Milestone D5.1 – Attachment D:

- **Page 1 - Energy availability v's consumption (solar and grid) and water applied (ML/ha)**
- **Page 2 - Pump to solar capacity operating threshold**

Weather site data	July to December 2019 (for 2019 harvest)	January 2019 to June 2019 (for 2019 harvest)
Available bright sunshine hours	2369	2134
Pump operational threshold (W/m^2)	400	400
Available bright sunshine hours equal to threshold	1111	896

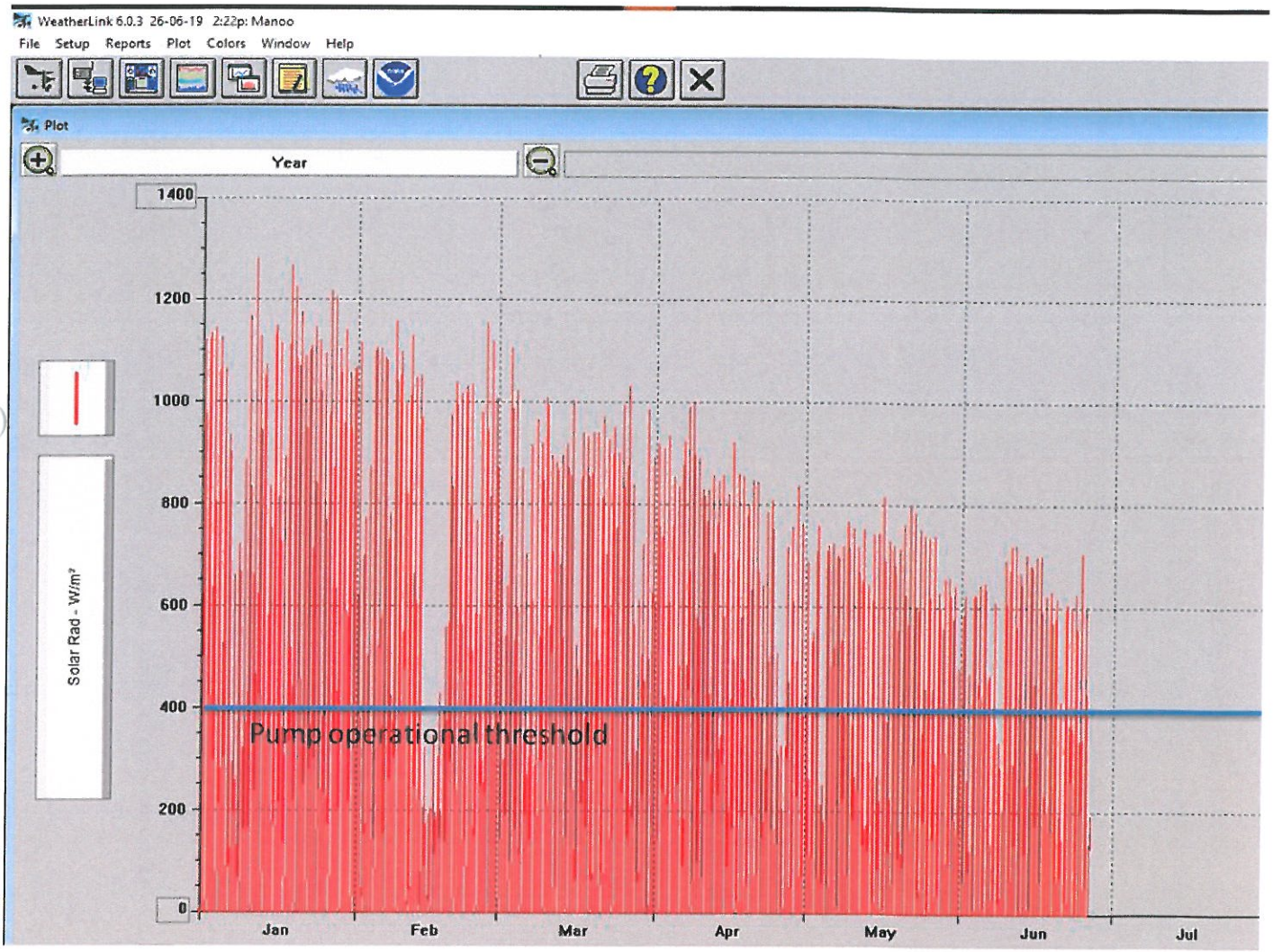
Pumping data	July to December 2019 (for 2019 harvest)	January 2019 to June 2019 (for 2019 harvest)
Total time pumping (hours)	595	842
Daytime pumping hrs (estimate 70%)	416	589
Night time pumping hrs (estimate 30%)	179	253
Percent of available solar hours utilised	37%	66%
Grid supplied energy utilised (kWh)	4308	7486

Calculated energy mix		July to December 2019 (for 2019 harvest)	January 2019 to June 2019 (for 2019 harvest)
Average hourly pump demand (kWh)		27.31	28.66
Solar input (kWh)		11944	16691
Grid input		4308	7480
Total pump energy use (kWh)		16252	24171
Estimated Ratio of operation	Day (70%)	11376	16920
	Night (30%)	4876	7251

System utilisation		July to December 2019 (for 2019 harvest)	January 2019 to June 2019 (for 2019 harvest)
Annual nominal water allocation (ML/ha)*		3.6	3.6
Annual farm area	(ha)	55	55
Annual total water allocation	(ML)	198	198
Irrigation volume applied	(ML)	49.07	79.48
Percent of annual allocation applied		24.7%	40.1% (64.8%)

*Annual allocation to June 2018 (Milestone 4) was based on industry average 4.5MLha
*Confirmation by grower indicates that annual allocation is 3.6 ML/ha

Pump / solar operational threshold July to December 2018



Note the periods when solar radiation was insufficient to sustain continuous pumping operation.