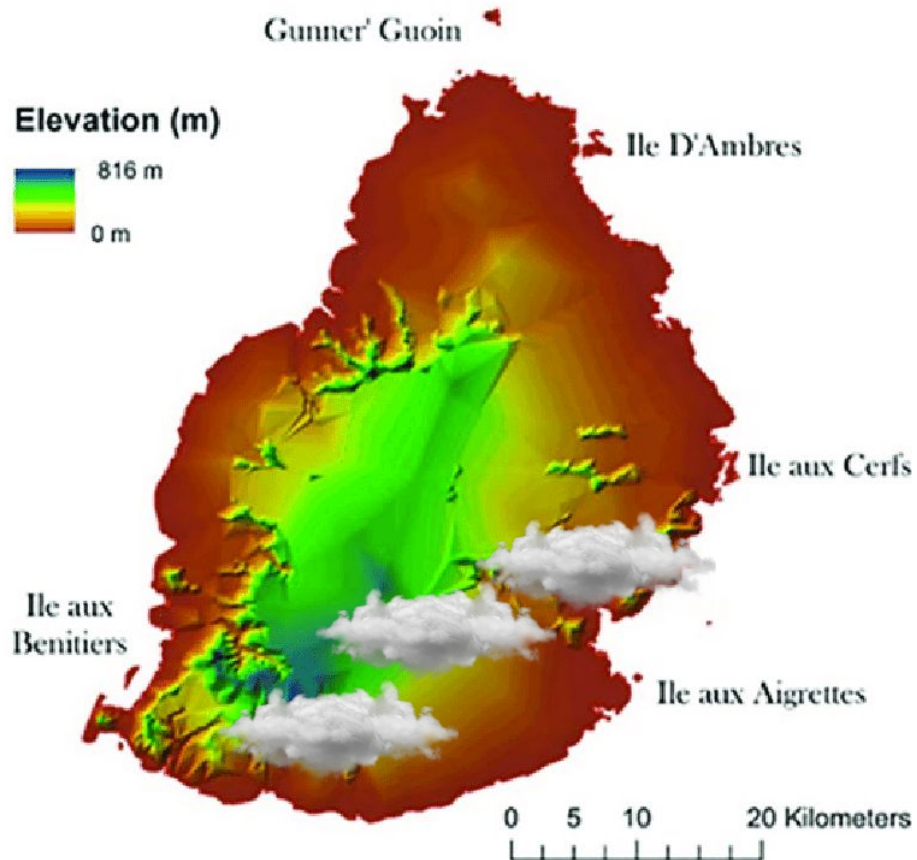


Solar Potential of Mauritius

The maximum solar irradiation tend to occur in the Northern and Western regions ($\sim 17 \text{ MJ/m}^2\text{day}$)

The minimum solar irradiation tend to occur in the Southeastern region ($\sim 15 \text{ MJ/m}^2\text{day}$)

