security of tenure. To be sure, it should be possible for licences to be cancelled. However, this should only happen in instances prescribed by the law. This discretion should thus be abolished.

#### 8.13 Plant Protection Act, Cap 64.01

8.13.1 The Plant Protection Act provides for the eradication of pests and diseases destructive to plants to prevent the introduction and spread of pests and diseases destructive to plants.

8.13.2 Owners of land owe a duty to ensure that they take all measures as are reasonably necessary for the prevention, eradication, reduction or prevention of the spread of a pest or disease which the Inspector may order him to take.

#### 8.14 Noxious Weeds Act, Cap 64.02

8.14.1 In order to ensure the eradication of noxious weeds, it shall be the duty of every person responsible under this Act, to clear or cause to be cleared any noxious weed growing or occurring on the land in respect of which he is responsible.

8.14.2 Under section 15, the Minister upon giving 30 days notice in the Gazette, declare a plant to be a noxious weed. Some plants are so destructive that we do not believe that it is reasonable to have to wait for thirty days before making the declaration. If there is scientific evidence to support the conclusion that a plant is a noxious weed, probably whilst the notice is necessary, it the Minister should proceed to make the declaration with due despatch.

#### 8.15 Special Crops Act, Cap 65:01

8.15.1 The Act provides for the development and marketing of special crops. Until recently, the special crops included sugarcane, coffee and tea. When a crop has been declared a special crop, and an Authority has been established in such an area, no person can grow or sell that special crop without a valid licence.

8.15.2 Section 4 of the Act empowers the Minister to designate a crop a special crop. Upon that happening he has to establish an Authority to promote the development of that particular crop. The major premise of the Act seems to be that a crop can only be promoted through the creation of an Authority. With the knowledge that we now have that most of these Authorities were inefficient and expensive, we suggest that the Act be amended to allow the Minister the freedom to designate any organisation probably through competition to take charge of the responsibility to promote the chosen crop. For instance, if the GoM decided to promote paprika, it could designate ARET or Cheetah Malawi Limited to undertake this exercise against the achievement of pre-agreed key performance indicators.

#### 8.16 Cotton Act, Cap 65.04

8.16.1 The Cotton Act was enacted in 1951, as a piece of legislation consolidating the law relating to the production, processing and marketing of cotton. It requires that cotton shall not be grown except from approved seed. Additionally, the ginning of cotton can only be done under licence.

8.16.2 Cotton is predominantly grown by the smallholder sector, which accounts for well over 98% of the market. By early 1990's, cotton production had declined to approximately 20% of the peak production attained in 1986. The decline has been attributed to many factors including the structure of the industry, the dominance of the public sector in the purchasing of cotton and decreasing smallholder productivity. In order to address the decline in production, the Government has designated cotton a strategic crop together with tobacco. To that end, the Government is offering substantial free subsidies in the form of cotton seed and chemicals to a large number of farmers. On its part the private sector, led by the cotton ginneries, established a Cotton Development Association (CDA) in 2003. The impact was phenomenal: cotton production trebled.

8.16.3 The cotton ginneries, through the CDA, have invested substantially in crop development, but continue to bear the risk of freeloading by third party buyers and loan avoidance by the smallholder farmers. The third party freeloading (also called side-selling) and the loan repayments defaults could be curbed if an appropriate legal and regulatory framework existed. Mechanisms must be established that will guarantee that those investing in the industry benefit from it. In this respect the Cotton Act has outlived its usefulness. Although, section 9 prohibits the ginning and baling of cotton except under licence, this provision has not been fully implemented. As noted above, side selling has become rampant.

8.164 One of the means of promotion of the growth of the industry is most probably the speedy promulgation of a proposed Cotton Bill into law. Among other things, the Cotton Bill will establish a Cotton Council (the equivalent of the Tobacco Control Commission) with comparable powers such as those granted to the Tobacco Control Commission. The Government has expressed willingness to deal with a representative association of the industry and is, therefore, prepared to lend its weight to a speedy enactment of the relevant regulatory law.

In order to establish an appropriate framework, there are several options to choose from. One suggestion is to establish a contract farming regulatory body that will utilize either a closed market or open market system. The CDA appears to prefer a pooled input system for all players or a concession system as is the case in Mozambique. Whatever the final option, players in this market are asked to recognise the likely continued role of the Government in regulating the industry in order to promote for example food security. In a fully liberalised market, a subsidy has no role to play. The fact that subsidies are a permanent feature of the cotton industry is enough manifestation that the sector cannot be fully liberalised. It should come as no surprise, therefore, why the Government feels obligated to dictate producer prices. The Government welcomes a more proactive participation of the private sector in collaboration of acceptable producer prices. The CDA would hope that once a Cotton Council is established it would take over the responsibility of determining the producer prices by use of internationally acceptable parameters, and in consultation with all stakeholders. It is also being recommended that once the Cotton Council is established, it should promulgate a Code of Ethics to govern all the players in the market. The cotton industry faces a bleak future with little or no growth in production unless and until a regulatory framework is in place.

8.16.2 It is said that ownership of ginneries could be an impediment to the opening up of the cotton industry in that those who would like to buy cotton from smallholder farmers are unable to get it ginned. And yet the more buyers of raw cotton there are, the higher will be the competition and the more options in terms of outlets there will be to the smallholder farmer. The existence of such competition could mean better prices. It may thus be beneficial for the Minister or other regulator to have the power to intervene if there is predatory pricing that seeks the exclusion of other players in cotton marketing.

8.16.3 Additionally, it may be helpful to disaggregate the industry by ensuring that those with ginneries are different from those who participate on the buying of cotton. It would be in the interest of the ginnery owners to process as much cotton as possible. In turn, this would make it easier for new entrants to come into this sector with fairly little capital. In this way, the barrier to entry will have been removed.

8.17

### Control of Tobacco Auction Floors Act, Cap 65.03

8.17.1 The Act provides for the establishment of the Tobacco Control Commission (TCC) which is empowered to control the tobacco auction floors. No one is allowed to participate in the purchase of tobacco on the auction floors without a licence issued by the Minister of Agriculture.

8.17.2 The number of tobacco buyers on the auction floors would influence the prices offered to tobacco growers. This, in part, is a function of the number of processors that can open their factories to those who have buying licences. Put differently, it would benefit those who have processing plants and also hold buying licences on the auction floors to shut out the competition by denying them access to the processing plants. In the circumstances, it may be helpful to disaggregate the industry by ensuring that those with processing plants are different from those who participate on the auction floors.

### 8.17 Tobacco Act, Cap 65.02

8.17.1 The Tobacco Act was passed in 1970 to consolidate the law relating to the production, manufacture and marketing of tobacco in Malawi.

8.17.2 In terms of the Act, no person may grow tobacco in a scheduled area unless he is registered. The scheduled area encompasses the whole of the Northern, Central and Southern Regions of Malawi. Similarly, no person may sell his or her tobacco without first producing to the buyer a valid certificate of registration. This certificate is personal to the holder so that he or she may not assign or transfer it.

8.17.3 Under the Tobacco Act, the selling of tobacco elsewhere other than at an auction floor licensed under the Control of Tobacco Auction Floor Act is prohibited, except that ADMARC, or a person licensed under Part VI of the Tobacco Act, may buy elsewhere other than at an auction. In view of the restructured ADMARC, there is little or no merit in maintaining this exception. Further, it is also suggested that in order to alleviate the hurdles that smallholder farmers face to take their crop to the auction floors, this restriction should be lifted.

8.17.4 The review of the Tobacco Act will need to address some weaknesses in the current legal and regulatory framework, and these include-

- (a) the single most important constraint of the tobacco industry in our view is the existence of too many monopolies or oligopolies in the industry;
- (b) since Malawi is the world's largest producer of burley



tobacco, this means that the Malawi market is a specialised niche. The producer price of the tobacco at the auction floors is, therefore, very sensitive to the world demand. At the moment the growing of burley is unregulated, usually leading to production levels that exceed the world demand. This in turn contributes, in addition to the market inefficiencies described above, to the producer price to plummet. The Tobacco Control Commission's quota system does not seem to work very well. Measures should be taken to enhance efficient implementation of the quota system;

- (c) intermediate tobacco buying as a concept was good. It allowed the smallholder farmer to have ready access to markets. What was wrong with intermediate tobacco buying was the deregulation, whereby anyone was free to buy tobacco. There is one school of thought that is advocating the re-introduction of intermediate tobacco buying, except that it must be strictly regulated to prevent free loaders. It is being suggested that the Tobacco Control Commission should be authorised to licence suitable buyers who demonstrate capacity to grade and transport tobacco. The current ban on intermediate tobacco buying is encouraging smallholder farmers without easy access to the auction to sell their tobacco across the border, costing Malawi an estimated 30 million kilogrammes in 2008 alone. At any rate, another school of thought argues, intermediate tobacco buying is a direct result of the auction floor's market failures described above which lead to long delays. If the selling period was significantly reduced, there would be no need for a smallholder farmer to sell to an intermediate tobacco buyer;
- (d) the legal and regulatory framework should facilitate and promote the development of 'independent' processing plants. There is one 'independent' processing plant in Lilongwe, but since it is partly owned by Premium TAMA even this plant is not truly independent of 'market' capture. The Ministry of Agriculture believe the concept of Public-Private Partnerships should be exploited to expand processing capacity in Malawi;
- (e) the legal and regulatory framework should encourage, rather than stifle, competition. Accordingly, it is being proposed that for example the export of green leaf should be permitted under licence to take advantage of excess processing capacity in other countries, say, Zimbabwe. This option should be used only a last resort as it could legitimise smuggling, and would also entail the exportation of 'jobs' outside Malawi;
- (f) a definitive policy decision is needed on contract farming. While

many question the motives of the buyers being involved in contract farming, this will need to be assessed in light of the demands of international buyers who have volume, style and quality specifications that the smallholder farmer alone may not meet. Similar arrangements have so far worked well in the tea and sugar sectors. To allay the suspicions that the buyers reap off the poor farmer, it is recommended that the price paid should be linked to the daily auction floors going price. Since tobacco, just like cotton, is considered a strategic crop for Malawi, the Government does not presently support full liberalisation. In any event, recent events in the global market would suggest that 'over deregulation' has been disastrous.

8.17.5 It is suggested everyone, including ADMARC, should secure an appropriate licence under Part VI. Equally, the circumstances under which the Minister may grant authority to a party to purchase tobacco outside of the floors should be clearly spelt out. In order to level the playing field in terms of payment of fees etc, every effort should be taken to ensure that provisions such as this do not tilt the trading environment in favour of select few.

8.18.6 The provisions of this Act have ramifications on smallholder farmers. Like all other tobacco farmers, they need to get their tobacco to the floors. The cost of transportation is likely to present a sizeable cost as a proportion to their tobacco. For this reason it may be advisable to consider the possibility of smallholder farmers selling their tobacco outside of the auction system. This view is reinforced by the current practice which allows farmers to sell their tobacco through a contract system. We find no laudable reason why this new system should go through the auction floors. The only reason seems to be to provide revenues to the auctioning company.

#### 8.19 Tea Cess Act, Cap 42.03

8.19.1 By virtue of the Act, and subject to the approval of the Minister, the Tea Association (Central Africa) Limited is empowered to levy a cess on all tea manufactured in Malawi. The cess collected shall be used for the benefit of the tea industry.

8.19.2 The Act, in section 2 provides absolute monetary sums. These sums have fallen out of date because changing economic circumstances. It is suggested that these updated and where possible these could be delegated to subsidiary legislation so that changes can be effected much more easily than is the case currently.

#### 9.0 ENERGY LAWS

9.1 In 2003 the Government of Malawi approved an integrated Energy Policy document that seeks to set out strategies and priorities to be implemented within a period of five years. The energy sector could conveniently be split into five categories, namely, electricity, liquid fuels, coal, biomass and new and renewable energy.

## 9.2 Electricity

9.2.1 The electricity services industry is dominated by the Electricity Supply Corporation of Malawi Limited (ESCOM) a publicly owned public enterprise. ESCOM's total installed capacity is estimated at 304 MW. Of this, approximately 285 MW (94%) is generated from hydropower sources and the remaining 19MW (6%) is thermal.

9.2.2 The electricity sector being monopolistic in nature is regulated by the Electricity Council established under the Electricity Act. The regulator is a multi-sector entity called the Malawi Energy Regulatory Authority, established under the Energy Regulation Act. The other relevant pieces of legislations include the Electricity Act, the Energy Regulation Act and the Rural Electrification Act.

## 9.3 Liquid Fuels

9.3.1 Malawi is a non-oil producing country and imports 97% of its refined petroleum product requirements, the balance being contributed by locally-produced ethanol, which is blended with petrol.

9.3.2 Liquid fuels (i.e. petrol, diesel, paraffin, Jet A1, Avgas and ethanol) account for 3.5% of Malawi's total energy consumption. The liquid fuels supply industry is liberalised. The individual oil companies have established a joint venture importing company called Petroleum Importers Limited that imports liquid fuels in bulk. The pump price is regulated through an automatic adjustment formula managed presently by the Petroleum Pricing Committee (PPC). The relevant legislations include the Liquid Fuels and Gas (Production and Supply) Act and the Energy Regulation Act

## 9.4 Biomass

9.4.1 The biomass sector is governed by the Forestry Policy (1996) and the Forest Act, 1997. Malawi's population is predominantly rural. Therefore its energy balance is dominated by biomass sources in the form of firewood, charcoal and crop and industrial wastes. The forestry sub sector is regulated by the Forestry Department

## 9.5 New and Renewable Sources of Energy

9.5.1 In September 1999, the government launched the National Sustainable Renewable Energy Programme (NSREP) whose main objective was to promote Renewable Energy Technologies (RETs) as alternative sources for lighting and cooking through delivery modalities and financing mechanisms that have proved workable elsewhere in the world. These technologies include solar home systems, biogas systems, wind energy plants, mini- and micro-hydro plants and biomass energy conservation.

9.5.2 The governing legislation is the Energy Regulation Act, though the Department of Energy is contemplating the promulgation of specific sub-sector legislation.

## 9.6 Coal

9.6.1 Malawi has 1 billion metric tonnes of probable coal reserves, 22 million tonnes of which are proven reserves. Although coal deposits occur in several locations in Malawi, three mines are currently in operation at Mchenga in Rumphu district in the north of the country.

9.6.2 Mining activities in Malawi are regulated by the department of Mines pursuant to the requirements of the Mines and Minerals Act

## 10.0 LAWS RELATED TO ENVIRONMENT

10.1 The Constitution, in section 13, calls upon the State to manage the environment responsibly in order to-

- (a) prevent the degradation of the environment;
- (b) provide a healthy living and working environment for the people of Malawi;
- (c) accord full recognition to the rights of future generations by means of environmental protection and sustainable development of natural resources; and
- (d) conserve and enhance the biological diversity of Malawi.'

10.2 Prior to 1996, there existed several sectoral legislation dealing with the environment and natural resources management. There were more than 40 statutes which emphasized a command and control approach through inflexible and restrictive uncoordinated sectoral laws. These statutes had been developed without reference to one another, but their common features included heavy dependence on penalties rather than on incentives, or public participation or co-management with beneficiary communities to induce compliance.

### 10.3 Environment Management Act

10.3.1 The Environment Management Act (EMA) was promulgated in 1996<sup>47</sup> to organize the environmental sector and give practical guidelines useful to other decision makers and authorities involved in any field of activity or projects with a link to environmental issues. Conceding countries were required to prepare National Environmental Action Plans (NEAP); National Environmental Policies (NEP) and enabling legislation.

10.3.2 The objective of the EMA is to promote sustainable protection and management of the environment. The Environmental Affairs Department is the mandated government institution responsible for the co-ordination of environmental policies and programmes.

#### 10.3.3. Environment Impact Assessment

Pursuant to Section 24, the Minister has issued the Environment (Specification of Projects Requiring Environment Impact Assessment) Notice. It is obvious that most PPPs fall under the Notice. For instance in a generation project “construction or expansion of electrical generation facilities designed to operate at greater than 4 MW, or in the case of hydroelectric generation where the total head is greater than 20 meters...”. When you consider that the smallest hydro electric generator has a capacity of 4 MW then you can see that almost all major PPPs in Malawi in electricity will require an environmental impact assessment (EIA). In waste management, any solid waste management plant capable of serving 1000 people or more requires an EIA, same as does the construction of new or expansion of new airports, or airstrips.

## 11.0 LAWS GOVERNING CONDUCT OF BUSINESS GENERALLY

### 11.1 Business Licensing Act

11.1.1 The Act was enacted in 1960 and it provides for the licensing of the sale of goods by way of business and for the carrying on of certain businesses. The term business is widely defined to include trade, industry and occupation.

