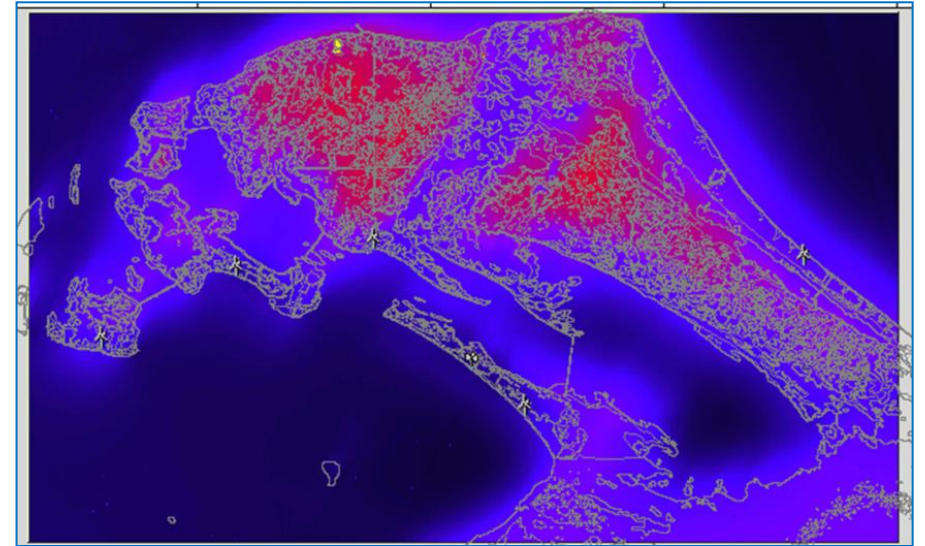


Case Study of Wind Resource Assessment: Sri Lanka

*Quantum Leap in Wind Power Development
in Asia and the Pacific*

Gayan Subasinghe

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Wind Resource Map of Northern Region, Sri Lanka