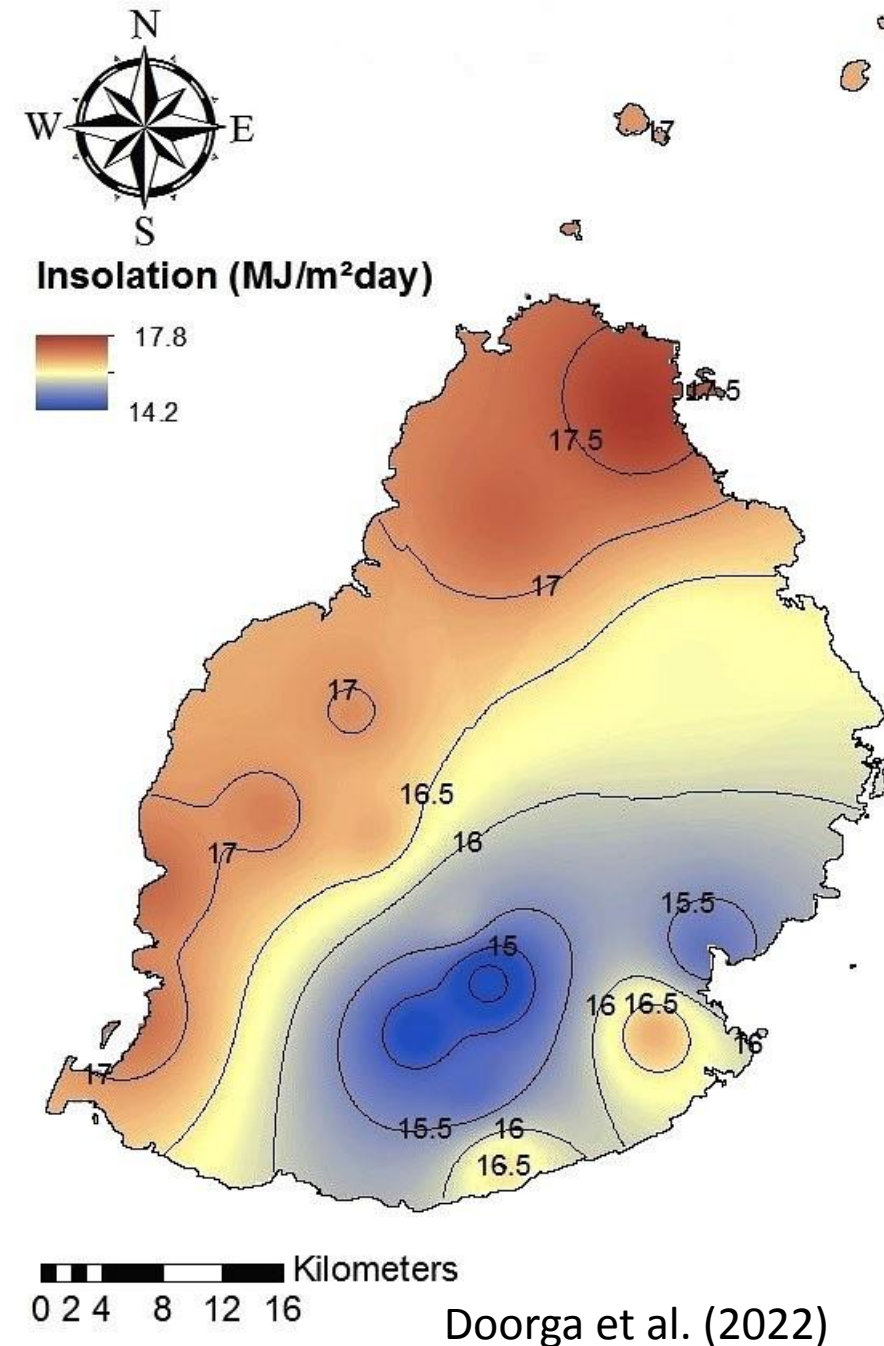


SE Trade winds bring warm moist air from the ocean

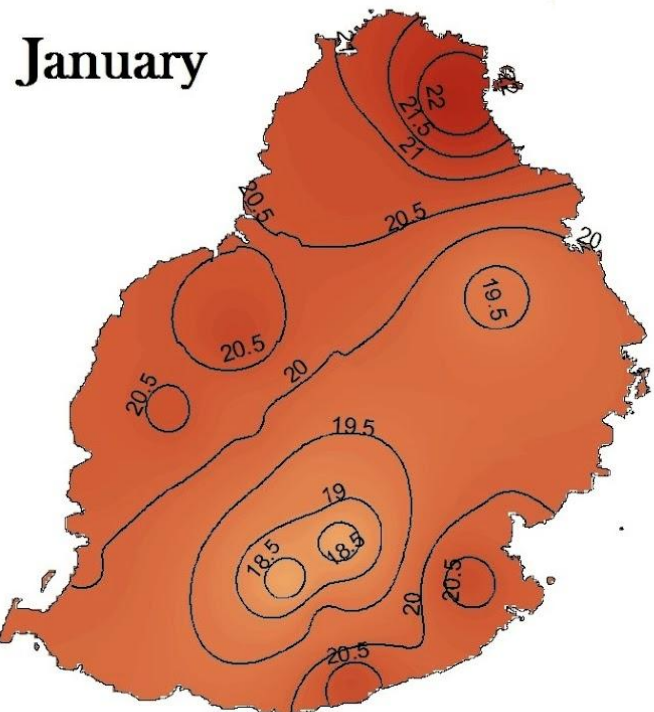
As the air is forced to rise over the elevated plateau, condensation occurs

