

## Problem Definition

- ❖ The need to modernize irrigation practice.
- ❖ Integration of irrigation practice into digital world
- ❖ To reduce cost of labor, energy, water and mgt.
- ❖ To meet the Millennium Development Goal (MDG)
- ❖ To enhance farmers' Climate Change adaptation
- ❖ To sustain Africa's ever-increasing population

## Objectives of the initiative include to:

- develop a software for drip irrigation design in a digital scheme
- gather the appropriate parameters for drip irrigation design.
- evaluate the performance of the developed software
- Compare the output of the software with manual computation and the output of any similar software(s).

Design Report Sheet			
 <p><b>FUNAAB DRIP IRRIGATION SYSTEM</b>            Eng. I. O. Oladipo            Supervised by: Prof. J.K. Adewumi/MNSE. C. COREN  <b>FUNAAB DRIP IRRIGATION SYSTEM REPORT</b></p>			
Location of Field: South			
<i>Username: OLADIPO</i>	<i>Accesscode: 1155</i>	<i>Date:03-10-2012</i>	
Field Length (m)	50	Diameter of Pipe (mm)	35.00
Field Breadth(m)	40	Lateral Diameter (mm)	15.00
Field Size (Ha)	0.20	Field Gradient	0.01
Soil Type	CLAY LOAM	Depth of water below pump intake (m)	4.00
Crop to be irrigated	PEPPER	Pump outlet above ground (m)	4.00
Month of the Year	NOV	Friction Head Loss in main line (m)	0.30
Water Application Per Plant(cubic m)	2.96	Friction Head Loss Lateral (m)	2.81
Crop Spacing (m)	1.69	Total Head (m)	63.90
Water Requirement per Plant (cubic m)	0.74	Pump Power (hp)	3.12
Total Water Requirement (cubic m)	17,439.28		
Number of Emitter Per Plant	1.00		
Maximum Discharge (cubic m)	23,600.00		

## Conclusion and Recommendations

- ✓ The developed software presented friendly users interface to obtain appropriate design for implementing a drip irrigation
- ✓ This software should be made available to the farmers in order to assist them to improve on their productivity and reduce the drudgery associated with the conventional irrigation practice

## The Required Design Parameters

- ✓ Soil Climatic parameters,
- ✓ crop hydrologic and hydraulics
- ✓ Pump

Design Data Input Window

Welcome[OLLA] to Irrigation Design Software. Please Enter all parameters correctly and Click SUBMIT. [HOME] | [Logout]

* Location of Irrigation	North
* Select Size of Field(in Hectares)	Length (m) 33
	Breadth (m) 27
* Select Soil Type	FINE CLAY
* Select Type of Crop to Irrigate	MAIZE
* Select Emitter Flow (cubic metre / Sec)	5.0
* Main Diameter (cm)	35
* Lateral Diameter (cm)	15
* Select Operation Head (Height of Overhead Tank from Ground level (m))	5.0
* Field Gradient (Slope)(m/m)	0.007
* Select Month of Year	NOV
* Depth of Water Below Pump intake (m)	11
* Indicate Pump outlet Above Ground (m)	5
* Maximum Length of Emitter(mm)	7.5

Data input window constraints user to drop-down list to select from so as to eliminate design errors.

It allows for re-entry of individual data and rest of the window to re-input the whole parameters

