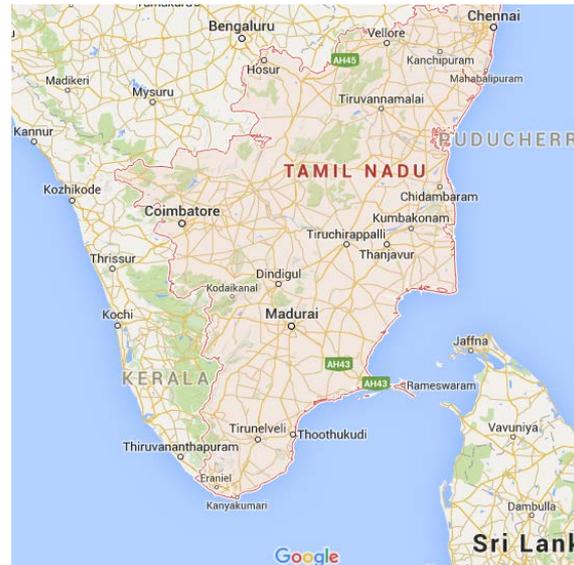


# 6(c). Development of selected weather window for issuing agro advisory - case study from Tamil Nadu



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# **What is weather window?**

Weather window is nothing but combination of weather elements made from permutation and combination exercise done against individual selected weather elements taken for the study (rainfall, temperature, RH, wind speed etc.,

## **Why it is required ?**

Developing agro advisories for selected crops in advance and used when the window occurs in real time

# Usefulness of the weather window

1. Preparation of agro advisory in advance for selected crops and getting validated
2. Once the weather window occurs in real time, the developed agro advisory can be practiced with out any waiting time for mass adoption
3. There is 100 per cent hope to reduce the crop production loss under malevolent weather situation

# How it was developed for Tamil Nadu, India

Considering the objective of developing weather windows for capturing the weather of Tamil Nadu across seasons covering temporal and special weather dimensions,

four levels of rainfall, three levels of maximum temperature, three levels of minimum temperature, three levels of mean daily relative humidity and three levels of wind speed were taken for study as furnished below and permutations and combinations were generated (4x3x3x3x3).

Factor / Level	Rainfall (mm)	T.max (°C)	T.min (°C)	Day mean RH (%)	Wind speed (kmph)
L 0	0	20-30	<15	20-40	<5
L 1	0.1-20	30.1-35	15.1-20	40.1-70	5-15
L 2	20.1-30	>35.1-	20.1-30	>70.1	>15
L 3	>30.1	-	-	-	-

Enough care was taken to identify each weather window from 324 combinations to capture the weather scenario of Tamil Nadu precisely. Based on the ground reality experiences in the field of daily weather situation of Tamil Nadu and also by validation with real time weather data, the total 324 combinations were screened for short listing and selected 24 weather windows. In addition initially caution was taken not to select more number of weather windows, since it will decrease the efficiency of agro advisories to be developed.

For validating the initially developed 24 weather windows, weather data of 2013 from agro-met observatory of Tamil Nadu Agricultural University were collected as suggested by Mooley (1994) and used. Mooley (1994) recommended that data collection for any validation in respect of cold weather period, 6 days of January month can be taken, while it is 6 days from April for summer month, 6 days from July for Southwest monsoon season and 6 days from October for Northeast monsoon. When validation was carried out with Coimbatore weather the identified 24 weather windows needs revision.

Hence re exercise was done to capture the entire weather situations of Tamil Nadu across seasons without missing. By addition of another 30 weather windows from the pool of 324 combinations to the strength of 24 weather windows selected already after careful examination, the number of weather windows have brought to 54. These 54 weather windows were validated again with weather data collected from AWS installed at block level of each district of Tamil Nadu and finally selected.

WW. No	Absolute range values of weather elements				
	RF (mm)	T.max (°C)	T.min (°C)	Mean RH (%)	Wind speed (kmph)
1	0	<20	<15	> 40	<5
2	0	20-30	<15	> 40	<5
3	0	20-30	15.1-20	> 40	<5
4	0	20-30	20.1-30	> 40	<5
5	0	30.1- 35	15.1-20	> 40	<5
6	0	30.1-35	15.1-20	<40	<5
7	0	30.1-35	20.1-30	> 40	<5
8	0	>35.1	15.1-20	> 40	<5
9	0	>35.1	20.1-30	> 40	<5
10	0.1-30	<20	<15	> 40	<5
11	0.1-30	20-30	<15	> 40	<5
12	0.1-30	20-30	15.1-20	> 40	<5