11.1.2 No person may sell any goods by way of business unless licensed. The licence is renewable once every year. Where a business is carried on in more than one premises, then a separate licence is required for each such premise.

### 11.2 Business Names Registration Act

11.2.1 The Business Names Registration Act provides for the registration of firms

and persons carrying on business under business names. It was enacted in 1922.

11.2.2 It is recommended that the Act be streamlined in order to ease the registration of businesses in Malawi. Once small businesses are registered at least cost, they will have the motivation to access more credit and, therefore, grow out of the informal sector to fill the 'missing middle'.

## 2.9 Companies Act

2.9.1 The Act is a compendium of the rules and corporate governance setting out the legal basis on which companies are formed and run, therefore being a vital part of the legal framework within which business is run. The Companies Act was modeled on the UK Companies Act of 1948, suggesting that in many respects it is outdated. The business environment has evolved, and is evolving very fast. An outdated Companies Act runs the risk of being divorced from the needs of the business community and investors, creating obstacles to ways companies (and investors) need to operate.

2.7.2. A Company may either be private or public, and may be of limited liability by shares or guarantee. At least two people are needed to incorporate a company and it must have at least three resident directors. In our view, the legal framework governing the operations of companies must be simple, efficient and cost effective. The rigidity of requiring three resident directors will chill PPP investment.

2.7.3 The provisions in the Companies Act relating to an external company are overly restrictive. An external company is a body corporate formed outside Malawi which establishes or maintains an established place of business in Malawi. Again, an investor (say a PPP investor) should be at liberty to maintain legal status of its establishment outside Malawi without being subjected to unnecessary interference as that contemplated in the relevant sections (section 306 et al) of the Companies Act.

## 11.3 Control of Goods Act

11.3.1 The Control of Goods Act was enacted in 1954 with the purpose of enabling the Minister to provide by regulation for the control of the distribution, disposal, purchase and sale of any manufactured or un-manufactured commodity or any animal or poultry specified by the Minister by order for the control of imports into, and exports out of, Malawi.

11.3.2 The Minister is empowered to make regulations, whenever it appears expedient to him, to control the import into and export from Malawi of any goods. This control extends to the distribution and charges which may be made for

services relating to the distribution, disposal, purchase and sale of such a commodity. In addition to the above powers, the Minister may require any person carrying on or employed in connection with any trade or business to produce books or accounts or other documents relating to that trade or business for inspection of the Minister. The powers of the Minister may include the rationing of any commodity by fixing quantities of any commodity to be obtainable in the aggregate or individually by different classes of persons. The Minister may also dictate methods of distribution of the commodity. The regulations may apply generally or to any particular trade.

11.3.3 Stakeholders appreciate the need to regulate and control goods, and are not unduly concerned with the powers granted to the Minister except that perhaps in order to shore up fairness and equity of treatment the Act could do with minor amendments to encourage consultation with the relevant players in the market place.

#### 11.4 Credit Reference Bureau Act, 2010

11.4.1 Research shows that credit bureaus are critical to the expansion of credit. The availability and use of credit bureau reports in credit decisions increases the quality of credit decisions and provides significant risk mitigation by also minimising fraud. In this regard, Malawi recently enacted the Reference Bureau Act.

11.4.2 The Act provides a framework for a regulated and reliable system of credit information sharing, which should give banks more confidence to lend more to businesses, in particular the Small and Medium-sized Enterprises (SME) sector.

11.4.3 The Act prohibits persons from undertaking credit bureau reference business unless licensed by the Reserve Bank of Malawi. In considering whether to grant a licence to an applicant, the Reserve Bank will take into account many factors, including the reputation of the applicant and its financial capacity and adequacy.

11.4.4 Information pertaining to credit reports can only be disseminated to financial institutions licensed under the Financial Services Act. Every licensed credit reference bureau has to observe utmost confidentiality with regards to information in its custody.

#### 11.5 Microfinance Act, 2010

11.5.1 Microfinance is the provision of financial services to the low income households and SME. Supporting the SME sector in this way has a tremendous potential of unleashing economic activities of the poor thus alleviating poverty. One of the greatest constraints to the growth of the SME sector is access to

credit. The importance of developing the microfinance institutions can, therefore, not be over emphasised.

11.5.2 The microfinance institutions (MFI) in Malawi have been established either as nongovernmental organisations (NGO) or a savings and/or cooperative society. The number of MFI in operation in Malawi is estimated to be approximately 20. The MFI have operated without an appropriate policy and legal framework. The Government realizes the need to focus more on these MFI to enhance their effectiveness in the provision of savings, credit and other financial services to the poor and the SME sector. It has thus enacted Microfinance Act, 2010.

11.5.3 The Act provides for the regulation and supervision of microfinance services in Malawi. Microfinance services have been defined as “financial services to small or micro enterprises or to low income customers”. The Bill proposes three tiers of MFIs to be regulated, which is consistent with the regional trend, e.g., in Kenya and Uganda.

11.5.4 To be able to carry on the micro finance business, a person must have been—

- (a) registered as a micro-credit agency; or
- (b) licensed as a non-deposit taking micro finance institution; or
- (c) licensed as a deposit taking micro-finance institution;

11.5.5 Other licensed financial institutions may be allowed by the Registrar to offer microfinance services. However, savings and credit cooperatives are exempt, as are small member based schemes. The criteria for registration, includes that the person must be a registered company limited by shares or guarantee or a cooperative. A licensed micro-finance institution shall exclusively deal with micro-finance activities. It may not invest more than 5% of investible funds in non-financial activities.

## 11.6 Competition and Fair Trading Act

11.6.1 The Competition and Fair Trading Act was enacted in 1998, with the objective of encouraging an environment that is conducive to fair trading and the competitive marketing of goods and services. The Act also establishes the Competition and Fair Trading Commission.

11.6.2 The Act fairly follows EU competition law principles, particularly in the Establishment of a unitary competition authority to regulate anti-competitive behaviour and corporate mergers across all sectors. Abuses of dominant position and anti-competitive behavior are prohibited and regulated by the Act on an ex



post basis (i.e. no requirement for prior notification), while all mergers or takeovers must be notified to the Commission before they take place to allow the Commission to investigate whether there will be a 'substantial lessening of competition' (SLC) resulting from the merger and to authorize or reject the transaction accordingly.

11.6.3 The Act also covers the issue of consumer protection and while there may be no urgent need to have separate bodies to regulate all of these areas, the effectiveness of this 'one-stop shop' approach needs to be evaluated. Some improvements and updates would increase the effectiveness of the law in the regulation of trade and business, but these need not be extensive. One of these improvements would be to ensure proper interaction and separation of powers between the various regulatory bodies in Malawi.

## **Annex 2: Notes of the Questions & Answers sessions**

# **PUBLIC PRIVATE PARTNERSHIP OPTIONS STUDY AND AWARENESS RAISING FOR IRRIGATION INVESTMENT IN MALAWI**

## **NOTES ON QUESTIONS & ANSWERS SESSIONS – NOVEMBER 2010**

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# 1. SESSION 1: LINE MINISTRIES 1 / LILONGWÉ

## INSTITUTIONS INVITED:

Target Audience	Invitees
Ministry of Finance	1. Secretary to Treasury; 2. Director of Budget 3. Director Debt & Aid
Privatisation Commission	1. Chief Executive 2. Director of PPP
EPD	1. PS 2. Director of Economic Planning 3. Director Development Planning
Malawian Investment Promotion Agency	1. General manager 2. Director Investment Services
Ministry of Justice	1. PS 2. Chief Parliamentary Counsel
OPC	1. Chief Secretary to OPC 2. PS (Admin) 3. National Coordinator of Greenbelt

**PLACE AND DATE: OFFICE OF THE PRESIDENT AND CABINET CONFERENCE ROOM,  
LILONGWE – 9<sup>TH</sup> NOVEMBER 2010**

## 1.1 SUMMARY OF DISCUSSIONS

### Chairpersonship

The session was chaired by Mr. Charles Msosa, Principal Secretary (Administration) in the Office of the President and Cabinet. He welcomed the team of consultants and the participants. He underlined that both irrigation and PPPs rank paramount in Government's priorities as evidenced by the Greenbelt Initiative (which is being driven personally by the President) and Government's decision to have PPP legislation. He stated that the preparation of the PPP Bill 2010 has reached an advanced stage- it is at Attorney General's Chambers for vetting.

### Presentation

The Consultant made a presentation which was divided into 4 parts, namely, Introduction to the Assignment and its Scope of Works, International Experiences of PPP in Irrigation, Potential and Legal Framework for PPP in Malawi, and Shire Valley Irrigation Project Review. The presentation of the scope of work for the assignment centred on two activities of:

- Conducting awareness raising and capacity strengthening activities among key line Ministries, private investors and water users; and,
- Identifying potentially promising and economically viable PPP options for the proposed Shire Valley Irrigation Project.

**The discussions stressed that the outcome of these activities would influence the terms of reference for detailed design of SVIP.** For the purpose of the assignment, the consultant defined **Public Private Partnership (PPP)** as an agreement where a government service or private business venture is funded and operated through a partnership of government and one or more private sector companies under a contract. The contract is between a public-sector authority and a private party, in which the private party provides a public service or works and assumes substantial financial, technical and operational risks in the services or works.

The presentation on International Experiences discussed experiences in Morocco, where implementation of PPP with various model options and combinations, is advanced and it is the only country that is fully developed and implemented a PPP project. The international Irrigation PPPs discussed also included those experiences in France, Brazil, Egypt and Ethiopia.

The Potential and Legal Framework for PPP in Malawi discussed the legal regime with assertion that present laws are adequate for implementing PPPs. This was also reinforced by the PPP Bill, which once enacted would create a unique legal environment. However, there are a few gaps here and there that need to be considered carefully in developing and implementing PPPs in the country.

The Consultant's presentation ended with the review of the two design concepts for the SVIP. The first to be reviewed was that of the Government done in 2008, which has its intake works at Hamilton Falls, open channel canal system for the 55 m<sup>3</sup>/s main and distribution canals. The other design concept is that of Illovo (2010) with intake works at Kapichira barrage reservoir, a 35 m<sup>3</sup>/s main canal and piped distribution or secondary water distribution systems. The difference highlights of the two design concepts are resources savings. The 2010 design concept serves water resources and capital cost by reducing the water required from 55 m<sup>3</sup>/s to 35 m<sup>3</sup>/s and the cost of constructing the intake and main canal from 143 million US Dollars to 68 million US Dollars. The operation and maintenance of the SVID would also be reduced if it was constructed according to 2010 design concepts.

After presentation, the Q&A sessions proceeded as follows:

#### Question on Guerdane PPP Project in Morocco

One of questions on the PPP Project in Morocco was related to how farmers were organised. The consultant answered that the PPP in Guerdane did not include activities of farmers' organization. The farmers were already doing irrigation but their groundwater based sources were dwindling in quality and quantity before the implementation of the PPP and the PPP only involved development of surface water sources and connecting the supplies to their already existing irrigation systems.

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### Irrigation Services Regulator

There were views expressed to the effect that **there appears to be no need to establish a regulator for PPP in irrigation** as is the case in other sectors. Moreover, it could create a risk of intervention of the regulator in the process of setting tariff for irrigation services. [The Contracting Authority will take care of the tariff issues within the PPP contract.]. In the same vein, it was observed that the call in SVIP Design Study (2008) for the establishment of the Shire Irrigation Valley Authority would appear to run counter to policy of the Government to streamline the number of cost centres.

### Monopoly in Sugar Industry

On the issue of sugar industry monopoly (by Illovo), it was observed that the existence of monopolies in the sugar industry would appear to be the norm. An example was given of India where one company also has monopoly in the sugar industry. In any case, the role of Illovo in the growth of sugar industry in the country cannot be ignored and is very critical for green belt initiative.

### Land Acquisition, Compensation and Resettlement

The involvement of the Office of the President and Cabinet includes processing compensation and resettlement when groups of people in acquisitioned land and developed for irrigation scheme are being moved out. However, one concern has to do with the fact that in some instances, the compensated people return to the irrigation scheme area and have access to the benefits accruing from the scheme itself.

### Environmental Impact Assessment

Environmental issues pertaining to the Shire River, particularly those that have an international dimension, need to be given serious consideration, including those that would affect the Shire-Zambezi Waterway.

### PPP Bidding Process

The point of Illovo willingness to take part in O&M PPP for the main canal and intake works or irrigation services raised questions of conflict of interests.. The point being that Illovo might be both a user (mere beneficiary) and financier or irrigation service provider even to its competitors.

### Proffered PPP Options of SVIP

Government would, in due course, critically consider the recommended options and make appropriate decisions but in broad terms Government would be inclined to go for an option where there is a nominal contribution by Government and farmers pay full costs.

### Closing Remarks

The Chairperson closed the session by thanking the team of consultants for an enlightening presentation and the participants for their constructive comments.

## 1.2 LIST OF PARTICIPANTS

Entity	Surname	Name	Position	Land line	Cell phone	E-mail
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<b>Ministry of Development, Planning and Cooperation</b>						
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<b>Ministry of Finances</b>						
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<b>Privatization Commission</b>						
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<b>Malawian Investment Promotion Agency</b>						
	Ndege	Lovemore	Investment Promotion executive		0.995.424.974	<a href="mailto:ndegel@mipamw.org">ndegel@mipamw.org</a>



## 2. SESSION 2: LINE MINISTRIES 2 / LILONGWÉ

### INSTITUTIONS INVITED:

Target Audience	Invitees
Ministry of Irrigation and Water Development	<ol style="list-style-type: none"> <li>1. PS</li> <li>2. Director (Irrigation)</li> <li>3. Director (Water Resources)</li> <li>4. Director (water Supply)</li> <li>5. Deputy Director (irrigation)</li> </ol>
Ministry of Agriculture and Food Security	<ol style="list-style-type: none"> <li>1. PS (Admin)</li> <li>2. PS (Agricultural Services)</li> <li>3. Director of Planning</li> </ol>
Ministry of Lands	<ol style="list-style-type: none"> <li>1. PS</li> <li>2. Commissioner of Lands</li> <li>3. Chief Land Registrar</li> </ol>

**PLACE AND DATE: MINISTRY OF IRRIGATION AND WATER DEVELOPMENT CONFERENCE ROOM, LILONGWE – 9<sup>TH</sup> OF NOVEMBER.**

### 2.1 SUMMARY OF DISCUSSIONS

#### Chairpersonship

The session was chaired by Mr. S. Maweru, Principal Secretary for Irrigation and Water Resources. He welcomed the team of consultants and the participants.

#### Presentation

The presentation was carried out as per presentation described in section 1.1. The Q&A proceeded as follows:

#### Delegation of Water Management Services

Questions were raised on delegation of water management services from a public entity to a private entity with a view to understanding the implications that such delegation would entail in delivery of public services. Attention of participants was drawn to provisions of the PPP Bill that directly deal with this point.

#### Sharing of Risks and Functions between Public and Private Sectors

A question related to the public/private ratio that would constitute a good balance (such as 50/50 in Morocco, 85/15 in Egypt, etc) was raised by participants. It was observed that reaching an agreement on sharing of risks is a complicated process and usually follows overly protracted negotiations and what has been agreed becomes the fair distribution of risks and functions.

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### Local/Foreign Investments in PPP

Questions were asked on the balance of local and/or foreign investment in PPP projects. In response, it was pointed out that investment patterns vary from one country to another. The Consultant mentioned that in the case of Morocco and Brazil mainly local companies were involved but in Ethiopia and Egypt there was possibility of foreign company involvement, as a number of foreign companies expressed interest. The involvement of BRL in Morocco was more on consultancy basis and it was not significant investment.

### Categories of Land and Land Acquisition

PC asked a question regarding the status of land in SVIP area. It was explained that **customary lands are dominant**, although pieces of private land and public land (National park) were also within the project area. Discussions issued on the problems the private sector investors would have in acquiring such land individually, with suggestions that land under the project should be leased by government or its agent for the private sector to purchase or use under lease/concession.

### Reform of Land Legislation

A New Land Bill was mentioned by representative of ministry of Lands, which was basically saying land will be under public or private hands with customary land being converted to private land belonging to the current user communities or the chiefs in case of vacant customary land. Reference was also made to proposed changes to the legal regime pertaining to land. The Special Law Commission on Land Related Legislation has recommended wholesome reforms of the legislative framework of land and related matters, which resulted in the said bill. It is important to pay attention to the recommendations and corresponding legal reforms as some of them directly touch on issues related to irrigation and PPPs.

### Water Resources Bill

Mention was made of the there being a draft Water Resources Bill (2010) which seeks to replace the existing Water Resources Act (1969). The main thrust of the draft Bill is better management of water for multi-purposes use. The provisions of the draft Bill will have an impact on SVIP.

