

User: [REDACTED]

Farmer name: [REDACTED]

General

The farm [REDACTED] in Nigeria with a total surface to be irrigated of 6 Hectares and an irrigation source yield of 500 m³/h shall be irrigated by Direct Feed

Water Requirements Report

Geolocation	7.78°North 4.54°East
Average temperature in hottest month	33.8 °C

Crops Water Demand

Maize (grain)	
Water demand	546.931 m ³ /d
Surface share crop	6 Hectares
Plant spacing	Normal spacing
Irrigation method	Drip Irrigation

Livestock Water Demand

Total Water Demand

Total crop water demand	546.931 m ³ /d
Total livestock water demand	0.000 m ³ /d
Total water demand	546.931 m³/d

Remarks:

- In times of climate changes and droughts, precipitation is not considered.
- If the farm is located in a humid area, deduct a certain amount (10-50%, depending on the area) from the max. amount needed for irrigation (meaning from the pump flow rate).
- Water for household use is not considered.
- Planting month is not considered.
- Results are for orientation only, for more accurate results use the SPIS-Excel Toolbox.

Pumpsizing For Direct Feed Irrigation Report

Related Information

Month with the highest temperature	March
Average temperature in this month	33.8 °C
Average solar irradiation	4.57 kWh/m ²
Total Water Demand	546.93 m ³ /d

Irrigation System Design

General System Information

Solar system losses	Standard (25%)
Static head	2 m

Pipelines	
Irrigation head pipeline length	200.00 m
Irrigation head pipeline diameter	50.00 mm
Main feeder pipeline length (total)	300.00 m
Main feeder pipeline diameter	50.00 mm
Lateral feeder pipeline length (total)	200.00 m
Lateral feeder pipeline diameter	25.00 mm
Fittings	
Number of elbows	10
Number of gate valves	150
Number of tees	150
Number of reducers	150
Number of check valves	0
Pressure Requirements	
Irrigation method	Drip
Pressure requirements	5.00 m

Irrigation System Requirements

Volume flow	119.68 m ³ /h
Total dynamic head	25064.83 m
Estimated Pump size	18164.98 kW
Estimated Solar Panel surface	113531.13 m²

Remarks:

- Flowmeter and Filter are not considered.
- Especially a filter can influence the pressure loss, so please keep this in mind.
- As material for the pipeline we consider only PVC or PE.

Turnover & Investments Report

Not enough data provided

Soil Type Report

Not enough data provided

Maintenance Report

Not enough data provided