Cloud formation on lower central plateau reduced the amount of solar radiation

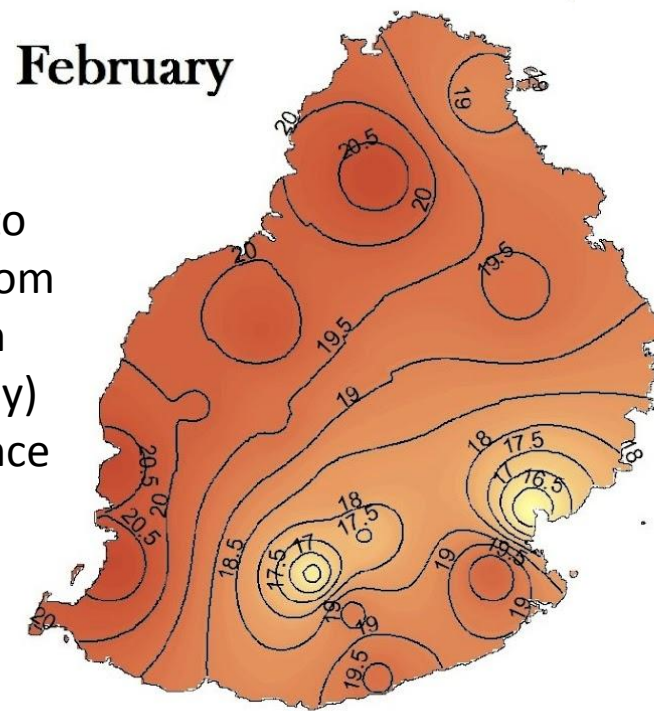
Stripped of moist content, air subsides in the North and West



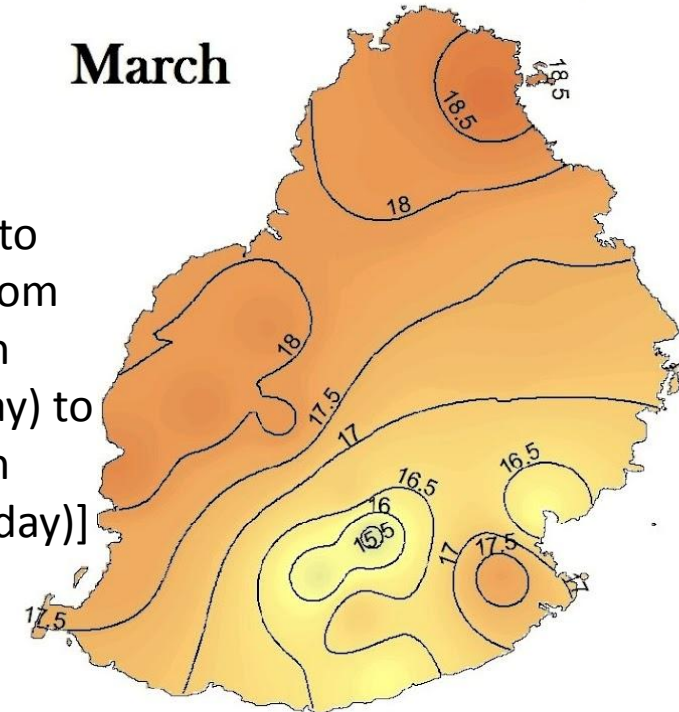
January



February



March



[÷0.0864 to
convert from
Irradiation
(MJ/m2day)
to Irradiance
(W/m2)]

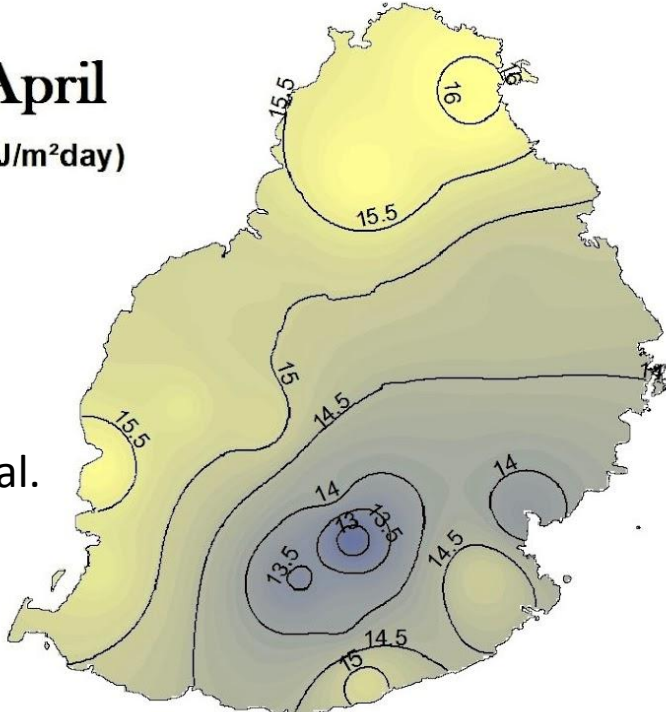
[x 0.2777 to
convert from
Irradiation
(MJ/m2day) to
Irradiance
(kWh/m2day)]