### Water Abstraction Fees

The Water Resources Act empowers the Water Resources Board to impose a fee for water abstraction (raw water).

### Food Security and Commercial Cropping

One point that was stressed is that **food security and commercial cropping are not necessary in opposition**. An example was given of Zambia where commercial farmers produce maize as a cash crop satisfying at the same time national objectives of food security. Everything depends on the market price and the productivity that the farmers can obtain. The question of food security does not necessary has to be envisaged at the farm scale (meaning that each farmer has to produce its food).

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### Cropping Patterns

An observation was made to the effect that the cropping pattern that appears in the feasibility may be very different from reality after implementation of the project. A most important issue in the design of the project is the average equipped area by family. The SVIP must find a balance between smallholders areas (but with not too small areas) and larger pieces of land for commercial private development.

### Waterworks Act 1995

A suggestion was made to have a re-look at fundamental principles in the Waterworks Act.

### Tariff

It was observed that **large investors would be uncomfortable with Government setting the tariff**. A better option would be to have the contract govern tariff setting.

### Cotton Act

One of the high value crops that would be considered for growing in the SVIP is cotton. It was, however, observed that the growing, processing and marketing of cotton is subject to a number of restrictive controls under the Cotton Act. Such controls include-

- (a) persons being prohibited from growing cotton except from approved seeds;
- (b) persons being prohibited from importing into or exporting from Malawi any seed cotton or ginned cotton without prior written permission of the Minister;
- (c) the power of the Minister, under section 13, to fix a date-
  - (i) prior to which, in any year, all cotton plants in any specified area, shall be uprooted;
  - (ii) prior to which such cotton plants shall be destroyed; and
  - (iii) no cotton shall be planted in such an area; and
- (d) the power of the Minister, under section 13, to specify a period in any year during which no cotton seed shall be planted in any area specified in such notice.

### Closing Remarks

The Chairperson closed the session by thanking the team of consultants for the presentation and the participants for their input into the process.

## 2.2 LIST OF PARTICIPANTS

Entity	Surname	Name	Position	Land line	Cell phone	E-mail
<b>Ministry of Irrigation and Water Resources</b>						
	Maweru	S.C.Y	Principal Secretary		0.999.922.015	<a href="mailto:smaweru@gmail.com">smaweru@gmail.com</a>
	Mamba	Geoffrey	Director of Irrigation Services	01.753.873	0.888.891.821	<a href="mailto:mamba.geoffrey5@gmail.com">mamba.geoffrey5@gmail.com</a>
	Kanjaye	Modesta	Director of Water Resources		0.888.853.188	<a href="mailto:mbkanjaye@malawi.net">mbkanjaye@malawi.net</a>
	Malata	Richard	Chief economist		0.999.094.184	<a href="mailto:malatarichard@yahoo.co.uk">malatarichard@yahoo.co.uk</a>
<b>Ministry of Agriculture and Food Security</b>						
	Kenyona	Edson	Principal economist		0.993.579.905	<a href="mailto:ekenyona@yahoo.co.uk">ekenyona@yahoo.co.uk</a>
	Manganga	M.L.	DOF		0.888.855.085	<a href="mailto:mimaganga@yahoo.com">mimaganga@yahoo.com</a>
<b>Ministry of Lands</b>						
			Director of planning		0.999.211.064	
<b>Privatization Commission</b>						
	Msusa	Charlie	Director, PPP Projects	01.823.655	0.999.950.767	<a href="mailto:msusa@pcmalawi.org">msusa@pcmalawi.org</a>
	Sampson	Cezley	Senior PPP advisor	01.823.655	0.881.353.068	<a href="mailto:sampson@pcmalawi.org">sampson@pcmalawi.org</a>

### 3. SESSION 3: ILLOVO / PRESSCANE

#### INSTITUTIONS INVITED

Target Audience	Invitees
Illovo Group	<ol style="list-style-type: none"> <li>1. MD</li> <li>2. GM (projects);</li> <li>3. Agriculture Manager</li> <li>4. Commercial Manager</li> </ol>
Press Cane	<ol style="list-style-type: none"> <li>1. Chairman,</li> <li>2. Chief Executive</li> <li>3. Production Manager</li> </ol>

**PLACE AND DATE: ILLOVO CONFERENCE ROOM. LIMBE 10<sup>TH</sup> OF NOVEMBER**

#### 3.1 SUMMARY OF DISCUSSIONS

##### Presentation

The presentation was carried out as per presentation described in section 1.1. without the Part 3 dedicated to the legal analysis The Q&A proceeded as follows:

##### A Question on Guerdane PPP Project in Morocco:

A question was raised about who financed the concessional loan in Guerdane case. The consultant explained that it was financed by the Hassan II Fund (managed by the King) with the following conditions for the private operator: 20 years of grace period, payment period on 30 years investment period and 1% of interest rate.

##### Interest of Illovo for the SVIP as a water user

The Illovo 's MD confirmed that Illovo would be interested in the SVIP if a high level canal option is chosen for the feeder canal in order to have electricity savings (compared to the existing situation where the water is lifted from the river).

**Illovo's contribution to the capital costs (pipe or even feeder canal) will depend on the profitability of the SVIP for them.** A preliminary calculation had to be done during this assignment , including:

Electricity and pumping stations O&M savings,

Investments to be done to convert existing irrigation system to that which received water from the high level canal for its existing the 13,800 ha.

The consultant and the General Manager of expansion met again the following Monday to assess the preliminary profitability of the change of water supply for Illovo.

### Optimization of SVIP Designs

It was reminded by the Illovo General Manager (expansion) that the design of the high-level canal option still **can be optimized by reducing the length of pipelines with an holistic vision of the project** (phases I and II, including design of Bangula canal). Illovo expected that the design study update will provide such optimised design.

### Interest of Illovo for the SVIP as a O&M operator

**Illovo confirms that the company would be interested to be involved on O&M responsibilities for the SVIP if paid for the public authority.** It will also be a means to ensure Illovo that the assets are maintained and that their sugar cane plantation will be supplied properly.

### Interest of Illovo for the SVIP as a concessionary

**The Illovo's General Manager expressed his doubt on the willingness of the company to be involved in a contract of concession with contribution to the capital costs of the primary infrastructures and responsibilities in water fees collection from all the waters users** (including smallholders).

### Illovo Expansion Strategy

The Consultant requested Illovo to elaborate its expansion strategy so that it can be employed in the financial simulation model of the SVIP, particularly balancing the cropping pattern between Sugar cane and other crops in light of Illovo 2010 concept designs that showed monopoly of sugar can in Phase I of SVIP. Illovo agreed that the review done by Coyne & Bélier (Illovo 2010 concept designs )proposed a Phase I dedicated to sugar cane as an example for the calculation of water demand.

Illovo agrees that the 8,000 ha of expansion could be fulfilled in both Phase I and II as it was not possible to get 8,000 hectares under Phase I alone. The expansion strategy appears in a map presented to the consultant. Illovo will provide a prioritized list of what areas are more interesting for sugar cane development.

## 3.2 LIST OF PARTICIPANTS

Entity	Surname	Name	Position	Land line	Cell phone	E-mail
<b>Illovo Group</b>						
	Parrott	Ian	Managing Director	00.265.1.840.34	0.999.966.700	<a href="mailto:iparrott@illovo.co.za">iparrott@illovo.co.za</a>
	Cousens	Dave	General Manager - expansion	00.265.1.845.10	0.999.965.585	<a href="mailto:dcousens@illovo.co.za">dcousens@illovo.co.za</a>
<b>Presscane</b>						
	Walita	Susan	Production Manager	00.265.1.420.54	0.999.843.327	<a href="mailto:susanwalita@presscorp.com">susanwalita@presscorp.com</a>
<b>Privatization Commission</b>						
	Sampson	Cezley	Senior PPP advisor	01.823.655	0.881.353.068	<a href="mailto:sampson@pcmalawi.org">sampson@pcmalawi.org</a>

## 4. SESSIONS 4 / 5: KASINTHULA / DISTRICTS COUNCILS / LOCAL CHIEFS

### INSTITUTIONS INVITED:

Target Audience	Invitees
DEC	<ol style="list-style-type: none"> <li>1. DC's Chikhwawa and Nsanje</li> <li>2. Two directors of Planning</li> <li>3. Two District Water Officers,</li> <li>4. Two District agriculture officers</li> </ol>
Traditional Chiefs	<ol style="list-style-type: none"> <li>1. Senior Chief Lundu</li> <li>2. TA Maseya,</li> <li>3. TA N'gabu</li> <li>4. TA Katunga</li> <li>5. TA Kasisi</li> </ol>
NGOs/CBOs	<ol style="list-style-type: none"> <li>1. Rep of World Vision,</li> <li>2. Rep. of Action Aid</li> <li>3. Rep of GOAL Malawi</li> <li>4. 3 other Rep of NGOs in Chikwawa or Nsanje</li> </ol>
Smallholder farmers, Majete Game Reserve and Lengwe National Park and commercial farmers	<ol style="list-style-type: none"> <li>1. 5 smallholder farmers to be selected by Ng'abu ADD</li> <li>2. Rep of Majete</li> <li>3. Rep of Lengwe</li> <li>4. 2 Rep of private ranchers chosen by N'ADD</li> <li>5. 2 rep of commercial farmers (crops) chosen by N'ADD</li> </ol>
Kasinthula Cane Growers Trust and Kasinthula Cane Growers Limited	GM KCGL Chief Executive KCGT Chairman of The Trust And at least 10 farmer trustees

### SHIRE VALLEY CANE GROWERS TRUST (KASINTHULA), DISTRICT COUNCILS, NGOs,

Place and date: Chikwawa 12<sup>nd</sup> of November

#### 4.1 SUMMARY OF DISCUSSIONS

##### Presentation

The presentation was carried out as per presentation described in section 1.1. without the Parts 2 and 3.

The Q&A proceeded as follows:

### PPP and its objectives Clarity to the Chiefs and Village

The DC raised issues regarding clarity and simplicity of PPP presentations to the Chiefs and villagers so that there should be no misunderstanding that would lead to PPP rejection or resentment. He said that the definition and objectives of PPP be clearly explained so that it stimulates change in mind sets of the local communities who have always perceived that it is the duty of Government to provide them with amenities like irrigated water for free. The consultant explained very clearly the meaning of PPP in vernacular so that the chief understand the concepts. PC also promised to hire a communications expert whose duties would include production and dissemination of relevant materials required for promotion of PPP and choices the communities have.

### Any involvement of local banks at this stage?

A question was raised by one participant whether during the course of the consultations local banks have been contact to take stake in the project. This has not been done but it is something worth exploring.

### Incentive for private operator?

A question was raised of what kind of tax incentives will the private operator have to entice them come and invest in the area. This has to be considered in the design study to ensure the SVIP is competitive to private investment. The PPP feasibility studies should also explore tax incentives as a measure of luring the private sector.

### Interest for KCG to be connected to the SVIP?

One staff of SVC GT asked what could the interest for them. The consultant explained that the water would delivered at high pressure adequate enough for furrow or centre pivot irrigation without need for pumping, which **will save energy**, considering that SVC GT pays high bills of water pumping costs, which will get worse the expansion plan that are based on centre pivot (today SVC GT have 65 % of furrow and 35% of centre pivot).

### Advantages of PPP for SVIP ?

The question was asked as what were the advantages of PPP for SVIP. The consultant answered that the main two advantages are : i) attracting private funds to make the project happen (if not, the government could not develop and manage the SVIP alone) and ii) to get efficient and sustainable commercially oriented irrigation and drainage services (the international experiences already showed the public irrigation services are often poor, inefficient and ineffective .).

### What could be the participation of smallholders in water management if a private company is contracted to do water management?

The consultant replied that O&M of the water infrastructure up to the farm would be the water management services contracted out and on farm water management could be left to smallholder or water users associations, WUA, organized at secondary or tertiary levels of water delivery).



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In this regard, the Consultant advised that it is not only compatible but strongly recommended that certain forms of Water Users organizations are set-up to be sure the water users will have a body that can coordinate and handle individual and collective water issues with the private operator and the contracting authority.

#### Importance of Participation of the Local Stakeholders in SVIP Designs

Different participants expressed the need that the finalization of the SVIP design should be done with the involvement and participation of local stakeholders and potential beneficiaries. It was recommended that a local stakeholders' **committee could be set-up for this purpose specially during the implementation of the Design Study Update.**

#### Importance of diversification and commercial farmers

Several participants expressed their desire to have commercial farmers and diversification in commercial crops (mango, pineapple, tomato, cattle ranching/feed, etc.) in SVIP.

#### Importance of Food security approach

A traditional chief expressed a different point of view reminding that maize is the most important crop in the region and needed to be accommodated as one of the crops in SVIP.

#### Prospective of Foreign Companies in the area

It was indicated that one Indian company and 3 South African companies had been visiting the area to the potentialities of the area for investments and acquisition of land.

## 4.2 LIST OF PARTICIPANTS

Entity	Surname	Name	Position	Cell phone	E-mail
<b>Shire Valley Cane Growers Trust (Kasinthula Sugar Cane Growers Scheme)</b>					
	Kambadza	P.		0.999.08.56.30	
	Chilembwe	SC		0.888.51.88.06	
	Chilenje	Aubrey		0.999.60.14.34	
	Makasa	RC		0.888.61.51.55	
	Khembo	M	General manager	0.888.33.40.33	
	Chimimba	Guy		0.999.95.83.63	<a href="mailto:gchimimba@malawi.net">gchimimba@malawi.net</a>
	Chilembwe	Eric	Board Chairman	0.888.84.35.94	
	Naphambo	George		0.999.56.03.02	<a href="mailto:naphambo@yahoo.com">naphambo@yahoo.com</a>
<b>Chikwawa District Council</b>					
	Msisioa	Maggie		0.888.34.47.10	
	Bymon			0.999.30.80.00	
	Harawa	Kelvin		0.888..69.74.51	
	Magombo	Peter		0.888.11.73.47	
	Katunga			0.881.24.34.75	
	Kasisi				
	Maseja			0.995.77.64.48	
	Ngabu			0.888.31.31.52	
	Mlandauire			0.884.93.53.35	
	Nowa	YR		0.888.57.32.70	
	Luwambe	G		0.884.14.38.66	
	Chiwanga	A			
<b>Nsanje District Council</b>					
	Nema	Eric		0.888.89.96.22	
	Mjiku	Edward		0.999.29.35.56	
	Nkombenzi	Jackson		0.888.36.60.95	
	Dickens	S		0.993.54.98.05	
<b>District Irrigation Office</b>					
	Sumani	BAA		0.888.55.40.22	
	Dabuvu			0.999.42.72.34	
<b>Water Development Office</b>					
	Mchitikizo	Edwin		0.888.51.34.05	
<b>STA</b>	Stamasache			0993.72.45.63	
<b>Shire Valley ADA</b>	Mlotha	ML		0.999.92.03.75	
<b>World Vision</b>	Ngonga	Franck		0.888.76.54.43	
<b>CK - AGRIC</b>	Maluwa	NS		0.888.85.79.88	
<b>Privatization Commission</b>					
	Sampson	Cezley		0.881.353.068	<a href="mailto:sampson@pcmalawi.org">sampson@pcmalawi.org</a>

## 5. SESSION 6: ESCOM / PRIVATE COMPANIES / ADMARC / SWRB

### INSTITUTIONS INVITED:

Target Audience	Invitees
Electricity Supply Commission of Malawi, ESCOM	<ol style="list-style-type: none"> <li>1. Chairman</li> <li>2. Chief Executive</li> <li>3. Director of Distribution</li> <li>4. Director of Generation</li> </ol>
Southern Region Water Board, SRWB	<ol style="list-style-type: none"> <li>1. Chairman</li> <li>2. Chief Executive</li> </ol>
Agricultural Development and Marketing Corporation, ADMARC	<ol style="list-style-type: none"> <li>1. GM of Admarc</li> <li>2. Chairman of Admarc</li> <li>3. Head of Marketing Admarc</li> </ol>
Others	<ol style="list-style-type: none"> <li>1. Muli Brothers</li> <li>2. Iponga</li> </ol>
CONGOMA	Executive Director

**PLACE AND DATE:** BLANTYRE AGRICULTURAL DEVELOPMENT DIVISION, BADD, CONFERENCE ROOM, BLANTYRE  
12<sup>ND</sup> OF NOVEMBER

### 5.1 SUMMARY OF DISCUSSIONS

#### Presentation

The presentation was carried out as per presentation described in section 1.1. without Part 3 dedicated to the legal framework analysis The Q&A proceeded as follows:

Were the farmers in Guerdane Project (Morocco) obliged to be connected to the scheme?

