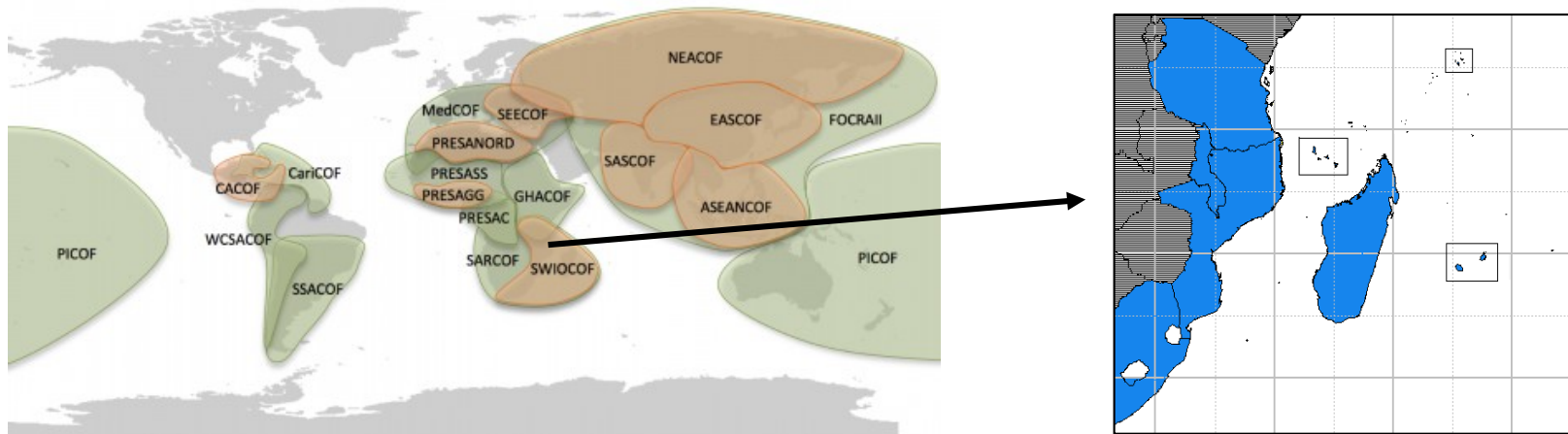# SWIOCOF – 11

- Seasonal forecast introduction -

Regional Outlook Forum for South-West Indian Ocean countries

September 22nd 2022

- Seychelles -

SWIOCOF : Annual Climate Outlook Forum

Regional Climate Outlook Forum around the world


In the SWIO region since 2012

▸ Meteorologist from 9 countries : Comoros, France (La Réunion), Madagascar, Malawi, Mauritius, Mozambique, Seychelles, South Africa, Tanzania.

▸ On-the-job training to improve knowledge and share good practices for seasonal climate analysis, monitoring and forecast.

▸ Production of material at regional scale as well as for national purposes

▸ Continuous improvement for : (1) methodological improvements and (2) development of impact based products

SWIOCOF : Seasonal forecast

- Seasonal forecasts are possible since there are sources of predictability from the feedback of the oceans on the atmosphere

- Seasonal forecasts are produced by numerical simultions with Global Climate Models.