April

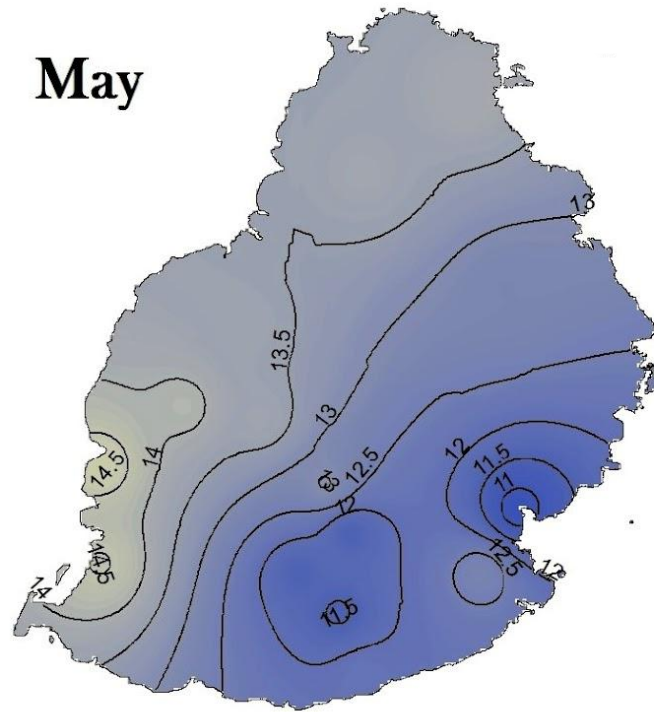
Insolation (MJ/m²day)



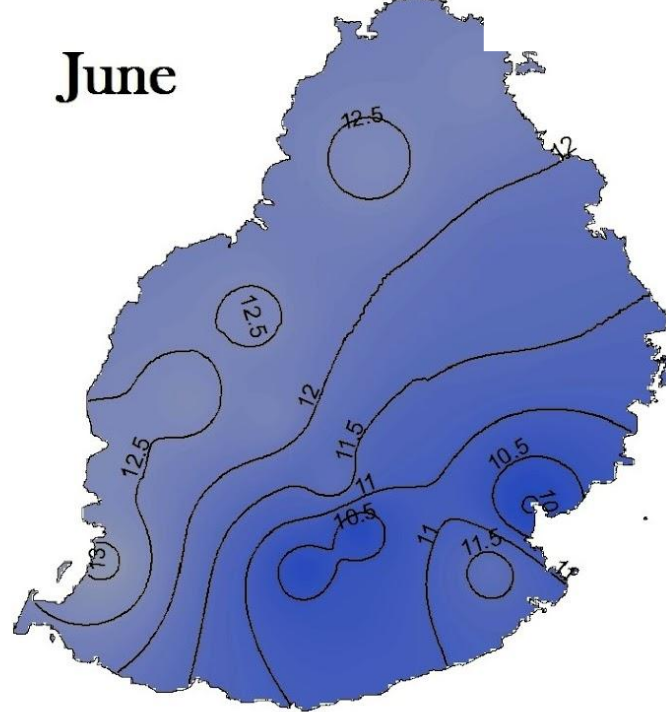
Doorga et al.
(2022)