The consultant explained that they were no obligation.

How will the private operator will make money on this PPP in SVIP?

The consultant explained that it depends on the design of the contract but it could be through the irrigation fee collection (for irrigations services) and by the government or farmers in case of supporting services for agriculture for smallholders.

### Any further sensitization to the business community on the opportunities of the PPP Project

A point was raised that though part of study objectives is to sensitise the potential private sector to participate in the PPP project, it was critical that another form of communication be used to reach out to more potential investors into the project as few would attend these once consultations. The Consultant agreed with the need and further mentioned that PC was contemplating establishment of a communications office where such information would be prepared and disseminated to stakeholders, accordingly.

### Diversification

A discussion was held on the potential for diversification. The following chain values were mentioned:

beans (goa beans) were once grown and profitable in Lower Shire (ADMARC),

there is a potential for sesame production in Lower Shire,

maize produced by private companies would have a too high production cost which would not be competitive on local market.

strong potential for cocoa production, which was once grown in east bank of Lower Shire

## 5.2 LIST OF PARTICIPANTS

Entity	Surname	Name	Position	Cell phone	E-mail
<b>Muli Brothers</b>					
	Tambala	HA	Head of irrigation	0.993.95.78.17	
<b>Ministry of Irrigation and Water Resources</b>					
	Mbemba	C	Design technician	0.999.23.27.08	<a href="mailto:chikondimbemba@yahoo.co.uk">chikondimbemba@yahoo.co.uk</a>
	Mbozi	AF	Chief irrigation officer	0.999.47.15.44	<a href="mailto:andybozi@yahoo.com">andybozi@yahoo.com</a>
<b>Agricultural Development and Marketing Corporation</b>					
	Masamba	J	Logistic manager	0.888.505.500	<a href="mailto:j.masamba@admarc.co.mw">j.masamba@admarc.co.mw</a>
	Mnenmba	MJ	assistant marketing	0.888.305.895	
<b>Southern Region Water Board</b>					
	Mbesa	Edward	Operations manager	0.995.62.34.47	<a href="mailto:mbesaedward@yahoo.co.uk">mbesaedward@yahoo.co.uk</a>
<b>Department of extension</b>					
	Lwesya	H	Agribusiness Officer	0.888.31.81.46	<a href="mailto:halwesya@yahoo.co.uk">halwesya@yahoo.co.uk</a>

## 6. SESSION 7: DWANGWA

### INSTITUTIONS INVITED:

Target Audience	Invitees
Dwangwa Illovo	<ol style="list-style-type: none"> <li>1. GM of Illovo Dwangwa</li> <li>2. Director of Agriculture</li> <li>3. Operations/Production Manager</li> </ol>
Dwangwa Cane Growers Trust & Dwangwa Kane Growers Limited	<ol style="list-style-type: none"> <li>1. GM DCGL</li> <li>2. Chief Executive DCGT,</li> <li>3. Chairman of The Trust</li> <li>4. least 10 farmers</li> </ol>
Ethanol Co, Dwangwa	<ol style="list-style-type: none"> <li>1. Chairman</li> <li>2. Chief Executive</li> <li>3. Production Manager</li> </ol>

**PLACE AND DATE: KASASA CLUB CONFERENCE ROOM, DWANGWA 15<sup>TH</sup> OF NOVEMBER**

### 6.1 SUMMARY OF DISCUSSIONS

#### Presentation

The presentation was carried out as per presentation described in section 1.1. without the Part 3 dedicated to the legal framework analysis. The Q&A proceeded as follows:

The participants felt that greenbelt in Malawi should recognize the “greenbelt” under Illovo, Kasinthula and Dwangwa Cane Growers Trust and expand the areas under greenbelt accordingly. The emphasis was on taking these as learning grounds for private sector and PPP in irrigation development.

Land acquisition in PPP should be planned expediently as it can considerably delay progress in irrigation development. DCGT has had experiences in irrigation development of as low as 100 hectares per year due to disagreements over land and often issue licences to their trustee farmers before the land is leased. A development that threatens the sustainability of DCGT’s expansion programme.

Although the trustee farmers can have as low as 2 hectares, the returns are considered lucrative as long as the current sugar prices continue. The fall of sugar prices may cause such low acreage per trustee farmer no longer lucrative. Such situations may cause the individual trustee farmers sale their small plots, change to more lucrative crops or the Trust turning to more lucrative use of cane such as bio fuel.

DCGT get loans and grants from ADB and EU. Currently ADB has just given them a grant after successful implementation of the loan.

## 6.2 LIST OF PARTICIPANTS

Entity	Surname	Name	Position	Cell phone	E-mail
Illovo - Dwangwa	Halse	Ed	Field Manager		<a href="mailto:ehalse@ilovo.co.za">ehalse@ilovo.co.za</a>
	Phiri	Mathias K	Irrigation Manager		<a href="mailto:mkphiri@ilovo.co.za">mkphiri@ilovo.co.za</a>
<b>Dwangwa Cane Growers Trust</b>	Ngalu	Luckson	Projects Manager		<a href="mailto:luckngalu@yahoo.com">luckngalu@yahoo.com</a>
	Chakanika	W.D	Executive Secretary		

## 7. SESSION 8: PUBLIC REGULATORY INSTITUTIONS

### INSTITUTIONS INVITED:

Target Audience	Invitees
Malawi Water Energy Regulatory Authority	1. Executive Director
Ministry of Mines, Natural Resources Energy and Environment	2. PS 3. Director of Energy 4. Director of Environment
Water Resources Board	Chief Water Resources Officer
Ministry of Trade and Industry	5. PS 6. Director of Trade 7. Director of Private Sector Development 8. Director of Cooperatives

**PLACE AND DATE: MINISTRY OF IRRIGATION AND WATER DEVELOPMENT CONFERENCE ROOM, LILONGWE – 16<sup>TH</sup> OF NOVEMBER.**

### 7.1 SUMMARY OF DISCUSSIONS

#### Presentation

The presentation was carried out as per presentation described in section 1.1. without the Part 3 dedicated to the legal analysis. The Q&A proceeded as follows:

#### Definition of Large-Scale / Small-scale irrigation ?

The consultant replied that small and medium scale for a collective irrigation scheme will mean less than 3,000 ha in general. This definition has no link with the average area of the farmers but with the total size of the irrigation scheme. A Large Scale Irrigation scheme may have only smallholders as water users; the two concepts have no relation one with the other.

#### Is a water permit necessary for each farmer of SVIP ?

The water right would be issued to the authority that owns the intake works and main canal .Thus the private operator/ public entity (responsible for the water abstraction at the intake of the SVIP) will need a water right and usually, an agreement is necessary between the private operator/ public entity and the body in charge of water regulation to ensure the water availability in the river and to define the conditions of abstraction (including the fee for raw water abstracted if any).

### What is the interest of Illovo Group in this Project ?

The consultant explains Illovo Group interest is in the potential for electricity savings in when water is delivered to their farms with adequate pressure enough to do furrow or centre pivot irrigation.

### What would be the impact on Kapichira reservoir especially if 2 more machines are installed ?

The consultant replied that this issue will be studied and answered in the Design Update Study.

### Guidelines for Resettlement Plan and Implementation

The consultant wanted to consult the official from Department of Environment Affairs if there were in place guidelines for preparation, development and implementation of resettlement plans. The answer was that there are no guidelines but resettlement plans are referred to the ministry of Lands for examination and recommendations before they are accepted by National Environment Council.

## 7.2 LIST OF PARTICIPANTS

### Session 8:

Entity	Surname	Name	Position	Cell phone	E-mail
<b>Department of Energy</b>					
	Nzima	Mac Donald	Principal Energy Office	0.888.85.74.96	<a href="mailto:macdonaldnzima@yahoo.co.uk">macdonaldnzima@yahoo.co.uk</a>
<b>Department of Environment</b>					
	Sibale	Juwo	Senior Envirt Officer	0.888.39.29.30	<a href="mailto:jisibale@yahoo.co.uk">jisibale@yahoo.co.uk</a>
<b>MoiWD</b>					
	Banda	Jane	Assistant Water Resources Officer	0.888.87.32.16	<a href="mailto:jane.banda@yahoo.com">jane.banda@yahoo.com</a>



## 8. SESSION 9: PUBLIC/PRIVATE OPERATORS, CIVIL SOCIETY AGENCIES, LARGE NETWORK ORGANIZATIONS LIKE CISANET, CONGOMA

### INSTITUTIONS INVITED:

Target Audience	Invitees
NASFARM	1. GM 2. Head of marketing 3. Head of Agriculture 4. 5 farmers under NSAFARM
.WVI	Country director
FUM	Executive Secretary
Press Agriculture	General Manager
Action Aid	Country Director
CISANET	Executive Director
CADECOM	Executive Director
Concern World Wide	Country Director
Plan International	Country Director
Care International	Country Director
Total land Care	Executive Director
CARD	Executive Director

**PLACE AND DATE: MINISTRY OF IRRIGATION AND WATER DEVELOPMENT CONFERENCE ROOM, LILONGWE – 16<sup>TH</sup> OF NOVEMBER.**

### 8.1 SUMMARY OF DISCUSSIONS

#### Presentation

The presentation was carried out as per presentation described in section 1.1. without the Part 3 dedicated to the legal analysis. The Q&A proceeded as follows:

#### Is the Project in Ethiopia is really a PPP ?

The PPP in Ethiopia was questioned because it seemed to the participant of the meeting that the risks are very low for this contract. The Consultant commented that risk may be low but the objective of the PPP was to reduce public expenditure on management of the irrigation.

What would be the involvement of the water users in the implementation of the PPP contract ?

The consultant did the same reply given during Chikwawa Q&A session, i. e., he replied that O&M of the water infrastructure up to the farm would be the water management services contracted out and on-farm water management could be left to smallholder or water users associations, WUA, organized at secondary or tertiary levels of water delivery).

In this regard, the Consultant advised that it is not only compatible but strongly recommended that a certain form of Water Users organizations are set-up to be sure the water users will have a body who can coordinate and handle individual and collective water issues with the private operator and the contracting authority.

Needs for Credit Facilities

One of the participant remind that credit facilities to private sector are a very important mean of production for smallholders farmers.

What would be the impact of the SVIP in Regional energy balance

The consultant explained that Illovo and Kasinthula when connected to SVIP high canal would reduce their electricity consumption. Impacts on power generation at Kapichira at to be assessed.

What are the Smallholder Benefits from a PPP Contract?

The consultant explained that the government needs private funding to implement the project, that the first objective for all the stakeholders, that the project becomes reality. The smallholders will take advantage of the SVIP through the PPP contract for irrigation services and “non - irrigation” services to have the opportunities for opening up their irrigation schemes, which otherwise would not have been opened. The agribusiness companies (non – irrigation services) would provide improvement of farmers revenues with development of new chain values of more profitability than the food crops.

The proposal made by a US Company is a PPP or not ?

One participant explained that a US company at request of communities through an NGO would develop a community irrigation scheme, use the scheme to recoup its capital funds and hand over the irrigation scheme to the community thereafter. The consultant replied that PPP is defined when a private company, under agreement with Government or its agent, is providing a public service for users. In this case, the private company is not providing public service to the local community under an agreement with Government.

What could be the Role of NGO in the SVIP with a PPP Contract ?

The consultant replied that NGOs could be provider of “non - irrigation” services, including extension services, branding of produce, like NASFRAM. Health services, water sanitation and health hygiene education, health services, etc.

NASFARM representative asked who would be responsible for land acquisition between Government and private sector investing in the project. The questions had several comments on problems of land acquisition by individual private investors. In this regard, the forum felt that land management should be thoroughly examined and come up with a workable land acquisition system that probably be headed by government or its agents rather than every private sector acquiring land on their own.

## 8.2 LIST OF PARTICIPANTS

Entity	Surname	Name	Position	Cell phone	E-mail
<b>Ministry of Irrigation and Water Resources</b>					
	Mwepa	Geoffrey	Deputy Director Irrigation Service	0.993.44.34.56	<a href="mailto:gmwepa@gmail.com">gmwepa@gmail.com</a>
<b>Africare Malawi</b>					
	Mzungu	Maggie	Senior Program Manager	0.888.898.973	<a href="mailto:maggie@aficare.mw.org">maggie@aficare.mw.org</a>
<b>JICA</b>					
	Kachula	Thenford	Infrastructure Manager	0.888.52.63.05	<a href="mailto:thenford_kachulu@wvi.org">thenford_kachulu@wvi.org</a>
<b>EU Delegation</b>					
	Gruenewald	Ilona	Rural Devt Program	0.999.45.51.47	<a href="mailto:ilona.gruenewald@ec.europa.org">ilona.gruenewald@ec.europa.org</a>
<b>NASFARM</b>					
	Kamkangadza	Fidelis	Farmer	0.993.16.37.48	
	Fulu	Winston	Diversification manager	0.888.57.21.98	<a href="mailto:wfiulu@nasfarm.org">wfiulu@nasfarm.org</a>
	Alexander	Omdamkomo	Farmer	0.999.35.59.90	
	Lasford	Kholowa	Farmer	0.995.55.56.70	
	Lickias	Dimnedenga	Farmer	0.995.30.05.63	

## 9. SESSION 10: DONORS

### INSTITUTIONS INVITED:

Target Audience	Invitees
USAID	1. Agriculture 2. Water/rural development
UKAID	1. Agriculture 1. Water/rural development
EU	1. Agriculture 1. Water/rural development
AfDB	1. Agriculture 1. Water/rural development
World Bank	1. Agriculture 1. Water/rural development
JICA	1. Head of JICA
Flanders International Cooperation Agency, FICA	1. Head of FICA

**PLACE AND DATE: WORLD BANK CONFERENCE ROOM, LILONGWE – 19<sup>TH</sup> OF NOVEMBER.**

### 9.1 SUMMARY OF DISCUSSIONS

The presentation was carried out as per presentation described in section 1.1. The Q&A proceeded as follows:

#### West Delta project:

A comment was made that the public subsidy to the capital costs for West Delta PPP in Egypt is covered totally by a concessional loan at 5% on 20 years.

#### Experience of PPP in irrigation sector in Southern Africa

A comment was made that the consultant was not presenting examples of PPP in irrigation sector coming from the southern Africa. The consultant replied that there was no knowledge of any PPP in this sector in the region. There are different experiences of partnership between private sectors (Kasinthula and Illovo, for example, or other experience of contract farming in South Africa), but not PPP like the ones presented for Morocco, Ethiopia, Brazil and Egypt.

### Water Users Association:

There was a question on whether WUA could be used in PPP. The discussion issued to the effect that WUA were considered not effective enough in operation and maintenance of irrigation schemes because of limited legal mandate over ownership of the irrigation schemes. This was blamed on the clauses in Irrigation Act that were not effective in giving them such mandate. It was also mentioned that the Water Resources Bill contained provisions that would give WUA needed mandate, as the Bill referred to WUA for multipurpose use (irrigation, water supply, fisheries development, etc.) of water resources. It was also mentioned that the Bill once enacted would be supreme to Irrigation and Waterworks Acts in as far as regulating management and utilisation of water resources.

### Irrigation Act vs Water Resources Bill 2010

Clarification was sought as to whether the Water Resources Bill 2010 will replace the Irrigation Act. In response, it was pointed out that the Water Resources Bill seeks to repeal the existing Water Resources Act and put in place a new regime to govern the management, conservation, use and control of water resources, including acquisition and regulation of rights to use water. The draft Bill will apply across all water related sectors, including irrigation. On the other hand, the Irrigation Act specifically addresses the question of sustainable development and management of irrigation

### Risk on Tariff and presence of a regulator

Both the 2008 and 2010 PPP Bills (Clauses 28 and 70) provide that the respective responsible sector regulators shall subject PPP arrangements to consistent regulation to ensure that the PPP arrangements are being managed in such a way that they are achieving the purpose for which they were established and are giving maximum returns. Clearly, the Bills do not require that there should be a regulator for each sector. However, the provision implicitly raises the question of what is to happen where a sector does not have a regulator as such.

The discussed erupted on whether lack of irrigation services regulatory agency was a weaknesses or strength for PPP. It was felt that irrigation fees should be regulated by the PPP contract with a private operator and not depends on regulator decisions.

### Acceptability by the communities of the Illovo proposal for expansion of sugar cane areas

Participants expressed doubts that the community in the SVIP area will adhere to the Illovo proposal (i.e. that the Illovo Group get a lease on 1,000 ha, equip the whole area, and hand over 100 ha to a Cane Growers Trust or manage these 100 ha on behalf of a Community Trust to grow sugar cane and another provide water irrigation of 100 hectares for growing food crops by the community that has surrendered their land to Illovo ).