SRI LANKA
SUSTAINABLE ENERGY AUTHORITY



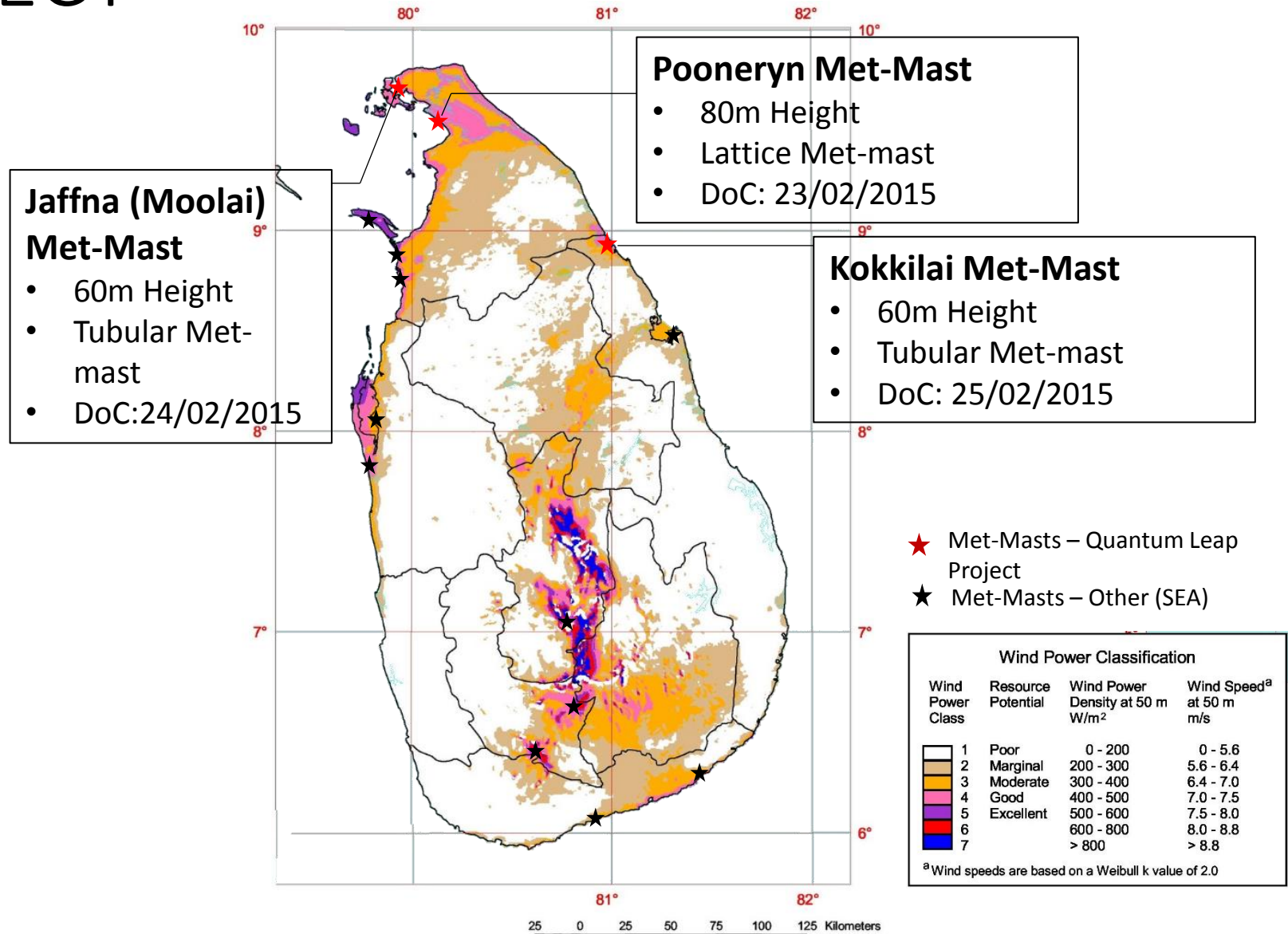
ASIAN DEVELOPMENT BANK

OBJECTIVE

- Provide insight into the need and process for long-term wind measurements and mapping of wind resources of the country
- Assist policy /planners by
 - Wind resource estimations
 - Initial step of wind power development roadmap
- Assist wind industry by
 - Reduce start-up time and resource risk
 - Use of data and services for wind industry's planning purpose

OVERALL PROJECT

- Project implementation by Sri Lanka Sustainable Energy Authority(SEA)
- Financial assistance from ADB
- 3 wind met-masts
- Planning, approval and installation (2014 Aug-2015 Feb) followed by one year data measuring campaign



TOWER & INSTRUMENTS INSTALLATION

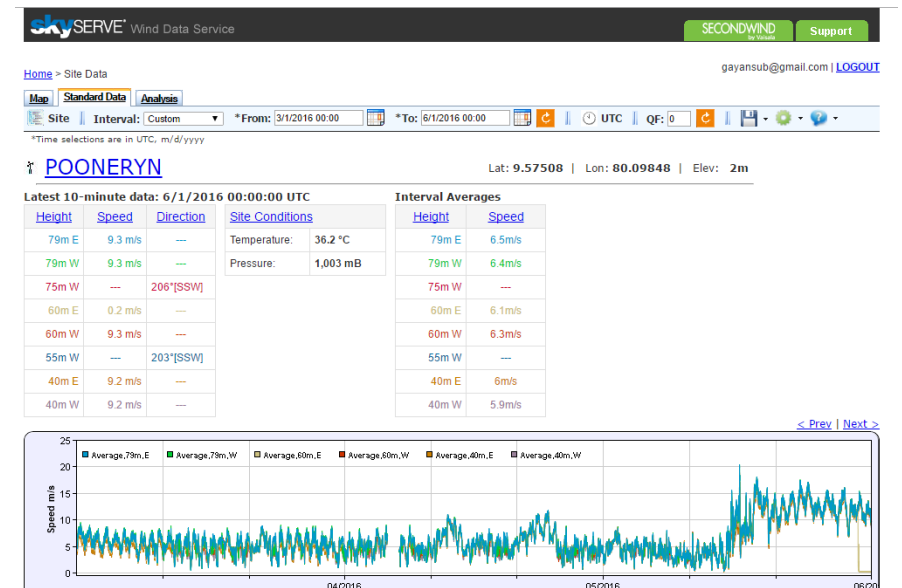
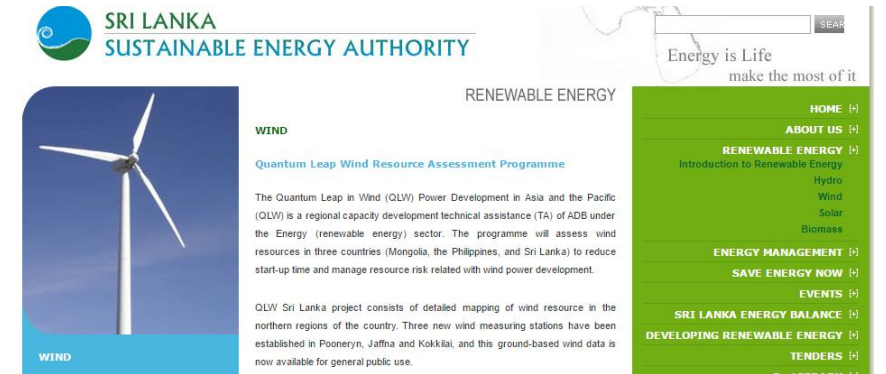


