

Opportunities and challenges of Gravity based Drip Irrigation

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Opportunities and challenge of Gravity based Drip Irrigation

1.Drip Irrigation Overview

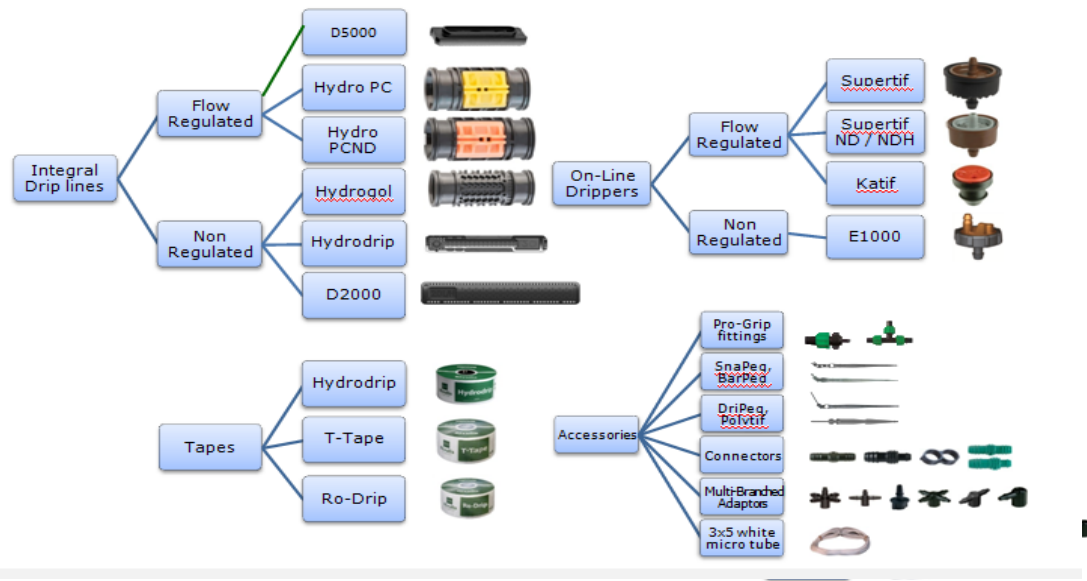
In drip irrigation ,water is applied to the crop root zone with precise quantities through dripper emitter. Due to effective water application uniformity (90-95%) , high crop uniformity is mandatory in the case other factors are well managed

Water moves into the soil and wets the root zone vertically by gravity and laterally by capillary action



Drip irrigation Materials

Opportunities and challenge of gravity based drip irrigation Cont'd



Colors, Double Layer Driplines



3.Opportunities of Gravity Based Drip irrigation system

Water moving by Gravity :Nyanza 23

- ❑Government of Rwanda has already supplied irrigation water to the farmers
- ❑For many constructed public Dams and big reservoir ,water moves by gravity
- ❑No pumping expenses are needed.
- ❑ Easy connection of Drip irrigation to the system.



Figure 4: Channel and Box in comparison to surrounding ground

Challenges of gravity based drip irrigation: Nyanza 23.

Sedimentation station

- ☐ Water in main channel is not clean
- ☐ Water is at high turbidity level
- ☐ It is not advisable to the farmers or other investors to make direct connection to the existing system.
- ☐ There is need to clean water before applying to drip irrigation system