### Expansion of sugar cane areas

A comment was made that the consultant should not only consider the expansion of Illovo Group as a unique and only possibility as the GoM may decide to promote this expansion for other company of the sector.

### Possibility of savings in labour for sugar cane

A participant commented that Illovo may benefit on labour savings if connected to the SVIP canal / pipe and shift to centre pivot (instead of furrow).

### Existence of a small scale project of rice

A participant reminded the meeting that a small project of rice production is supported by the World Bank on right bank of the Shire River, opposite to Nchalo Estate.

### Mill capacity to absorb additional production of sugar cane

Another comment was that the current mill may not be able to absorb all the additional production that is envisaged for the Phase I through the development of Sugar Cane Growers Trust (like the “Kasinthula model”). In this regard other private companies may be solicited to invest in more mills.

### Creation of Shire Valley Irrigation Authority

A suggestion was made to consider in the institutional set-up of the SVIP the future creation of the Authority, taking into account the financial modelling that the private operator will have to pay the fee for raw water (abstraction of the river or at Kapichira reservoir).

## 9.2 LIST OF PARTICIPANTS

Entity	Surname	Name	Position	Cell phone	E-mail
<b>World Bank</b>					
	Waalewijn	Pieter	Irrigation specialist	0.999.02.20.85	<a href="mailto:pwaalewijn@worldbank.org">pwaalewijn@worldbank.org</a>
	Onimus	Francois	Senoir WR		<a href="mailto:fonimus@worldbank.org">fonimus@worldbank.org</a>
	Tchale	Hardwick	Agricultural economist	0.995.74.66.47	<a href="mailto:htchale@worldbank.org">htchale@worldbank.org</a>
<b>African Development Bank</b>					
	Bumbe Nkhoma	Benson	Infrastructure specialist	0.888.87.35.23	<a href="mailto:b.nkhoma@afdb.org">b.nkhoma@afdb.org</a>
<b>Privatization Commission</b>					
	Msusa	Charlie	Director, PPP Projects	0. 999.950.767	<a href="mailto:msusa@pcmalawi.org">msusa@pcmalawi.org</a>
	Sampson	Cezley	Senior PPP advisor	0.881.353.068	<a href="mailto:sampson@pcmalawi.org">sampson@pcmalawi.org</a>

Note : EU and JICA were present at the session n°9

## **Annex 3: Power point presentations presented at the Q&A sessions**

## Presentation and focused Questions & Answers Session - Introduction



November 2010

1

- Consultants from the french consulting company **BR**Lingénierie:
  - Team Leader: Rémi TRIER,
  - Water Resources Instit. Spec.: Osborne SHELA,
  - Legal expert: Kenyatta NYIRENDA,
  - Financial expert: Lowani MUNKHONDIA,
  - Socio-economic expert: Ian KUMWENDIA.

2

- BRLi contracted by the World Bank for a 4 months assignment with the main following objectives:
  - Conduct awareness raising and capacity strengthening activities among key line Ministries, private investors and water users (small and medium-scale farmers) about different options and modalities for **PPP in irrigation infrastructure development and management**;
  - Identify potentially promising and economically viable PPP options for the proposed **Shire Valley Irrigation Project** to inform the development of a specific PPP transaction model for this scheme.

3

- This session is part of the first objective of the assignment. A total of 10 sessions will be organized:
  - 5 in Lilongwé with line ministries, other institutions potentially interested, donors, public and private operators,
  - 4 in Shire Valley with potential beneficiaries of the Project and local institutions,
  - 1 in Dwangwa.

4



- This session is divided on 4 parts:
  - Part 1: General overview of PPP transaction,
  - Part 2: Current international experiences of PPP in irrigation sector,
  - Part 3: Analysis of strengths and weaknesses of the legal framework for development of PPP in irrigation sector in Malawi,
  - Part 4: Discussion on Shire Irrigation Valley Project case.

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PUBLIC PRIVATE PARTNERSHIP OPTIONS STUDY AND  
AWARENESS RAISING FOR IRRIGATION INVESTMENT IN  
MALAWI

**Presentation and focused  
Questions & Answers Session -  
Part 1 : General overview of PPP  
transaction**



November 2010

6

- A general definition:
  - **Public Private Partnership (PPP)** describes a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies.
  - PPP involves a **contract / agreement** between a public-sector authority and a private party, in which the private party provides a public service or project and assumes substantial financial, technical and operational **risks** in the project.

7

- A huge diversity of PPP transactions model according to:
  - The functions the Contracting Authority wants the private operator to be in charge,
  - The allocation of risks,
  - The origin of the revenues for the private operator.

8

Origine of revenues for private operator		
Services paid to the private operator by the final users (farmers) - Public Service Delegation (PSD)		
Services paid to the private operator by the Public Authority		

• ....to find the most suitable PPP transaction model to satisfy (for irrigation sector):

- Farmers objectives: have a trustable, performing and affordable Irrigation & Drainage Services,
- Public objectives: improve O&M services, guarantee maintenance of public assets, develop more rapidly new irrigation schemes, eliminate O&M subsidies, etc.
- Private objectives: get return on private funds invested and, if it is an agribusiness company, guarantee production for processing / marketing.

**Presentation and focused  
Questions & Answers Session -  
Part 2 : Current international  
experiences of PPP in irrigation  
sector**

**1. Morocco pioneers PPP development in the  
Irrigation Sector**

**2. The first PPP for irrigation, Guerdane Project**

**3. Morocco's firm intentions to develop more PPPs:  
Six feasibility studies launched in 2008-2010**

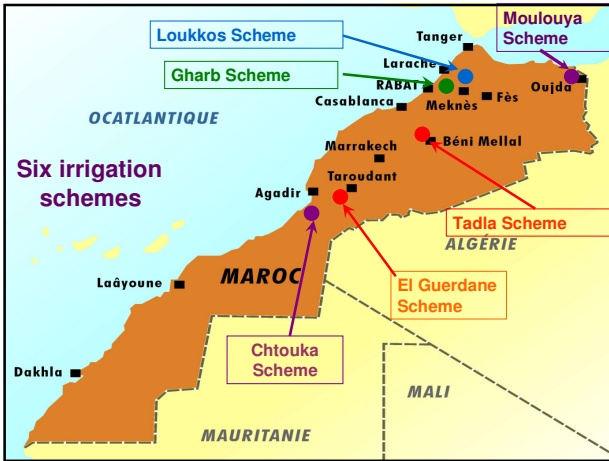
**4. Other Countries and Donors ' Initiatives**

**1. Morocco pioneers PPP development in the  
Irrigation Sector**

- There has been initiative in other countries (Brazil, Egypt, Chile, Ethiopia, etc.) but **Morocco** is the **first country in the world to get so far**.
- The main driving force: the **Government's firm intention** to modernise all Moroccan agriculture (the "**Green Morocco**" Plan):
  - PPP for irrigation services,
  - Are separated with other PPP contracts for supporting services to agricultural production for smallholders (aggregation contract)

**1. Morocco pioneers PPP development in the  
Irrigation Sector**

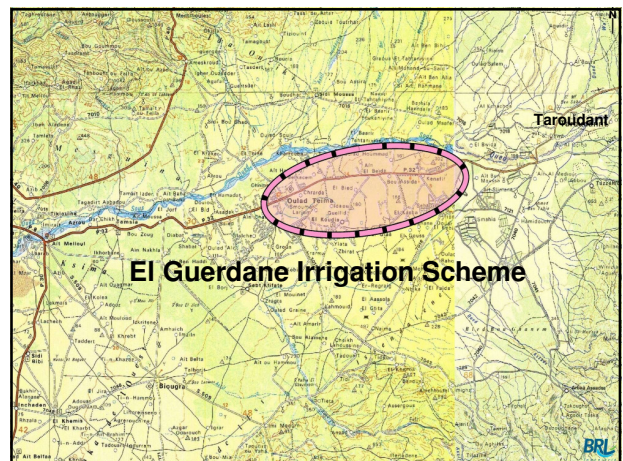
- **PPP focus on Large Scale Irrigation managed today by public agencies (500,000 ha),**
- **The Goals pursued by the public authorities:**
  - **Existing irrigation schemes:** delegation of water services management (operation, maintenance) in order to :
    - reduce the State budget,
    - improve the quality of the water services,
    - promote the modernisation of irrigated agriculture, etc.
  - **Irrigation Schemes to be built:**
    - private funding for scheme construction,
    - then delegation of water services management.



**BRL** **ingénierie** **Presentation**

- 1. Morocco pioneers PPP development in the Irrigation Sector**
- 2. The first PPP for irrigation, Guerdane Project**
- 3. Morocco's firm intentions to develop more PPPs: Six feasibility studies launched in 2008-2010**
- 4. Other Countries and Donors ' Initiatives**

6



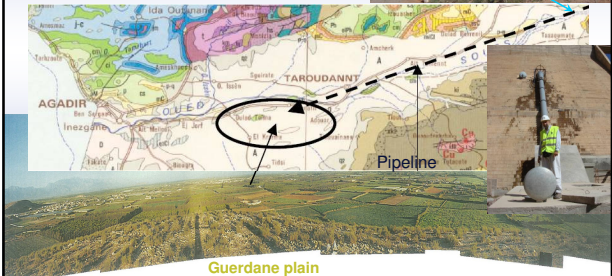
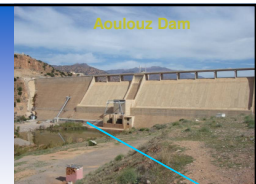
## 2. The first PPP for irrigation, Guerdane Project

- **The issues:** it is **more and more difficult and less and less affordable** for exporting orange farmers to use groundwater (individual pumping systems).



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Technical content of the project: construction of a **90 km pipeline** from Aoulouz dam to El Guerdane Plain and creation of an irrigation scheme.



Guerdane plain

## 2. The first PPP for irrigation, Guerdane Project

- **PPP transaction design:**
  - CAPEX of **80 million Euros** including contributions from the Moroccan government (51%, half of it is public subsidies, half concessionnal loans), from the private sector (11% of self-funded and 29% commercial loans) and the farmers (9% - connection charges),
  - Private has to contribute to a Renewal Fund up to Year 21 (15 M. of euros in total),
  - A **30 years** concession contract (**Public Service Delegation**) for private sector operation of the new scheme,
  - Private sector concession holder remunerated through irrigation water sales (around **0.18 euros/m3**).

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## 2. The first PPP for irrigation, Guerdane Project

- A bid was organized (based only on one criteria: the proposed irrigation fee), the private partner selected was the one who proposed the lowest irrigation fee.
- The contract was awarded to the Joint Venture « **AMENSOUSS** » :
  - ❖ Omnium North Africa (subsidiary Nareva – 71%),
  - ❖ Regional Fund Igrane (13%),
  - ❖ Inframan (15%),
  - ❖ BRL (1%).

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## 2. The first PPP for irrigation, Guerdane Project

### • First conclusions:

- Concession Contract signed on 2005 between private JV and regulating authority (Ministry in charge of Agriculture),
- Works concluded on 2010 (with total investments less than planned),
- Full water demand reached on first irrigation season on 2010,
- A « force majeure » event (floods) in 2010.  
=> Positive balance for all the stakeholders.

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**BRL**  
INGENIERIA

## Presentation

1. Morocco pioneers PPP development in the Irrigation Sector
2. The first PPP for irrigation, Guerdane Project
3. Morocco's firm intentions to develop more PPPs: Six feasibility studies launched in 2008-2010
4. Other Countries and Donors ' Initiatives

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## 3. Morocco's firm intentions to develop more PPPs: Six feasibility studies launched in 2008-2009

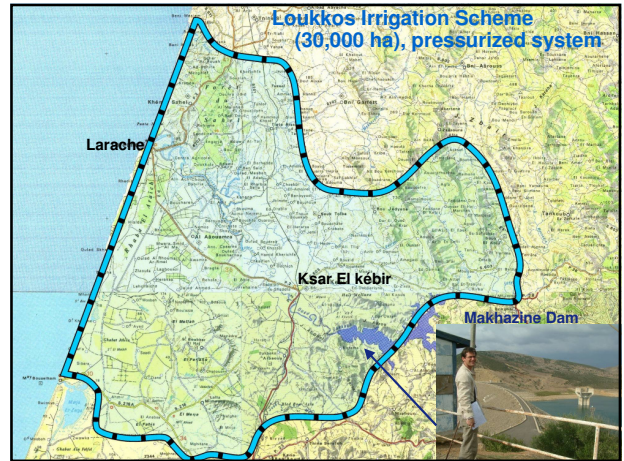
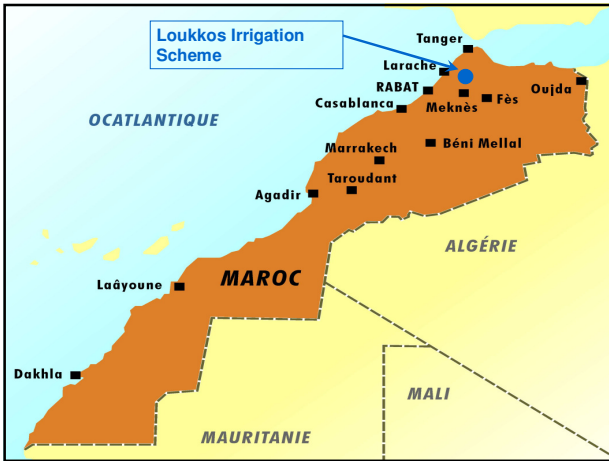
- Between mid 2008 and mid 2010, the Moroccan authorities ordered Six feasibility studies of PPP projects:
  - **Loukkos Irrigation Scheme** (existing IS)
  - **Tadla Irrigation Scheme** (existing IS)
  - **Doukkala Irrigation scheme** (existing IS)
  - **Gharb Irrigation scheme** (existing IS)
  - **Moulouya Irrigation scheme** (existing IS)
  - **Chtouka project** (new irrigation scheme to be supplied by desalinated water)

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## 3. Morocco's firm intentions to develop more PPPs: Six feasibility studies launched in 2008-2009

- **Multi-thematic studies:** legal, financial, institutional, technical (water resources, assessment of water infrastructure, O&M, etc.),
- **Duration of services:** 1.5 to 2 years, including studies and asset management assistance services to the public authorities in charge until the award of the concession contract,
- **BRLI involved in 5 studies in association** with French legal and finance consultants and Moroccan engineering consultants.

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**3. Morocco's firm intentions to develop more PPPs: Six feasibility studies launched in 2008-2009**

**Loukkos Irrigation Scheme**

**The issues:** the scheme already exists. There are **no limitation on water resources**, but a need to modernise the infrastructure (to **reduce energy consumption and restore service on demand**) through the PPP.

A collage of three images: a large dam with water, a canal with water flowing, and a close-up of strawberries on a plant.

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## Tadla Irrigation

The issues: the scheme already exists. **Severe limitations regarding water resources** but the cost of providing water and quality services is relatively low. The PPP essentially needs to modernise the scheme to achieve **water savings** (change of irrigation methods from gravity to drip systems).



## Moulouya Irrigation Scheme

The issues : very close to Tadla's one, existing scheme with **severe limitations regarding water resources**. The PPP essentially needs to modernise the scheme to achieve **water savings** (change of irrigation methods from gravity to drip systems).



## Chtouka Irrigation Scheme

The issues : existence of high value chain (tomatoes for exportation) threatened by over use of underground water (and scarcity of surface water).

PPP with a desalinization plant (250,000 m<sup>3</sup>/day) and a 10,000 ha irrigation scheme.



## 3. Morocco's firm intentions to develop more PPPs: Six feasibility studies launched in 2008-2009

- Time for Political decisions is coming now :
  - How to deal with irrigation schemes mixing smallholders and commercial farmers ?
    - Smallholders do not have the same willingness to have an improved O&M services,
    - And not the same capacity to pay than commercial farmers (need of intense support for smallholders development),
  - What the future of the public agencies (and its staff) in charge of current O&M in these irrigation schemes ?
  - Is the Government is ready to strongly subsidy some PPP contracts in order to attract investors (and decrease irrigation fees) ?

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BRL logo and Presentation title.

1. Morocco pioneers PPP development in the Irrigation Sector
2. The first PPP for irrigation, Guerdane Project
3. Morocco's firm intentions to develop more PPPs: Six feasibility studies launched in 2008-2009
4. Other Countries and Donors ' Initiatives

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## 4. Other Countries and Donors ' Initiatives

- Other countries are promoting PPP in irrigation in several countries with different PPP designs:
  - **Ethiopia:** Project on preparation for a 4,000 ha irrigation scheme for smallholders farmers (with no experience in irrigation activities) with two different contracts (to limit risks):
    - One for construction,
    - The second one (management contract, without any private investments in the construction) including supervision of the first contract and O&M functions (for a total of 8 years).