DATA ACCESS & DATA MANAGEMENT

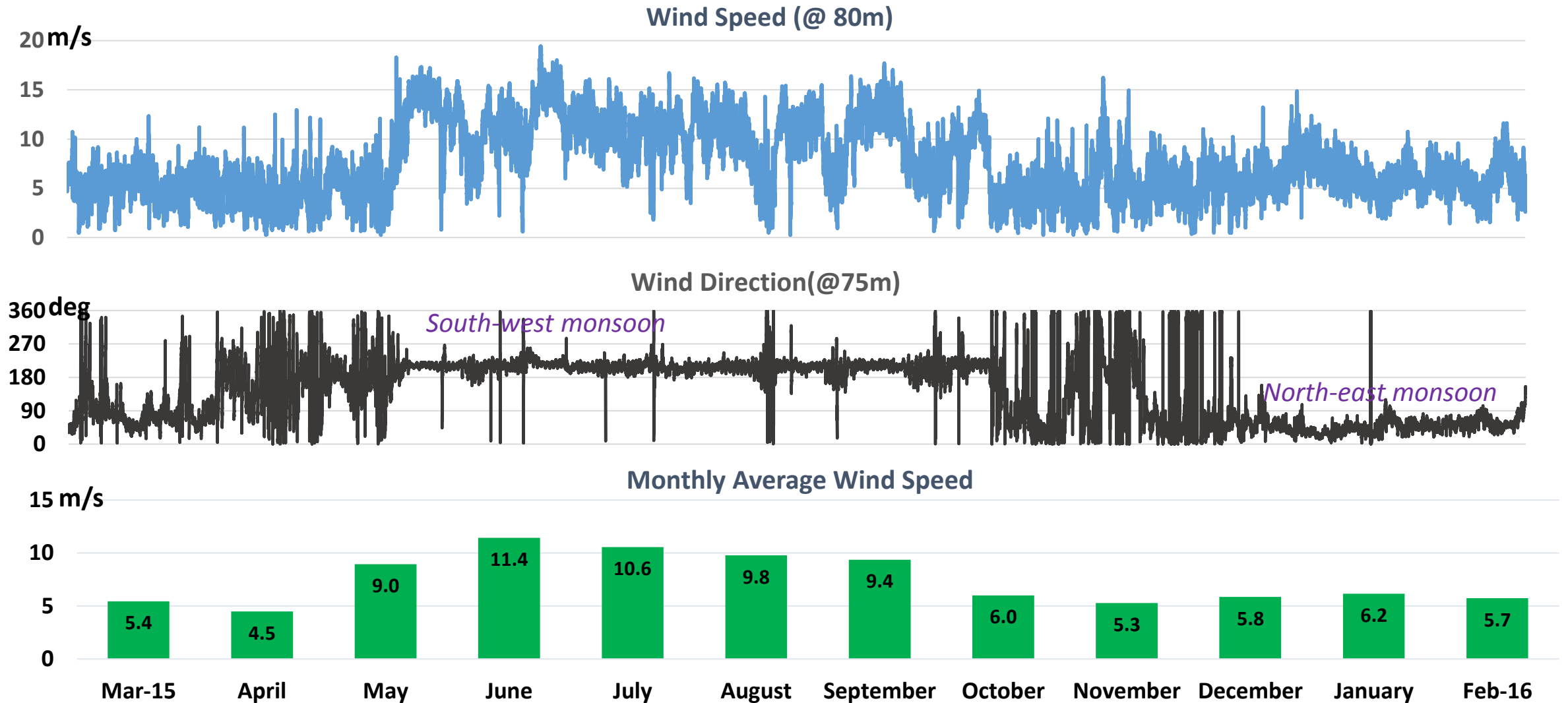
- Developers, researches and general public can access this data by