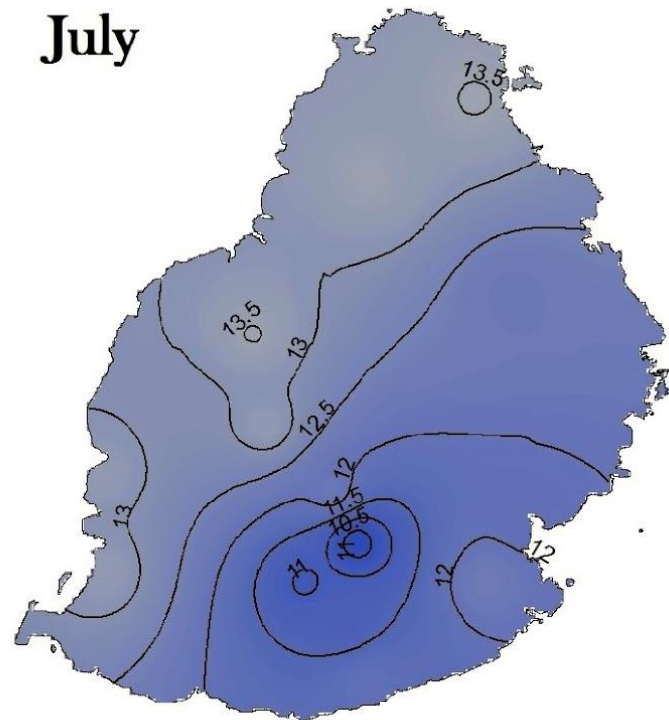
May



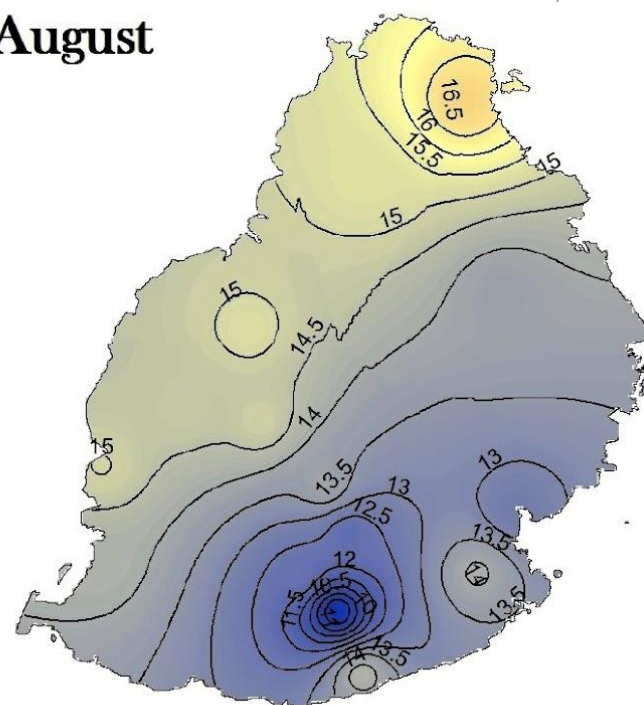
June



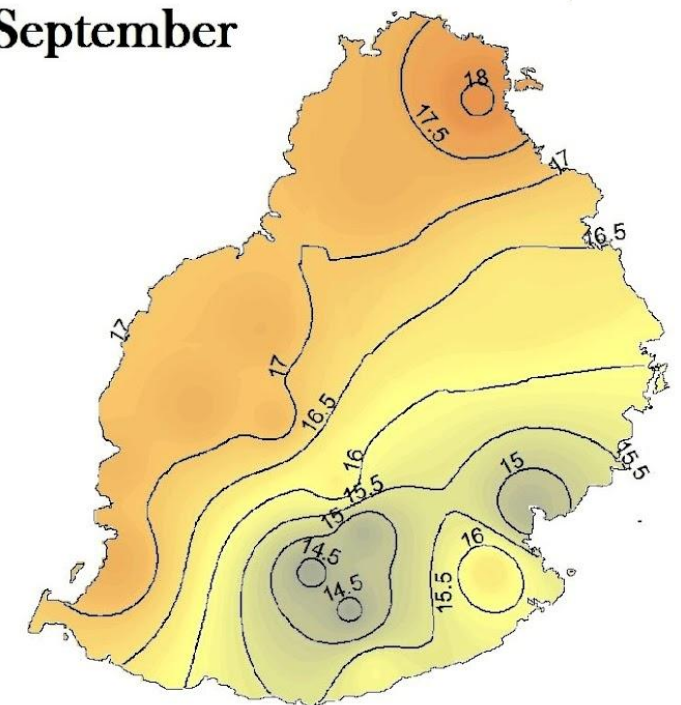
July



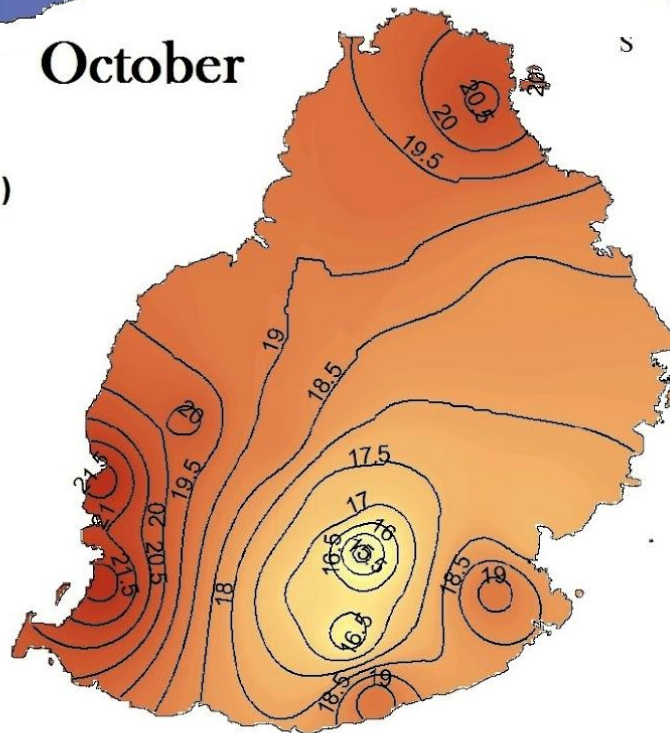
August



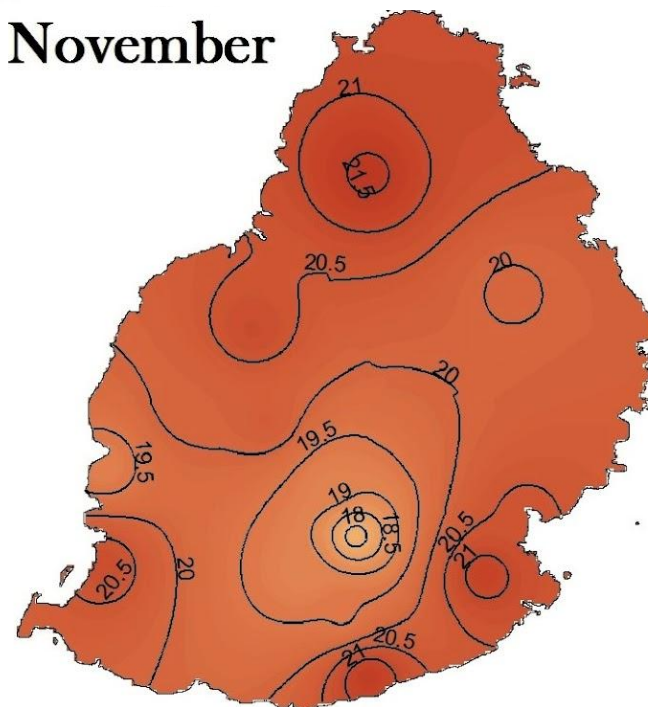
September



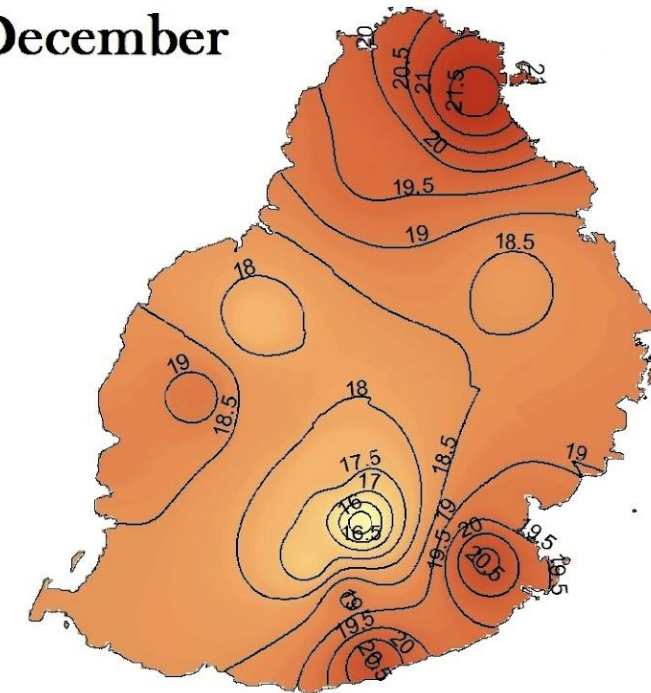
October



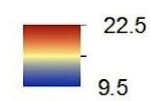
November



December



Insolation ($\text{MJ}/\text{m}^2\text{day}$)



Doorga et al.
(2022)

Estimation of Electricity Generation