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#### 4. Other Countries and Donors ' Initiatives

- **Brazil:** Pontal project: Concession of 25 years including finalization of construction and O&M of 7,700 ha The profile of the private operator is required to be a Joint Venture between an agribusiness company and a construction and O&M company. The private operator is obliged to dedicate a minimum of the equipped area to smallholders (at least 25% of the area).

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#### 4. Other Countries and Donors ' Initiatives

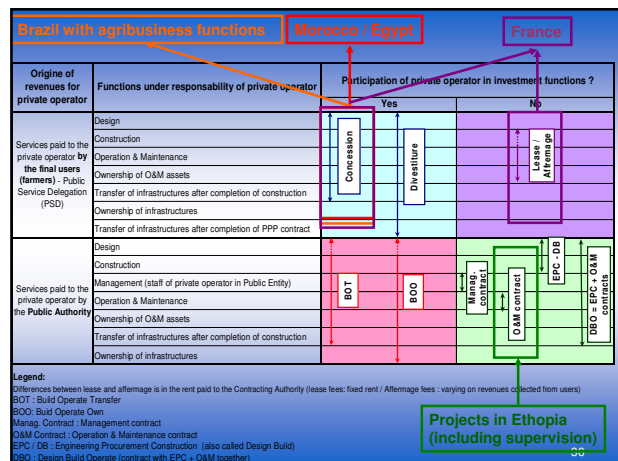
- **Egypt:** West Delta. Similar project to Guerdane one but with concession duration of 20 years and a higher public contribution for investments (85%).

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#### 4. Other Countries and Donors ' Initiatives

- **France:**
  - BRL was created in 1955 as a **Regional Development Authority** to promote the socio-economic development of the Languedoc Roussillon Region (large and complex system of large water infrastructures to bring water resources to the region for irrigation on 150,000 equipped ha, tourism and water supply purposes).
  - Today, BRL still owns, manages and operates under a concession contract of 75 years.
  - Its shareholders are public and private (including farmers): an original PPP.
- Etc.

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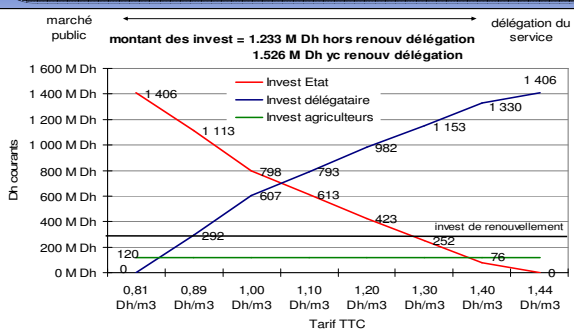
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**Thank you for your attention**

**3. Morocco's firm intentions to develop more PPPs:  
Six feasibility studies launched in 2008-2009**

- **High investment levels in PPP contracts:**
  - **Loukkos:** 100 M. euros (within PPP contract) with 40% for a gravity pipeline and 41% for extension of equipped area. And 60 M. euros (outside PPP contract) for microirrigation equipment (drip);
  - **Tadla:** 240 M. euros (within PPP contract) with 70% for rehabilitation / collective modernization + 221 M. euros (outside PPP) for microirrigation equipment (drip);
  - **Gharb:** 1,400 M. euros (within PPP contract) with 70% for extensions + 365 M. euros (outside PPP) for microirrigation equipment (drip).

**3. Morocco's firm intentions to develop more PPPs:  
Six feasibility studies launched in 2008-2009**



**Presentation and focused  
Questions & Answers Session -  
Part 3 : Analysis of strengths and  
weaknesses of the legal framework for  
development of PPP in irrigation sector  
in Malawi**

**Strengths (1):**

- *Constitutional guarantees* - it prohibits discrimination of persons in any form, it permits any person irrespective of nationality to acquire property, etc.
- Implementation of Private Sector Development Strategy – Government is committed to make private sector an engine for Malawi's development
- PPP Bill - PPP Bill demonstrates Government's commitment to PPPs. The Bill covers a number of relevant issues

**Strengths (2):**

- Enactment of Irrigation Act – Irrigation Policy to rank paramount in the business of the Government. The Act also makes provision regarding WUAs
- Malawi's Statement of Investment Policies proclaims freedom to invest (no restrictions on ownership, size of investment, etc)
- Incentives for private investment include Tax holidays, customs-duty and tax concessions and exemptions, Vat exemptions, investment tax allowance

**Strengths (3):**

- Limits on foreign investment are few
- Remittance of dividends, or the entire capital on disinvestment, is permissible through dealer bank
- Protection of Investment – Malawi is a member of MIGA and WTO. It is also a party to ICSID

### Weaknesses (1):

- Immigration and Labour – Difficulties in obtaining TEPs and BRPs
- Absence of regulator for PPP in Irrigation sector (MERA proposed to deal with water ?)

5

### Weaknesses (2):

- Lands: **Restriction on sale of land to foreigners by according priority (first option) to Malawians:** Many private sector investors have expressed concern with the promulgation of the Land Amendment Act 2004, which has introduced significant changes in the management of land. The changes include reducing the 99 leasehold tenure to 50 years and not permitting non-nationals to own freehold land. This is perceived by many foreign investors as a deterrent to investment in industries with long gestation periods. However, it is worthy noting that the land policy encourages noncitizens wishing to invest in freehold land to do so in joint venture with citizens of Malawi as part of the Government's economic empowerment initiative

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### Weaknesses (3):

- Monopoly of Illovo on sugar production ??? The Competition and Fair Trading Act is meant to dealing with such matters.
- Possible concerns by commercial users about tariffs and prices increasing or becoming unaffordable
- Possible concern by land owners about being forced to sell land and having to relocate
- Possible concern by CBOs and NGOs about environmental impacts, relocation impacts, etc

7

### Weaknesses (4):

- Possible concerns by private investors about the bankability of the proposed PPP project
- Commitment by Government to provide a subsidy
- Tariffs – there is a multiplicity of laws that would appear to apply to the question of setting tariff. Regulation of tariff needs to be governed by clear and transparent procedures

8

**Presentation and focused  
Questions & Answers Session -  
Part 4 : Discussion on SVIP case**

## Presentation

1. Main features of the Shire Valley Irrigation Project

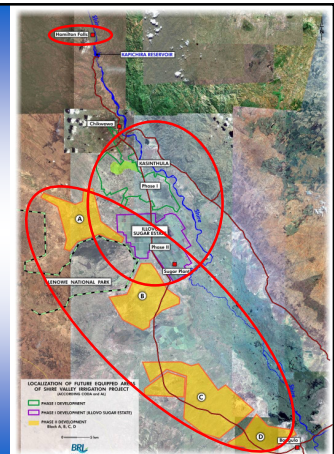
2. Design of PPP transaction models

### 1. Main features of the Shire Valley Irrigation Project

- Designs of the Project:
  1. A first study performed by Coda / Ninham Shand (2005-2008),
  2. A quick review done by Coyne & Bélier in 2010,
  3. A design study update will be done with ADB funds.

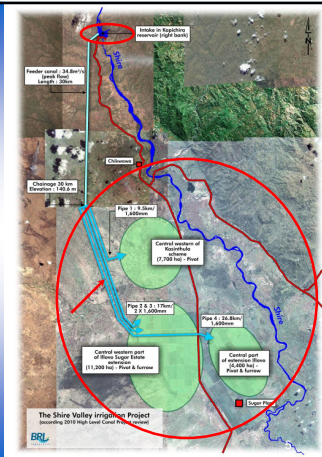
### First feasibility study (Coda and al.)

- Intake at Hamilton falls,
- Feeder canal with 55 m<sup>3</sup> / s,
- First Phase of 17,320 ha with sugar cane (9,200 ha) and other crops (maïze, rice, sorghum),
- Second Phase with no sugar cane, only maïze, cotton, vegetable, etc.



### 2010 Review of feasibility study (Coyne et Béliet)

- Intake at Kapichira reservoir,
- Shorter (9 km) and smaller feeder canal with 35 m<sup>3</sup>/s,
- First Phase of 23,300 ha with only sugar cane,
- Secondary distribution on pipes to three different areas with pressurized water (electricity savings for Illovo of 300 USD/ha),
- Second Phase not detailed in this review but with the main Bangula canal with 15.5 m<sup>3</sup>/s.

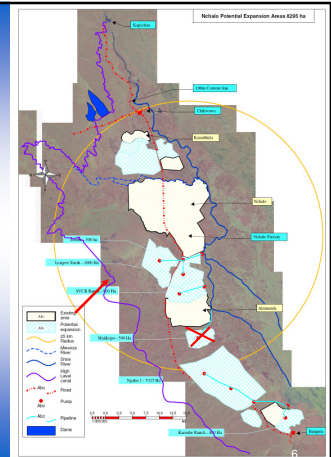


### Illovo presentation of expansion:

A total of 8,295 ha and expansion of Nchalo mill).

Expansion strategy will be different:

- without High Level Canal:** will look for lands close to Shire river for pumping.
- with High Level Canal:** look for land close to canal and with difference of level,



## 1. Main features of the Shire Valley Irrigation Project

- Issues to be clarified with the Design Study Update to be done (with inputs of PPP study):
  - Intake location: Hamilton or Kapichira.
  - Size and course of feeder canal (High Level option or not), => Costs for intake and feeder canal: 143 M.USD (Coda) / 68 M. USD (Coyne et Béliet).
  - Secondary distribution (canal vs pipe),
  - Land management issue ?
  - Impacts on water resource, energy balance in the region, environment, etc. ?
  - Role of WUA (if pressurized system= low)?
  - Final PPP transaction design ?

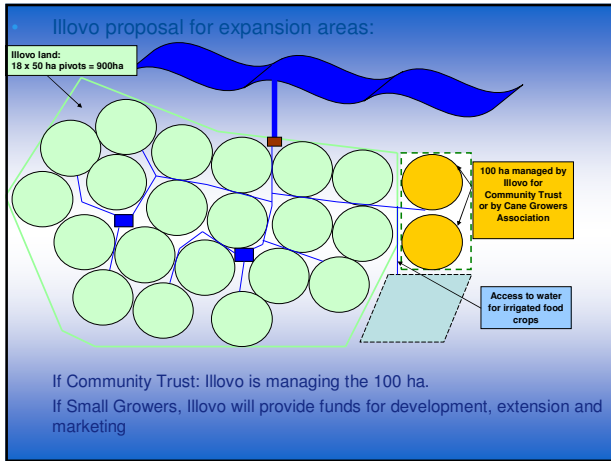
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## Phase I orientation, beneficiaries of the SVIP?

- Sugar Cane will be the predominant crop:
  - Illovo existing areas in Phase I: 10,500 ha;
  - Illovo's objectives of expansion: 1,150 ha out of the 8,000 ha are in Phase I area. Possibility of development of outgrowers in these areas with Illovo support,
  - Kasinthula's objectives of expansion (400 ha in Phase III and more 2,500 ha based on local demand);
  - Strong local demand for development of outgrowers like « Kasinthula model »,
- Diversified chain value for other commercial crops will have to be developed from nothing (no successful experience in SVIP areas).
- Irrigated Food Crops has to be considered in land use.

8





Land use for **Phase I** in our financial simulation could be the following:

Phase I	Sugar cane (ha)						New areas with diversified crops (ha)			Total in ha	
	Illovo Group areas		Shire Valley Growers Trust areas		Sugar cane outgrowers		Commercial crops	Irrigated food crops			
	Existing area	Illovo Expansion	Existing area	Expansion	On Illovo expansion	New areas		On Illovo areas expansion	On sugar cane outgrowers areas		Other
Kasinthula area - pipe 1	456	485	205	2 930	51	1 000	1 000	24	75	420	7 200
Nchalo - pipe 2	3 342	-	-	-	-	1 500	300	-	75	383	5 600
Nchalo - pipe 3	3 342	-	-	-	-	1 500	300	-	75	383	5 600
Nchalo - pipe 4	3 342	642	-	-	71	258	1 600	32	15	-	4 400
<b>Total (in ha)</b>	<b>10 480</b>	<b>1 127</b>	<b>155</b>	<b>2 930</b>	<b>125</b>	<b>4 758</b>	<b>1 600</b>	<b>56</b>	<b>240</b>	<b>1 219</b>	<b>23 300</b>
%	45%	5%	2%	13%	1%	21%	7%	0%	1%	5%	100%
		50%		16%		87%	7%			13%	100%

Land use for **Phase II** could be done with more diversified crop (70% sugar cane / 30% other)

Phase II	Sugar cane (ha)						New areas with diversified crops (ha)			Total in ha
	Illovo Group areas		Sugar Cane outgrowers		Commercial crops	Irrigated food crops				
	Existing area	Illovo Expansion	On Illovo expansion	New areas		On Illovo areas expansion	On sugar cane outgrowers areas	Other		
Aluminda	2 851	-	-	-	-	-	-	-	-	2 851
Kaombe	827	-	-	-	-	-	-	-	-	827
Other areas	3 688	6 981	776	3 000	4 000	349	150	1 000	150	16 255
<b>Total (in ha)</b>	<b>3 688</b>	<b>6 981</b>	<b>776</b>	<b>3 000</b>	<b>4 000</b>	<b>349</b>	<b>150</b>	<b>1 000</b>	<b>150</b>	<b>19 943</b>
%	18%	35%	4%	15%	20%	2%	1%	5%	1%	100%
		53%		19%	20%			6%		100%
				72%				28%		100%

Land use for **all SVIP**:

Total SVIP	Sugar cane (ha)						New areas with diversified crops (ha)			Total in ha
	Illovo Group areas		Sugar Cane outgrowers		Commercial crops	Irrigated food crops				
	Existing area	Illovo Expansion	On Illovo expansion	New areas		On Illovo areas expansion	On sugar cane outgrowers areas	Other		
Phase I	10 480	1 127	125	4 798	1 600	56	240	1 219	23 300	
Phase II	3 688	6 981	776	3 000	4 000	349	150	1 000	19 943	
<b>Total (in ha)</b>	<b>14 168</b>	<b>8 108</b>	<b>901</b>	<b>7 798</b>	<b>5 600</b>	<b>405</b>	<b>390</b>	<b>2 219</b>	<b>43 243</b>	
%	33%	19%	2%	18%	13%	1%	1%	5%	100%	
		52%		30%	13%			20%	100%	
				80%				20%	100%	

**BRL**  
Ingeniería

# Presentation

1. Main features of the Shire Valley Irrigation Project
2. Design of PPP transaction models

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**First issue is to decide on what functions will be solicited the private operator:**

Potential Functions under responsibility of private operator	Options for PPP transaction models				

## 2. Design of PPP transaction models

- From these PPP options can be developed sub-options using different ways of allocating risks between private and public parties:
  - Demand risk:** when demand for irrigation services will be lower than expected,
  - Payment risk:** when farmers do not pay for the irrigation and drainage services provided.

**Different types of Non-irrigation services PPP:**

Functions for supporting services to agricultural production	Services provided by agribusines companies				Services done by private providers
	With farm land acquired by agribusines company from the local community and / or from Government		Without farm land acquired (contract farming)		
	1- Sugar Cane Chain Value (Illovo proposal)	2- Other chain value	3- Other chain value	4- Other chain value	
	With Community Trust	With Small Growers Association			
<b>Irrigable areas development for smallholders and outgrowers</b>					
Areas for Commercial crops	Full development by the Agribusines Company		Agribusines / beneficiaries / Public / Donors ?	Agribusines / beneficiaries / Public / Donors ?	Beneficiaries / Public / Donors ?
Areas for Irrigated Food Crops	Bulk water assets by Agribusines company / On-field investments by Govt & Donors				
<b>Management of production in smallholders land</b>	Agribusines company	Smallholders organization	Smallholders in general	Smallholders in general	Smallholders in general
<b>Support to inputs supply</b>					
Irrigation services	-	Smallholders Organization / Agribusines company	Agribusines company or Private operator for O&M	Agribusines company or Private operator for O&M	-
Other inputs supply	-	Smallholders organization			Private provider
Extension services	-	Agribusines company	Agribusines company	Agribusines company	Private provider
Support to processing & marketing	-	Agribusines company			Private provider

- **Second Issue** is to decide if PPP for irrigation and non-irrigation services will be separated or not ?.
- To have together means:
  - **limit the development** of supporting services because only one contract is awarded although, in theory, there is a potential for development of several chain value of cash crops,
  - risk of selection of **a not performing operator** for the non-irrigation services,
  - generate **dependence for smallholders**: water and all the other inputs and services will be provided by the private company,
  - create some difficulties for **elaboration, negotiation and regulation** of contract having two very different activities

- **The consultant recommend to separate contracts of irrigation and non-irrigation services** which allow the contracting authority (ies):
  - to have **one private partner for irrigation services** (selected on the best proposal),
  - to have one **or several partners (agribusiness companies) for aggregation PPP contracts**. Could be done on simplified procedures (call for proposals) with flexibility according interest of the project for the public party.