http://www.energy.gov.lk/sub_pgs/energy_renewable_%20quantum-leap-wind.html

- Wind data service provider for data management

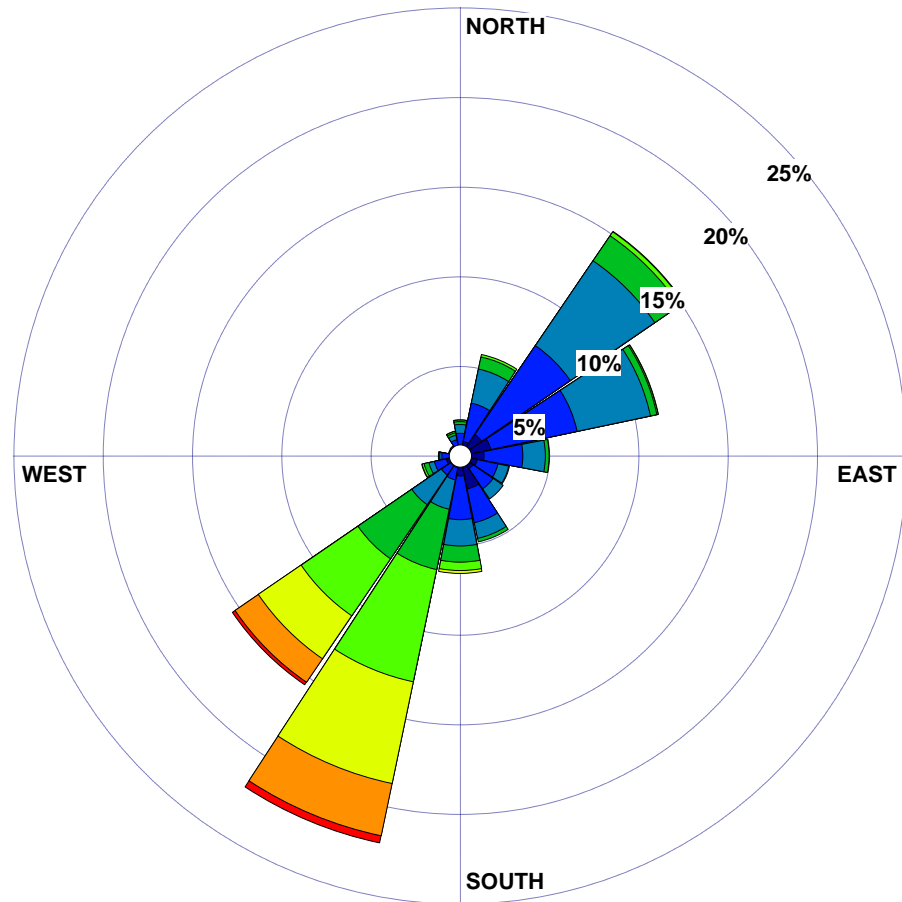


WIND STATISTICS – I (Pooneryn)



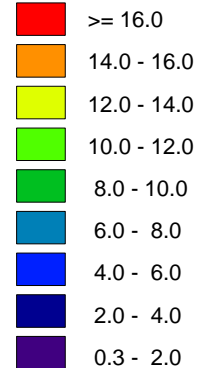
WIND STATISTICS – II (Pooneryn)