Figure 1: Channel and Box

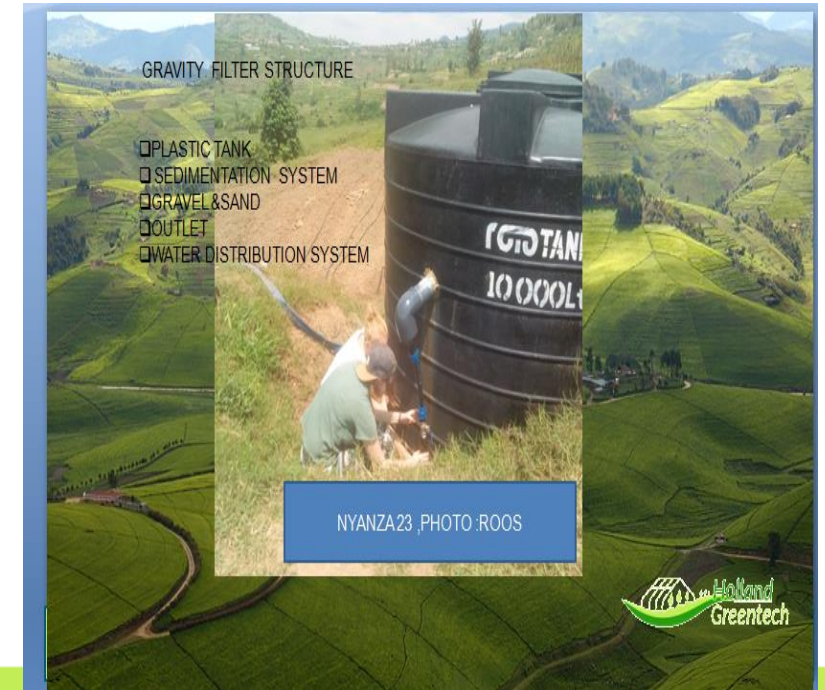


Figure 2: Connection Outlet and Hose

Proposed Solution For initiating & sustaining drip irrigation in Nyanza 23

Gravity filter

- ❑ Made with locally available Materials
- ❑ Is cheaper Compare to the media filter
- ❑ Water passes through sand & macrospore space
- ❑ No fuel is needed .



Summary & Conclusion

- ❑ Using Gravity filter & Drip irrigation system will be a sustainable solution for water use efficiency in Nyanza 23.
- ❑ Drip irrigation is one way for saving money
- ❑ Improve crop production in terms of quantity and quality



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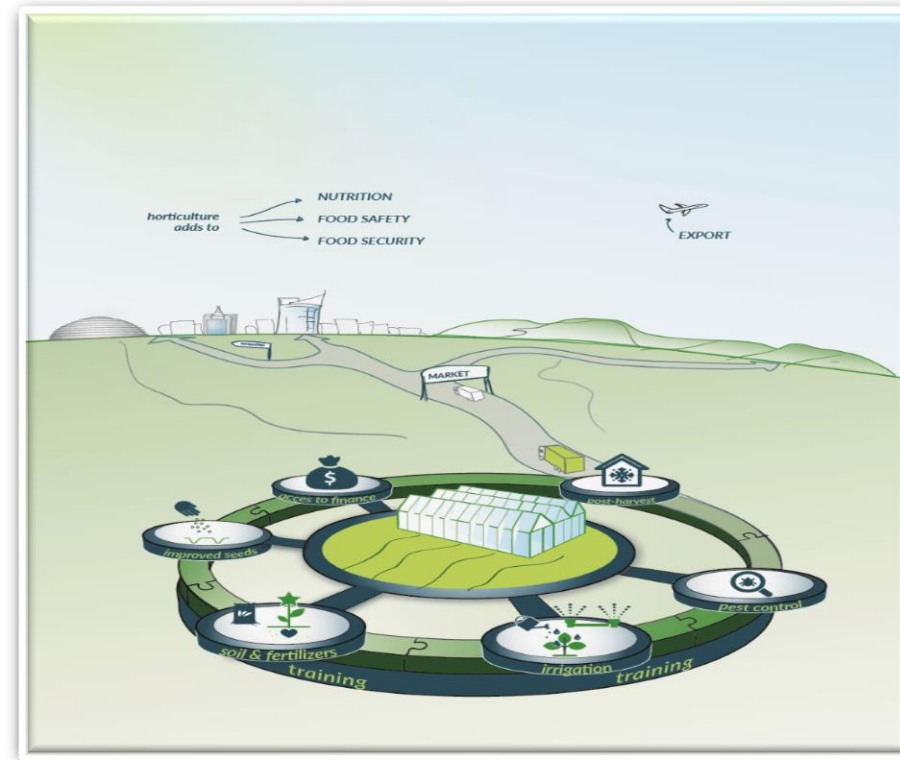


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THANK YOU FOR YOUR KIND ATTENTION

QUESTIONS ?