• **Third issue** is to decide how the **investment functions** is shared between stakeholders:

=> Will be done in our assignment

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## 2. Design of PPP transaction models

- **Fourth issue** is for the **institutional design** of the PPP:
  - Most of this design will be consequence of previous decisions (on functions and risk allocation),
  - Nevertheless, some important issues will need decisions:
    - Which institution will be the **Contracting Authority** (public): an existing one (MIWD, Malawi Water & Energy Regulatory Authority), a new institution with broader mandate (Valley Authority, etc.)?
    - The **Special Purpose Vehicule** created for the implementation of the PPP contract will be with only private shareholders, or mixed (public and private) ?
    - Which institution will be in charge of **land issues**, agricultural services for smallholders and other functions outside PPP contract ?

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## 2. Design of PPP transaction models

- **Next steps of the process:**
  - Based on the results of these 10 Q&A sessions, this study will provide several potential PPP transaction models including SWOT analysis for each option and financial simulations,
  - After this, the main stakeholders will be able to select a PPP transaction model :
    - To be considered in the design study update and;
    - To be detailed in a feasibility study for PPP (as mentioned in Article 26 of the draft PPP Bill) including also activities of: i) elaboration of contracting documents, ii) promotion of the Project, iii) support to the Contracting Authority for bidding process, etc.

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**Thank you for your attention**

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## **Annex 4: Detail of financial simulation**

## 5.1 DETAILS OF AREAS FOR PHASE I

Areas - Phase I			Years																				
	Type of irrigation	Max area	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<b>With project (Phase I)</b>																							
<b>Pipe 1 - 7,700 ha</b>		<b>7 700</b>	-	-	3 887	5 200	6 250	7 000	7 700	7 700	7 700	7 700	7 700	7 700	7 700	7 700	7 700	7 700	7 700	7 700	7 700	7 700	7 700
Sugar cane - KCG (existing areas - 755 ha)	Mixed	755			755																		
Sugar cane - KCG (expansion - Ph III EU)	Mixed	400			400																		
Sugar cane - KCG (expansion - local demand)	Pivot	2 500			500	500	500	500															
Sugar cane - Illovo (existing areas)	Pivot	454			454																		
Sugar cane - Illovo (expansion areas)	Pivot	485			485																		
Sugar cane - Outgrowers (on Illovo expansion)	Mixed	54			54																		
SC other outgrowers or companies (new areas)	Mixed	1 300			500	500	300																
Commercial crops (new areas)	Mixed	1 200			250	250	250	200															
Irrigated Food Crops (on Illovo expansion)	Furrow	24			24																		
Irrigated Food Crops (on SC Outgrowers expansion)	Furrow	65			65																		
Other Irrigated Food crops	Furrow	463			400	62																	
<b>Pipe 2 - 5,600 ha</b>		<b>5 600</b>	-	-	3 962	4 582	5 300	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600
Sugar cane - Illovo (existing areas)	Mixed	3 342			3 342																		
Sugar cane - Illovo (expansion areas)	Pivot	-																					
Sugar cane - Outgrowers (on Illovo expansion)	Mixed	-																					
SC other outgrowers or companies (new areas)	Mixed	1 200			500	500	200																
Commercial crops (new areas)	Mixed	600					300	300															
Irrigated Food Crops (on Illovo expansion)	Furrow	-																					
Irrigated Food Crops (on SC Outgrowers expansion)	Furrow	60			20	20	20																
Other Irrigated Food crops	Furrow	398			100	100	198																
<b>Pipe 3 - 5,600 ha</b>		<b>5 600</b>	-	-	-	3 962	5 080	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600	5 600
Sugar cane - Illovo (existing areas)	Mixed	3 342				3 342																	
Sugar cane - Illovo (expansion areas)	Pivot	-																					
Sugar cane - Outgrowers (on Illovo expansion)	Mixed	-																					
SC other outgrowers or companies (new areas)	Mixed	1 200				500	500	200															
Commercial crops (new areas)	Mixed	600					300	300															
Irrigated Food Crops (on Illovo expansion)	Furrow	-																					
Irrigated Food Crops (on SC Outgrowers expansion)	Furrow	60				20	20	20															
Other Irrigated Food crops	Furrow	398				100	298																
<b>Pipe 4 - 4,400 ha</b>		<b>4 400</b>	-	-	-	4 060	4 400	4 400	4 400	4 400	4 400	4 400	4 400	4 400	4 400	4 400	4 400	4 400	4 400	4 400	4 400	4 400	4 400
Sugar cane - Illovo (existing areas)	Mixed	3 342				3 342																	
Sugar cane - Illovo (expansion areas)	Pivot	642				500	142																
Sugar cane - Outgrowers (on Illovo expansion)	Mixed	71				71																	
SC other outgrowers or companies (new areas)	Mixed	298				100	198																
Commercial crops (new areas)	Mixed																						
Irrigated Food Crops (on Illovo expansion)	Furrow	32				32																	
Irrigated Food Crops (on SC Outgrowers expansion)	Furrow	15				15																	
Other Irrigated Food crops	Furrow																						
<b>TOTAL with project</b>		<b>23 300</b>	-	-	7 849	17 804	21 029	22 599	23 299	23 299	23 299	23 299	23 299	23 299	23 299	23 299	23 299	23 299	23 299	23 299	23 299	23 299	23 299

## 5.2 DETAILS OF AREAS FOR PHASE II

Areas - Phase II			Years																				
	Type of irrigation	Max area	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<b>With project (Phase II)</b>																							
Sugar cane - Illovo (existing areas - Alumenda)	Pivot	2 861					2 861																
Sugar cane - Illovo (existing areas - Kaombe)	Pivot	827					827																
Sugar cane - Illovo (expansion areas)	Pivot	6 981					3 000	3 000	981														
Sugar cane - Outgrowers (on Illovo expansion)	Mixed	776					200	200	200	176													
SC other outgrowers or companies (new areas)	Mixed	2 000					1 000	1 000															
Commercial crops (new areas)	Mixed	3 600					1 000	1 000	1 000	600													
Irrigated Food Crops (on Illovo expansion)	Furrow	349					100	100	100	49													
Irrigated Food Crops (on SC Outgrowers expansion)	Furrow	100					100	-															
Other Irrigated Food crops	Furrow	507					250	257															
<b>TOTAL with project</b>		<b>18 000</b>	-	-	-	-	<b>9 338</b>	<b>14 895</b>	<b>17 176</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	<b>18 000</b>	

### Hypothesis

Sugar cane - Outgrowers (on Illovo expansion)	=	11% of Illovo expansion areas
Irrigated Food Crops (Illovo expansion)	=	5% of Illovo expansion areas
Irrigated Food Crops (on SC Outgrowers expansion)	=	5% of Sugar cane outgrowers areas

### 5.3 HYPOTHESIS AND DETAILED CAPEX

In Th USD

					Years																				
Intake & Phase I	Who will pay ?	Unit cost	Quantity	Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Intake	PPP contract			5 213		2 606	2 606																		
Feeder canal (Phase I) - 35 m3/s - 30 km	PPP contract			63 022	31 511	31 511																			
Pipe 1 - 7,700 ha pivot (optimized)	PPP contract	3 000	7 700	23 100																					
Pipe 2 - 5,600 ha (optimized)	PPP contract	3 000	5 600	16 800																					
Pipe 3 - 5,600 ha (optimized)	PPP contract	3 000	5 600	16 800																					
Pipe 4 - 4,400 ha (optimized)	PPP contract	3 000	4 400	13 200																					
Illovo on-field equipment for existing areas (costs for connection to SVIP)	Illovo	1 872	10 480	19 618			7 106	12 513																	
Illovo tertiary and on-field works and equipment for expansion areas	Illovo	6 800	1 127	7 666			3 301	3 400	965																
KCG tertiary and on-field works and equipment for existing areas	KCG / Public (donors)	1 872	755	1 413	1 413																				
KCG tertiary and on-field works and equipment for expansion areas	KCG / Public (donors)	6 800	2 900	19 720			6 120	3 400	3 400	3 400	3 400														
Outgrowers (on Illovo expansion) tertiary and on-field works and equipment	Illovo	6 800	125	852			367	483																	
Other outgrowers areas tertiary and on-field works and equipment	Public/donors	6 800	3 998	27 185			6 800	10 880	8 145	1 360															
Commercial crops areas tertiary and on-field works and equipment	Agribusiness / Public (donors)	6 800	2 400	16 320			1 700	1 700	5 780	5 780	1 360														
Tertiary and on-field works and equipment for irrigated food crops	Public/donors	6 800	1 515	10 304			4 463	2 056	3 645	136															
<b>Total Intake + Phase I</b>			<b>23 300</b>	<b>241 212</b>	<b>35 531</b>	<b>74 017</b>	<b>59 855</b>	<b>34 432</b>	<b>21 935</b>	<b>10 676</b>	<b>4 760</b>														

					Years																				
Phase II	Who will pay ?	Unit cost	Quantity	Total	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Bangula canal	PPP contract			114 341		38 114	38 114	38 114																	
Pipes (optimized)	PPP contract	3 000	18 000	54 000		18 000	18 000	18 000																	
Illovo tertiary and on-field works and equipment for existing areas (costs for connection to SVIP)	Illovo	1 872	3 688	6 904					6 904																
Illovo tertiary and on-field works and equipment for expansion areas	Illovo	6 800	6 981	47 468					20 400	20 400	6 668														
Outgrowers (on Illovo expansion) tertiary and on-field works and equipment	Illovo	6 800	776	5 274					1 360	1 360	1 360	1 194													
Other outgrowers areas tertiary and on-field works and equipment	Public/donors	6 800	2 000	13 600					6 800	6 800															
Commercial crops areas tertiary and on-field works and equipment	Agribusiness / Public (donors)	6 800	3 600	24 480					6 800	6 800	6 800	4 080													
Tertiary and on-field works and equipment for irrigated food crops	Public/donors	6 800	956	6 501					3 060	2 428	680	333													
<b>Total Phase II</b>				<b>272 568</b>		<b>56 114</b>	<b>56 114</b>	<b>56 114</b>	<b>45 324</b>	<b>37 788</b>	<b>15 508</b>	<b>5 608</b>													

					Years																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032			
Phase I	241 206	35 531	74 017	59 855	34 432	21 935	10 676	4 760	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phase II	272 568	-	56 114	56 114	45 324	37 788	15 508	5 608	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>513 774</b>	<b>35 531</b>	<b>130 131</b>	<b>115 969</b>	<b>90 546</b>	<b>67 259</b>	<b>48 464</b>	<b>20 268</b>	<b>5 608</b>															
		7%	25%	23%	18%	13%	9%	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



## 5.4 ESTIMATE OF VOLUME OF WATER DISTRIBUTED IN PHASE I

Volumes sold by operator to farmers (Hm3 / year)

	Type of irrigation	m3/ha	Years																			
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
<b>Phase I</b>																						
<b>Pipe 1 - 7,700 ha</b>			-	-	82	109	130	145	159	159	159	159	159	159	159	159	159	159	159	159	159	159
Sugar cane - KCG (existing areas - 755 ha)	Mixed	21 889	-	-	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Sugar cane - KCG (expansion - Ph III EU)	Mixed	21 889	-	-	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Sugar cane - KCG (expansion - local demand)	Pivot	18 800	-	-	9	19	28	38	47	47	47	47	47	47	47	47	47	47	47	47	47	47
Sugar cane - Illovo (existing areas)	Pivot	18 800	-	-	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Sugar cane - Illovo (expansion areas)	Pivot	18 800	-	-	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Sugar cane - Outgrowers (on Illovo expansion)	Mixed	21 889	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sugar cane - other outgrowers (new areas)	Mixed	21 889	-	-	11	22	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
Commercial crops (new areas)	Mixed	21 889	-	-	5	11	16	22	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Food Crops (on Illovo expansion)	Furrow	23 752	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Food Crops (on SC Outgrowers expansion)	Furrow	23 752	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Other Irrigated Food crops	Furrow	23 752	-	-	10	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
<b>Pipe 2 - 5,600 ha</b>			-	-	87	101	117	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123
Sugar cane - Illovo (existing areas)	Mixed	21 889	-	-	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Sugar cane - Illovo (expansion areas)	Pivot	18 800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sugar cane - Outgrowers (on Illovo expansion)	Mixed	21 889	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sugar cane - other outgrowers (new areas)	Mixed	21 889	-	-	11	22	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Commercial crops (new areas)	Mixed	21 889	-	-	-	-	7	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Food Crops (on Illovo expansion)	Furrow	23 752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Food Crops (on SC Outgrowers expansion)	Furrow	23 752	-	-	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Other Irrigated Food crops	Furrow	23 752	-	-	2	5	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
<b>Pipe 3 - 5,600 ha</b>			-	-	87	112	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123	123
Sugar cane - Illovo (existing areas)	Mixed	21 889	-	-	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Sugar cane - Illovo (expansion areas)	Pivot	18 800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sugar cane - Outgrowers (on Illovo expansion)	Mixed	21 889	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sugar cane - other outgrowers (new areas)	Mixed	21 889	-	-	11	22	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Commercial crops (new areas)	Mixed	21 889	-	-	-	-	7	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Food Crops (on Illovo expansion)	Furrow	23 752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Food Crops (on SC Outgrowers expansion)	Furrow	23 752	-	-	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Other Irrigated Food crops	Furrow	23 752	-	-	2	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
<b>Pipe 4 - 4,400 ha</b>			-	-	1	89	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96	96
Sugar cane - Illovo (existing areas)	Mixed	21 889	-	-	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Sugar cane - Illovo (expansion areas)	Pivot	18 800	-	-	9	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Sugar cane - Outgrowers (on Illovo expansion)	Mixed	21 889	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Sugar cane - other outgrowers (new areas)	Mixed	21 889	-	-	2	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Commercial crops (new areas)	Mixed	21 889	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Food Crops (on Illovo expansion)	Furrow	23 752	-	-	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Food Crops (on SC Outgrowers expansion)	Furrow	23 752	-	-	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Other Irrigated Food crops	Furrow	23 752	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>TOTAL (in Hm3)</b>			-	-	170	385	455	488	501	501	501	501	501	501	501	501	501	501	501	501	501	501

## 5.5 ESTIMATE OF VOLUME OF WATER DISTRIBUTED IN PHASE II

### Volumes sold by operator to farmers (Hm3 / year)

Phase II	Type of irrigation	m3/ha	Years																				
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Sugar cane - Illovo (existing areas - Alumenda)	Pivot	18 800	-	-	-	-	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Sugar cane - Illovo (existing areas - Kaombe)	Pivot	18 800	-	-	-	-	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Sugar cane - Illovo (expansion areas)	Pivot	18 800	-	-	-	-	56	113	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
Sugar cane - Outgrowers (on Illovo expansion)	Mixed	21 889	-	-	-	-	4	9	13	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Sugar cane - other outgrowers (new areas)	Mixed	21 889	-	-	-	-	22	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Commercial crops (new areas)	Mixed	21 889	-	-	-	-	22	44	66	79	79	79	79	79	79	79	79	79	79	79	79	79	79
Irrigated Food Crops (on Illovo expansion)	Furrow	11 972	-	-	-	-	1	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Irrigated Food Crops (on SC Outgrowers expansion)	Furrow	11 972	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Other Irrigated Food crops	Furrow	11 972	-	-	-	-	3	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
<b>TOTAL (in Hm3)</b>			-	-	-	-	<b>179</b>	<b>288</b>	<b>334</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>	<b>352</b>

## 5.6 ESTIMATE OF VOLUME OF WATER DISTRIBUTED FOR PHASE I AND II

### Volumes sold by operator to farmers (Hm3 / year)

Phase I and II	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Sugar cane - Illovo (existing areas)	-	-	82	228	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297	
Sugar cane - Illovo (expansion areas)	-	-	9	18	77	134	152	152	152	152	152	152	152	152	152	152	152	152	152	152	152	
Sugar cane - KCG (existing areas - 755 ha)	-	-	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	
Sugar cane - KCG (expansion - Ph III EU)	-	-	18	28	37	46	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	
Sugar cane - Outgrowers (on Illovo expansion)	-	-	1	3	7	11	16	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
Sugar cane - other outgrowers (new areas)	-	-	22	57	105	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	
Commercial crops (new areas)	-	-	5	11	51	92	118	131	131	131	131	131	131	131	131	131	131	131	131	131	131	
Irrigated Food Crops (on Illovo expansion)	-	-	1	2	3	4	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Irrigated Food Crops (on SC Outgrowers expansion)	-	-	2	4	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Other Irrigated Food crops	-	-	12	18	33	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	
<b>TOTAL (in Hm3)</b>	-	-	<b>169</b>	<b>385</b>	<b>634</b>	<b>775</b>	<b>835</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>	<b>853</b>