Wind Rose Plot



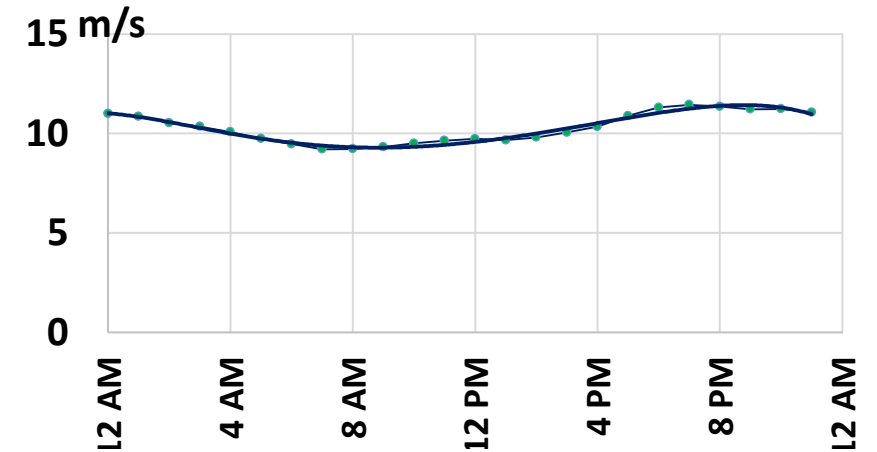
U : 7.46 m/s
P : 436 W/m²

WIND SPEED
(m/s)