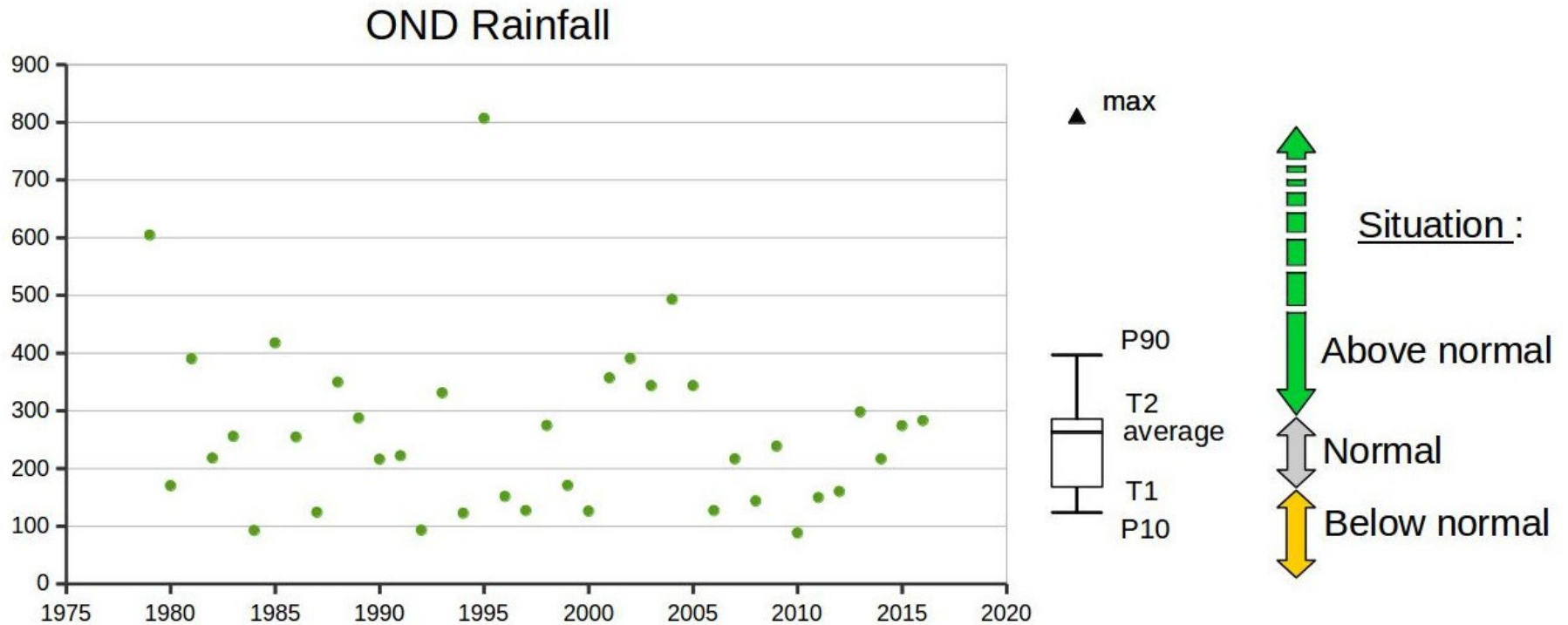- The forecasts are adapted to local conditions through statistical processing involving local data
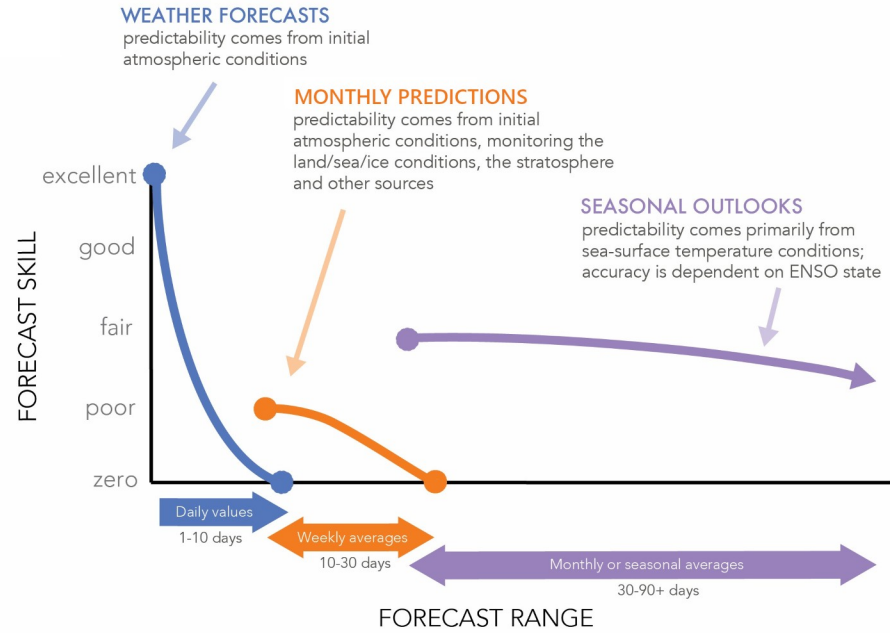
Global Producing Centers for Long Range Forecasts
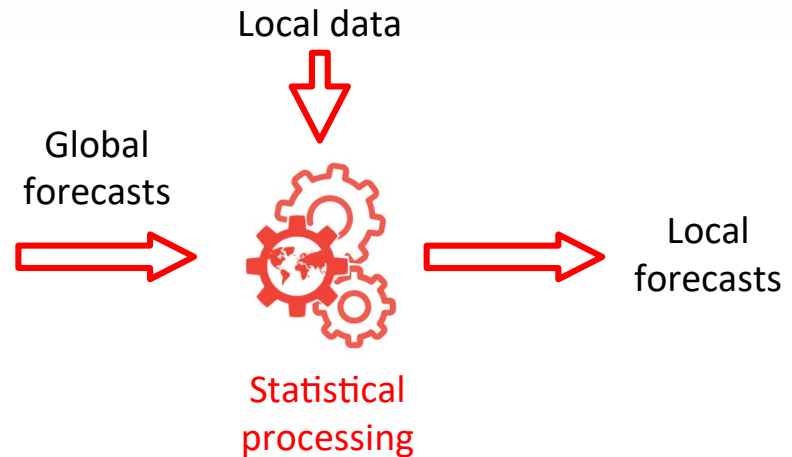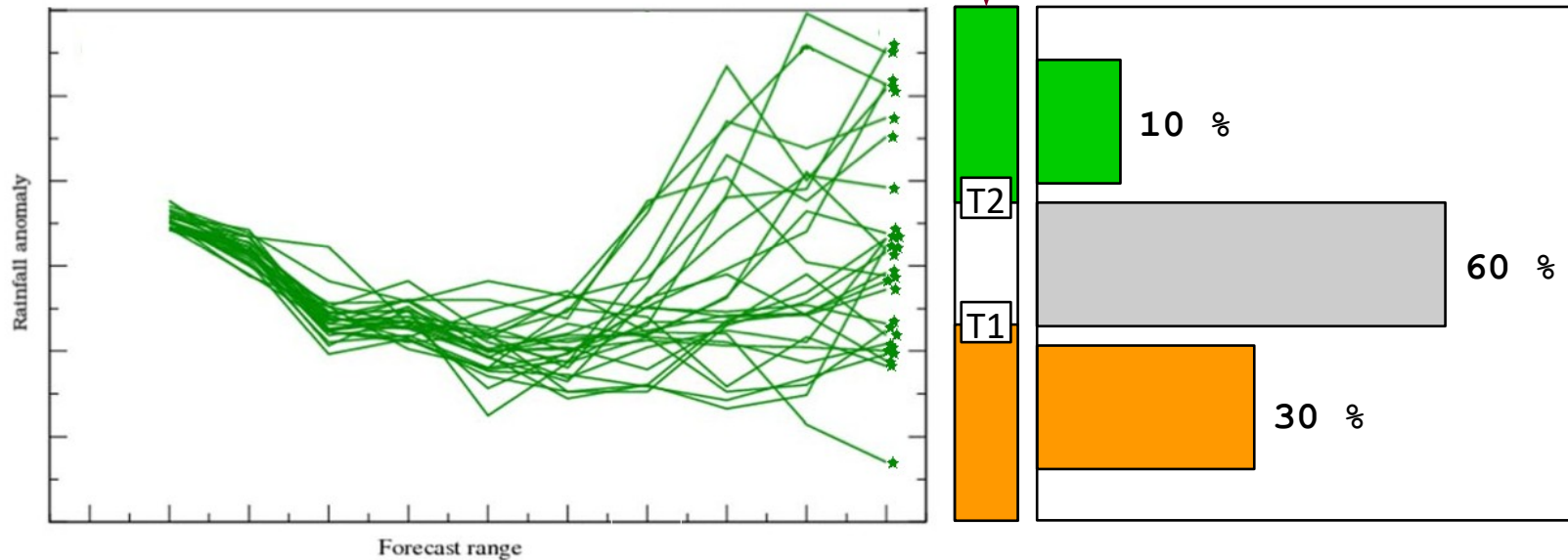
SWIOCOF : Seasonal forecast