Solar panels which absorb and convert sunlight into electricity. A solar inverter then changes the electric current from DC to AC. Home appliances run on AC energy

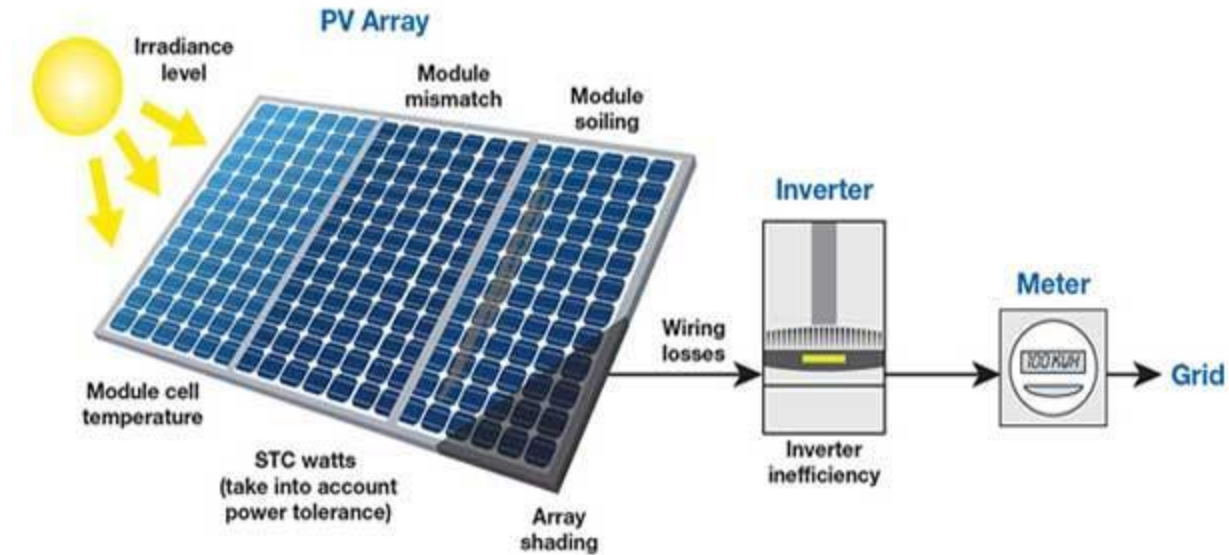
$$E = A \times r \times H \times PR$$

Energy (kWh)

- A is total Area of the panel (m²)
- r is solar panel yield (%) – 15.6% for poly c-Si (for higher accuracy, read from cell module data sheet)
- H is monthly average solar radiation (kWh/m²day)
- PR = Performance ratio, default value = 0.75

Assuming installation of PV on Area = 182 m²

Monthly average solar radiation =
Jan (19 MJ/m²day $\times$ 0.2777 = 5.27 kWh/m²day) from map



Month	Solar Radiation (kWh/m ² day)	AC Energy (kWh)
January	5.27	=182 x 0.156 x 5.27 x 0.75 x 31 (for number of days in Jan) = 3,478
February	4.99	2,975
March	4.58	2,730
April	3.88	2,313
May	3.47	2,070
June	3.19	1,902
July	3.32	1,979
August	3.74	2,229
September	4.43	2,641
October	4.72	2,814
November	5.40	3,219
December	5.06	3,017

Total Annual Energy = 31,367 kWh