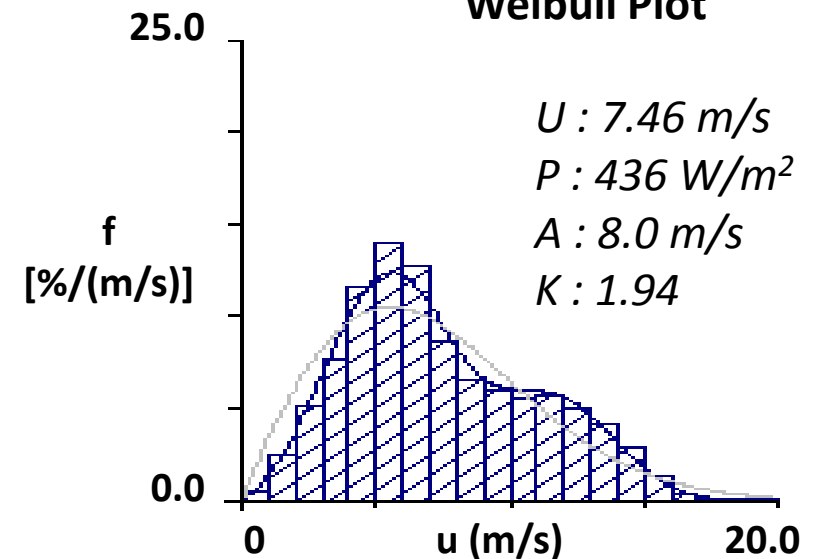


Calms: 0.00%

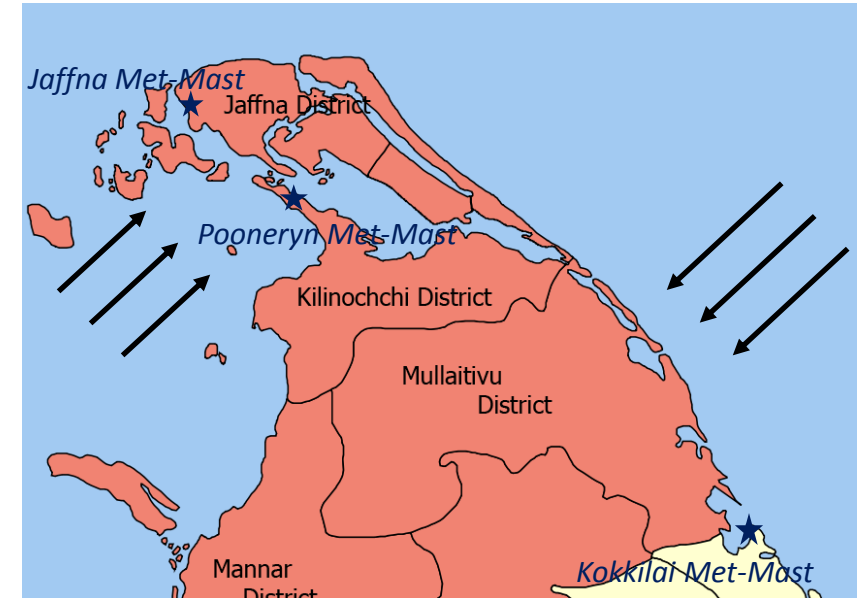
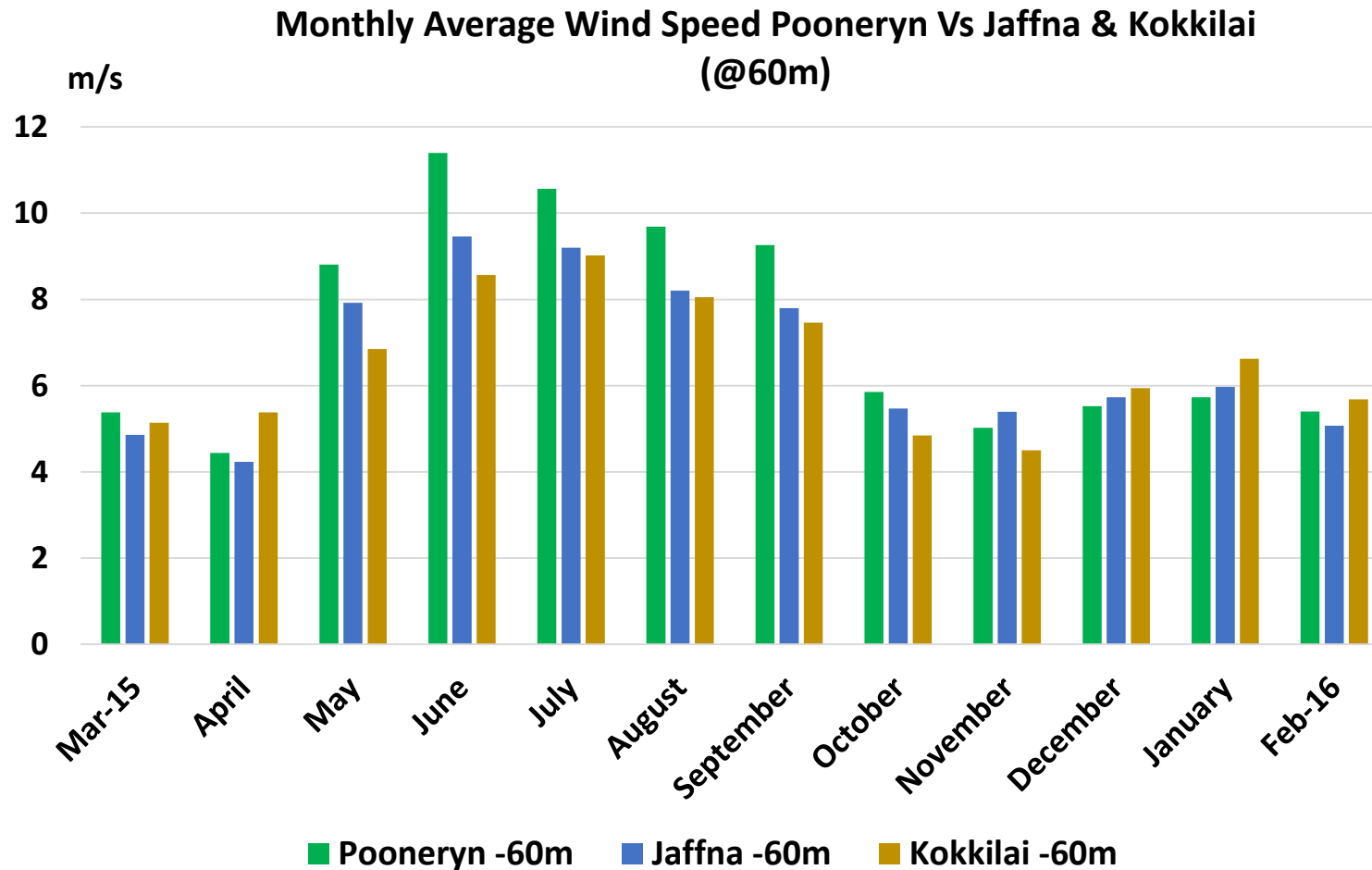
Diurnal Wind Patten (South-west Monsoon)