Climate forecasts are expressed in terms of statistical parameters associated to the variability of the predicted variable .

SWIOCOF : Seasonal forecast

Probabilistic forecast: which tercile is the most likely?

Climatology: statistical distribution of observed variable

Rainfall anomaly

Forecast range

10 %

60 %

30 %

T2

T1

Ensemble forecast:
a plume of 50 members

Forecast range over running quarters.
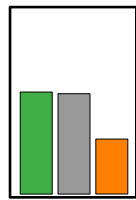Ex :
Start : September
Predicted ranges : OND / NDJ / DJF

Start of the
forecast

SWIOCOF : Probabilistic forecast
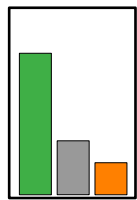
70 20 10 — Above normal
40 40 20 — Normal to above normal
20 60 20 — Normal
20 40 40 — Normal to below normal
70 20 10 — Below normal
33 33 33 — Climatology

Values above climatological average are more likely
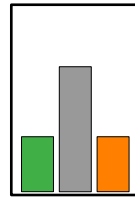
Values close to climatological average are expected
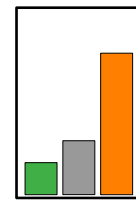
Values below climatological average are more likely
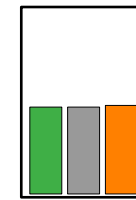
Any value of the parameter is possible

SWIOCOF : Performance of the system

Global assessment of the seasonal predictions for the region over a 24 years test period

OND Global statistics for the region:

	FCST	OBS	
- Nb positive anomalies (Normal to above normal / Above normal) :	179	129	**72 %**
- Nb negative anomalies (Normal to below normal / Below normal) :	197	141	**71 %**

- Nb missed Above normal cases : 51 / 180 = **28 %**

- Nb missed Below normal cases : 48 / 189 = **25 %**

NDJ Global statistics for the region:

	FCST	OBS	
- Nb positive anomalies (Normal to above normal / Above normal) :	223	143	**64 %**
- Nb negative anomalies (Normal to below normal / Below normal) :	194	138	**71 %**

- Nb missed Above normal cases : 54 / 197 = **27 %**

- Nb missed Below normal cases : 71 / 209 = **34 %**