**5.7. ESTIMATE OF CAPITAL COSTS FOR EXPANSION OF 1 HA OF SUGAR CANE WITH PIVOT**

Item	Cost (USD/ha)
Bush clear	2 200
Land preparation	448
Land levelling	1 055
Roads	359
Pivot tracks	576
Pivots	4 236
Drainage	111
Other infrastructure	133
Contingency	182
<b>Total</b>	<b>\$9 301</b>

Source: Illovo Group

**5.8. ESTIMATE OF CAPITAL COSTS FOR EXPANSION OF 1 HA OF SUGAR CANE FOR KASINTHULA**

Item	Cost USD	Cost Euro
<b>Land preparation and earthworks</b>		
Preliminary and General	50 000	33 378
Main	1 554 085	1 037 440
<b>Civil Works</b>		
Preliminary and General	47 500	31 709
Main	752 792	502 531
<b>Supply (pumps, etc.)</b>	460 114	430 301
<b>Total</b>	<b>2 864 491</b>	<b>2 035 360</b>

6 820.22	4 846.09
USD / ha	Euro / ha

Source: EU Phase III expansion

**5.9 ESTIMATE OF CAPEX FOR PRIVATE OPERATOR**

Item	Number	Cost (USD)	Total (USD)
Vehicules (4*4)	10	50 000	500 000
Computer / softwares	40	1 200	48 000
Offices equipment	3	15 000	45 000
Workers and waterman equipment	20	1 500	30 000
Full equipment workshop	1	50 000	50 000
Contingencies (15%)			100 950
	<b>74</b>		<b>773 950</b>

## 5.9 ESTIMATE OF STAFF AND OTHER OPERATING COSTS FOR PRIVATE OPERATOR

### 1. Staff for Operation and Maintenance

25%

Position	Number	Net Annual Cost (USD)	Gross Total (USD)
General Manager	1	21 600	28 800
Chief of Operation Dept	1	16 800	22 400
Chief of Maintenance Dept	1	16 800	22 400
Chief of Irrigation Sector	4	12 000	64 000
Engineer	2	14 400	38 400
Human resources Dept Chief	1	16 800	22 400
Security Chief Unit	1	12 000	16 000
Administrative staff	5	9 600	64 000
Customers Unit Chief	1	12 000	16 000
Chief Accountant	1	16 800	22 400
Specialized workers	10	7 200	96 000
Drivers	5	4 800	32 000
Waterman	10	4 800	64 000
Collection fee agents	10	6 000	80 000
Assistant accountant	4	6 000	32 000
Secretary	3	3 600	14 400
Workshop chief	1	9 600	12 800
Guards	10	1 800	24 000
	<b>71</b>		<b>672 000</b>

### 2. Other operating costs

Position	Number	Annual Cost (USD)	Total
Renting for offices	3	18 000	54 000
Renting for machinery	12	2 000	24 000
Insurances	12	1 500	18 000
Electricity, water, etc	12	500	6 000
Fuel, maintenance of vehicules	10	3 600	36 000
Stationary (including for customer invoicing)	3	12 000	36 000
Small equipment	12	1 000	12 000
Contingencies (25%)			46 500
			<b>232 500</b>

## 5.10 ESTIMATE OF MAINTENANCE COSTS FOR PRIVATE OPERATOR

This estimate is related to the initial capital cost. A percentage of 0.1% per year of the initial capital costs is considered for annual maintenance. This ratio, relatively low, is justified by the consistency of the works (canal and pipelines), there are no sensitive assets like pumping stations which could require higher financial needs for maintenance.

Intake & Phase I	Unit cost	Quantity	Total Investments (Th USD)	% of maintenance costs	Total maintenance costs (Th USD)
Intake	-	-	5 213	0.1%	5.21
Feeder canal (Phase I) - 35 m <sup>3</sup> /s - 30 km	-	-	63 022	0.1%	63.02
Pipe 1 - 7,700 ha pivot (optimized)	3 000	7 700	23 100	0.1%	23.10
Pipe 2 - 5,600 ha (optimized)	3 000	5 600	16 800	0.1%	16.80
Pipe 3 - 5,600 ha (optimized)	3 000	5 600	16 800	0.1%	16.80
Pipe 4 - 4,400 ha (optimized)	3 000	4 400	13 200	0.1%	13.20
Bangula canal	-	-	114 341	0.1%	114.34
Pipes (optimized)	3 000	18 000	54 000	0.1%	54.00
<b>Total</b>	-		<b>513 780</b>		<b>306</b>

## 5.11 ESTIMATE OF OPERATING COSTS FOR IRRIGATION SERVICES

<b>in Th USD</b>		<b>Years</b>																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Staff	360	540	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720	720
Operating costs	116	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233
Maintenance costs			123	153	184	215	245	276	306	306	306	306	306	306	306	306	306	306	306	306	306
<b>Total</b>	<b>476</b>	<b>773</b>	<b>1 075</b>	<b>1 106</b>	<b>1 136</b>	<b>1 167</b>	<b>1 198</b>	<b>1 228</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>	<b>1 259</b>
Maintenance			40%	50%	60%	70%	80%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
										Area	41 300 ha										
											30 USD/ha										

## 5.12 DETAILS OF COST PRODUCTION FOR CROP BUDGETS

### ALL CROPS EXCEPT SUGAR CANE

#### PRODUCTION COSTS FOR 1 HA

MAIZE	
Fertilizer 1	28 875
Fertilizer 2	25 575
Seed	10 890
Land Preparation	13 750
Planting	9 625
Weeding Labour 1	8 250
Fertilizer Application 1	9 625
Fertilizer Application 2	9 625
Weeding Labour 2	6 875
Harvesting Labour	17 875
Drying Labour	11 000
Shelling	8 250
Bagging	15 125
Fumigation	3 450
Transportation	30 000
Other Costs	49 500
<b>TOTAL (MK)</b>	<b>258 290</b>

COTTON	
Seed	3 750
Land Preparation	13 750
Planting	9 625
Weeding Labour 1	8 250
Weeding Labour 2	6 875
Harvesting Labour	-
Drying Labour	11 000
Bagging	15 125
Transportation	50 784
Other Costs	49 500
Pest Control 1	20 000
Pest Control 2	21 250
Picking Labour 1	11 000
Picking Labour 2	13 750
Picking Labour 3	11 000
<b>TOTAL (MK)</b>	<b>245 659</b>

RICE	
Fertilizer 1	22 500
Fertilizer 2	18 750
Seed	3 750
Land Preparation	13 750
Planting	9 625
Weeding Labour 1	8 250
Fertilizer Application 1	-
Fertilizer Application 2	-
Weeding Labour 2	15 125
Harvesting Labour	8 250
Drying Labour	11 000
Winnowing Labour	11 000
Bagging	11 000
Fumigation	-
Transportation	50 784
Other Costs	49 500
<b>TOTAL (MK)</b>	<b>233 284</b>

SORGHUM	
Fertilizer 1	-
Fertilizer 2	-
Seed	3 750
Land Preparation	13 750
Planting	9 625
Weeding Labour 1	4 950
Fertilizer Application 1	-
Fertilizer Application 2	-
Weeding Labour 2	4 950
Harvesting Labour	11 000
Drying Labour	11 000
Winnowing Labour	11 000
Bagging	6 750
Fumigation	-
Transportation	50 784
Other Costs	49 500
<b>TOTAL (MK)</b>	<b>177 059</b>

PIGEON PEAS	
Fertilizer 1	-
Fertilizer 2	-
Seed	3 750
Land Preparation	13 750
Planting	9 625
Weeding Labour 1	8 250
Fertilizer Application 1	-
Fertilizer Application 2	-
Weeding Labour 2	15 125
Harvesting Labour	8 250
Drying Labour	11 000
Winnowing Labour	11 000
Bagging	11 000
Fumigation	-
Transportation	50 784
Other Costs	49 500
<b>TOTAL (MK)</b>	<b>192 034</b>

## SUGAR CANE

### Operating and revenue budget for Kasintula Scheme

Area under Cane 758 ha

ITEM CATEGORY	Current		
	TOTAL MK	MK/ha	US\$/ha
<b>OPERATING COST SUMMARY</b>			
AGRONOMY : Operations	8 900 273	11 742	77.25
BULK WATER SUPPLIES	29 470 075	38 879	255.78
CULTIVATION	175 880	232	1.53
ESTATE : General Operations	15 669 086	20 672	136.00
FERTILISER : Cane	26 709 168	35 236	231.82
FIELD Administration	328 851	434	2.85
HARVESTING : Cane	19 868 672	26 212	172.45
HAULAGE : Cane Haulage	78 494 984	103 555	681.29
IRRIGATION Operations	13 135 867	17 330	114.01
PLANTING & RePlant : Cane	381 661	504	3.31
<b>Sub-TOTAL FIELD OPERATIONS</b>	<b>208 604 285</b>	<b>275 204</b>	<b>1 810.55</b>
<b>WORKSHOPS</b>	<b>3 569 946</b>	<b>4 710</b>	<b>30.98</b>
<b>ADMINISTRATION</b>	<b>17 966 174</b>	<b>23 702</b>	<b>155.93</b>
	-	-	-
<b>TOTAL KCGL COSTS</b>	<b>230 140 405</b>	<b>303 615</b>	<b>1 997.47</b>
	-	-	-
<b>REVENUE SUMMARY</b>	<b>-</b>	<b>-</b>	<b>-</b>
Cane Deliveries ( tn.cane /mth )	80 000	106	0.69
ERS Extraction Projected ( % )	0.13	0.13	0.00
ERS Sugar Deliveries (tn.sugar)	10 400	14	0.09
ERS Sugar Price (MK / tn.sug )	53 000	53 000	348.68
<b>GROSS REVENUES</b>	<b>551 200 000</b>	<b>727 177</b>	<b>4 784.06</b>
	-	-	-
<b>OPERATING MARGIN ( K /mth)</b>	<b>321 059 595</b>	<b>423 561</b>	<b>2 787</b>

Source: Agricane (january 2011)



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## 5.13 DETAILS OF FINANCIAL CALCULATION FOR AFFERMAGE AND CONCESSION BASE CASE SCENARIO

		MACROECONOMY DATA																																		
unité		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041			
International price index		1,00	1,02	1,04	1,06	1,08	1,10	1,13	1,15	1,17	1,20	1,22	1,24	1,27	1,29	1,32	1,35	1,37	1,40	1,43	1,46	1,49	1,52	1,55	1,58	1,61	1,64	1,67	1,71	1,74	1,78	1,81	1,85			
<b>WITHOUT SVIP PROJECT</b>																																				
<b>WITHOUT SVIP High level canal (current situation)</b>																																				
<b>Existing Irrigated areas Pipe 2, 3 &amp; 4</b>		ha				3 342	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026			
Current cost of energy		Th USD	301 USD/ha	ESKOM price increasing 60%		481 USD/ha	0	0	1 740	5 326	5 432	5 641	5 652	5 765	5 880	5 998	6 118	6 240	6 365	6 492	6 622	6 754	6 889	7 027	7 168	7 311	7 457	7 607	7 759	7 914	8 072	8 234	8 398	8 566	8 738	8 912
Other operation costs for pumping station		*	47 USD/ha				0	0	171	523	533	544	555	566	577	589	601	613	625	637	650	663	676	690	704	718	732	747	762	777	792	808	824	841	858	876
Maintenance costs for pumping stations		*	97 USD/ha				0	0	352	1 078	1 099	1 121	1 144	1 167	1 190	1 214	1 238	1 263	1 288	1 314	1 340	1 367	1 394	1 422	1 450	1 479	1 509	1 539	1 570	1 601	1 633	1 666	1 699	1 733	1 768	1 803
<b>Total O&amp;M costs</b>		Th USD					0	0	2 283	6 926	7 065	7 206	7 350	7 497	7 647	7 800	7 956	8 115	8 278	8 443	8 612	8 784	8 960	9 139	9 322	9 508	9 698	9 892	10 090	10 292	10 498	10 708	10 922	11 140	11 363	11 591
<b>Financial flows without SVIP</b>				0	0	-2 283	-6 926	-7 065	-7 206	-7 350	-7 497	-7 647	-7 800	-7 956	-8 115	-8 278	-8 443	-8 612	-8 784	-8 960	-9 139	-9 322	-9 508	-9 698	-9 892	-10 090	-10 292	-10 498	-10 708	-10 922	-11 140	-11 363	-11 591			
<b>WITH SVIP PROJECT</b>																																				
<b>WITH SVIP High level canal</b>																																				
<b>Irrigated areas</b>		ha				3 342	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026		
<b>Existing Irrigated areas Pipe 2, 3 &amp; 4</b>		ha				3 342	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	10 026	
<b>Volumes to buy to private operator on existing areas</b>						73 153	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	
Phase 1 / Pipe 2		Th m <sup>3</sup>				73 153	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	
Phase 1 / Pipe 3		*				73 153	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	
Phase 1 / Pipe 4		*				73 153	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	219 460	
<b>Investments</b>		Th USD				1 961	10 344	13 815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Illovo on-field equipment for existing areas = cc		Th USD				1 961	10 344	13 815	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Contribution to pipeline I/Pipe 2, 3 & 4		*				1 961	3 972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Financing</b>						784	4 138	5 526	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Maturity						20 ans																														
Grace period						3 ans																														
<b>Draw</b>		Th USD	15 672																																	
Cumulative			0	0	1 177	7 383	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672	15 672		
Loan outstanding			0	1 177	7 383	15 672	15 613	15 244	14 461	13 677	12 893	12 110	11 326	10 543	9 759	8 975	8 192	7 408	6 625	5 841	5 057	4 274	3 490	2 706	1 923	1 139	414	0	0	0	0	0	0	0		
Principal repayment			15 672	0	0	0	59	369	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784		
Interest repayment			0	47	342	922	1 251	1 234	1 188	1 126	1 053	977	895	812	729	647	564	481	398	315	232	149	66	-17	-103	-210	-317	-424	-531	-638	-745	-852	-959	-1 066		
<b>Total debt service</b>		Th USD		0	47	342	922	1 310	1 603	1 972	1 909	1 846	1 784	1 721	1 658	1 596	1 533	1 470	1 408	1 345	1 282	1 220	1 157	1 094	1 031	969	906	843	780	717	654	591	528			
<b>SVIP irrigation fees</b>		USD/m <sup>3</sup>				1 326	3 989	4 001	4 013	4 025	4 037	4 049	4 062	4 074	4 086	4 098	4 110	4 122	4 134	4 146	4 158	4 170	4 182	4 195	4 207	4 219	4 231	4 243	4 255	4 267	4 279	4 291	4 303			
Tarif						0,0180	0,0181	0,0181	0,0182	0,0183	0,0184	0,0185	0,0186	0,0187	0,0188	0,0189	0,0190	0,0191	0,0192	0,0193	0,0194	0,0195	0,0196	0,0197	0,0198	0,0199	0,0200	0,0201	0,0202	0,0203	0,0204	0,0205	0,0206			
<b>O&amp;M costs for Illovo with SVIP</b>						0	0	248	758	773	788	804	820	836	853	870	888	905	923	942	961	980	1 000	1 020	1 040	1 061	1 082	1 104	1 126	1 148	1 171	1 195	1 219	1 243		
Other operation costs						0	0	85	261	267	272	277	283	289	294	300	306	312	319	325	332	338	345	352	359	366	373	381	388	395	404	412	420	429		
Maintenance costs						0	0	162	496	506	516	527	537	548	559	570	581	593	605	617	629	642	655	668	681	695	709	723	737	752	767	782	798	814	830	
<b>Financial flows with SVIP</b>						0	-832	-6 853	-11 195	-6 084	-6 405	-6 801	-6 766	-6 732	-6 698	-6 665	-6 632	-6 599	-6 566	-6 534	-6 502	-6 471	-6 440	-6 409	-6 379	-6 349	-6 320	-6 291	-6 263	-6 178	-5 857	-5 462	-5 498	-5 534	-5 571	
<b>Yearly financial flow</b>		TRI	10%																																	
						0	-832	-3 780	-4 209	861	801	549	731	915	1 102	1 291	1 484	1 679	1 877	2 078	2 282	2 489	2 699	2 912	3 129	3 349	3 572	3 799	4 028	4 320	4 651	5 460	5 843	5 828	6 028	