Weibull Plot



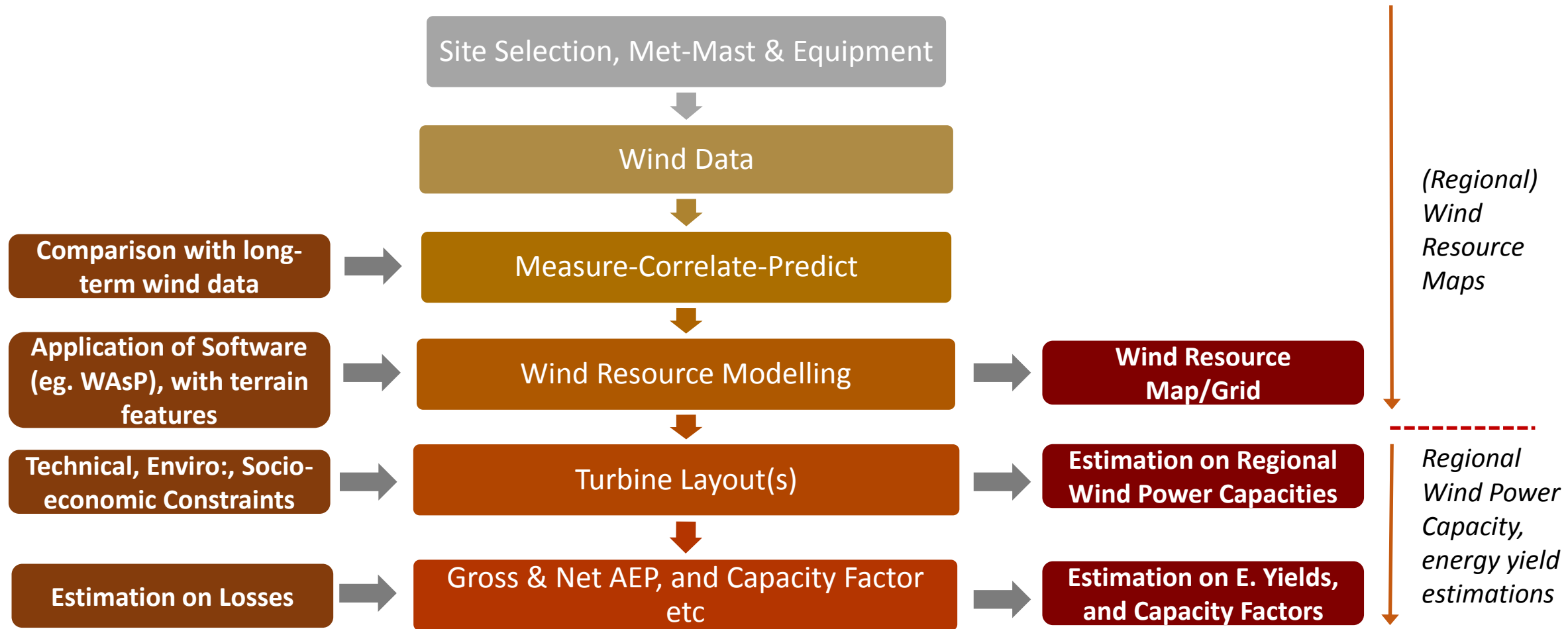
WIND STATISTICS – III (Comparison)



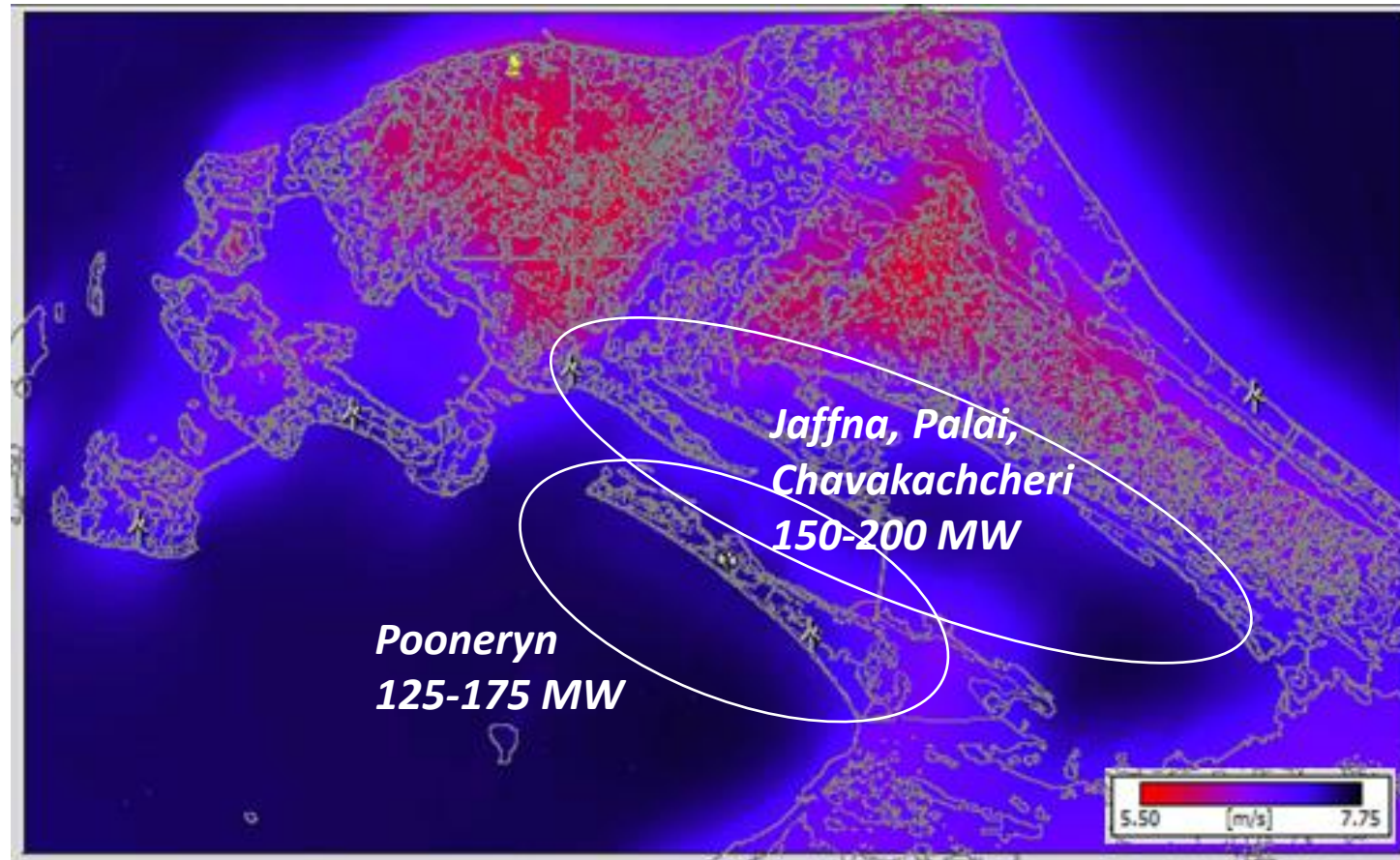
Location	Avg. Annual Wind Speed (@60m) m/s
Pooneryn	7.27
Jaffna	6.61
Kokkilai	6.46

GOING BEYOND

Resource Mapping, Capacity & Energy Yield Estimation



WIND RESOUC E MAP, WIND POWER CAPACITY ESTIMATION



ISSUES, LESSONS LEARNED & NEXT STEPS

☐ Technical

- Best practices are important to maintain overall quality of the project
 - Experience local service provider
 - Remote data access
 - Power system is very critical

☐ Other

- Site security / vandalism

☐ Next Steps

- Requirement for a Comprehensive Wind Resource Development Roadmap
- Need for expansion of the project in the region looking at wind resource
 - To facilitate developers and investors of wind industry with the use of data and related services
 - Facilitate accelerated development of wind resources

Thank You!

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