CINDY2011/DYNAMO

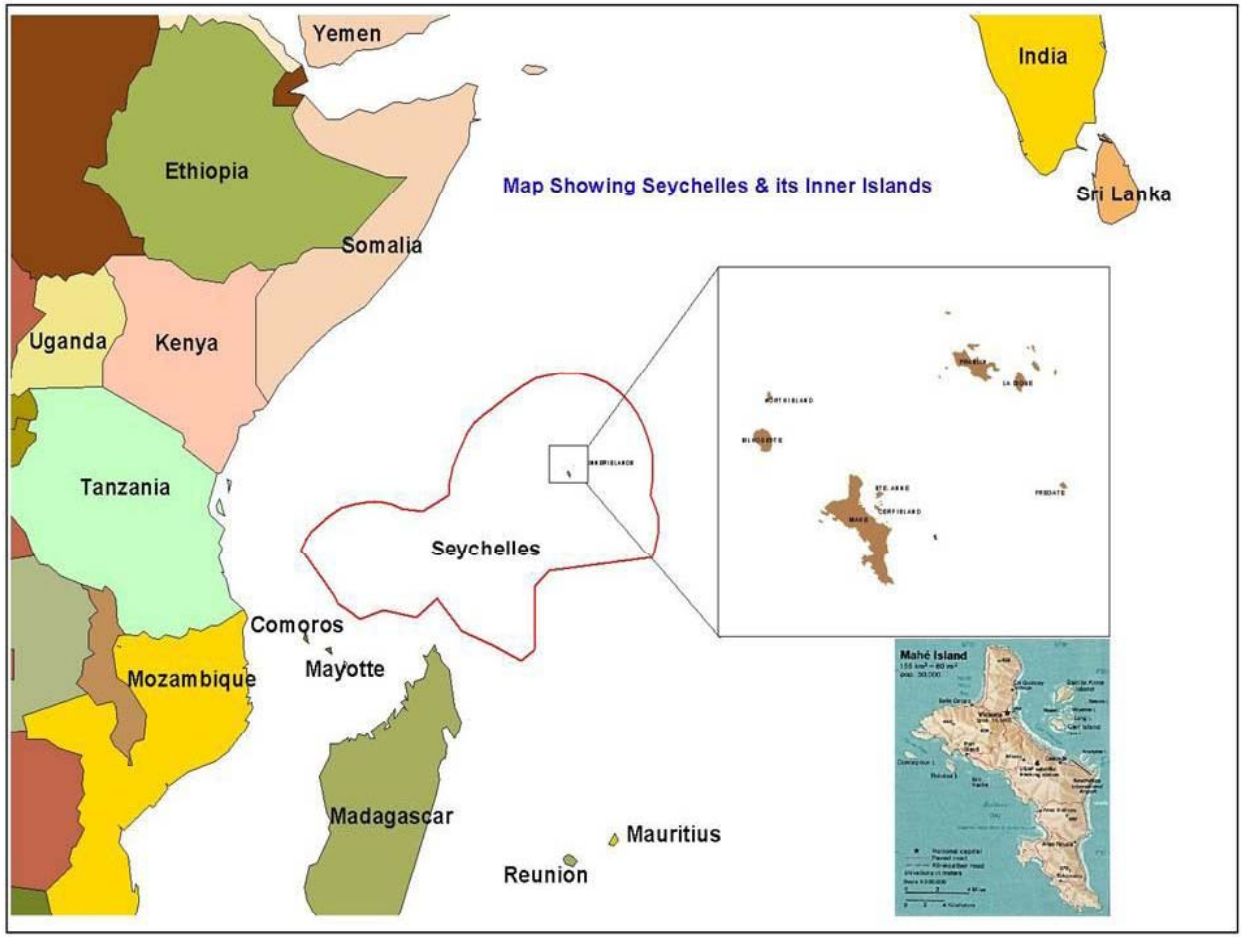
Operation Planning Workshop

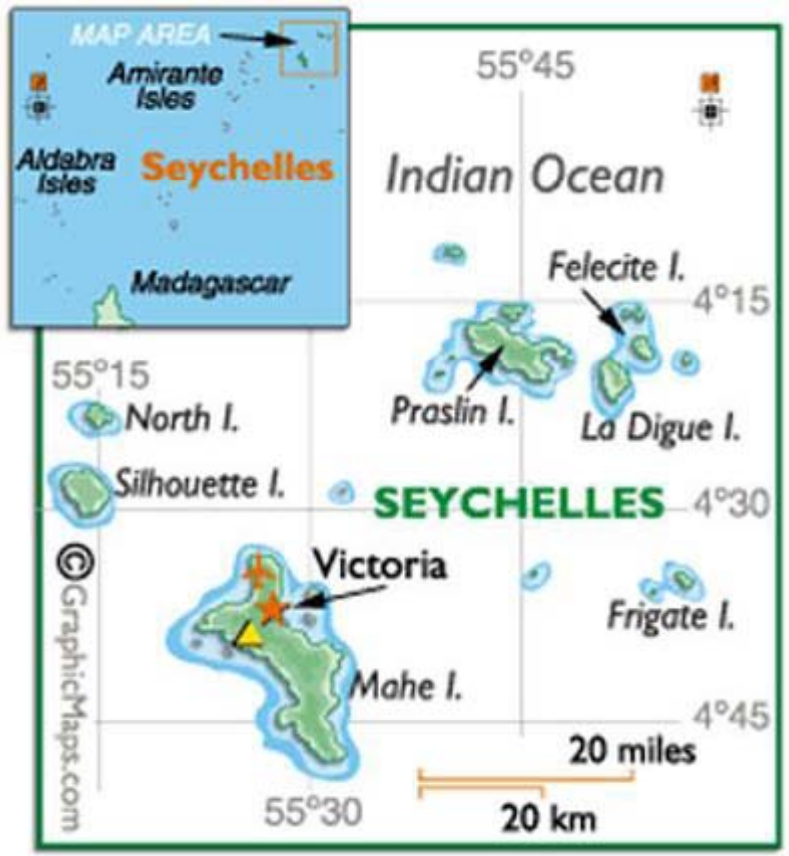
8 – 10 November 2010, Yokohama, Japan

Presentation from

SEYCHELLES

By Selvan Pillay


Yemen
India
Ethiopia
Map Showing Seychelles & its Inner Islands
Sri Lanka
Somalia
Uganda
Kenya
Tanzania
Seychelles
Comoros
Mayotte
Mozambique
Madagascar
Mauritius
Reunion
Mahé Island

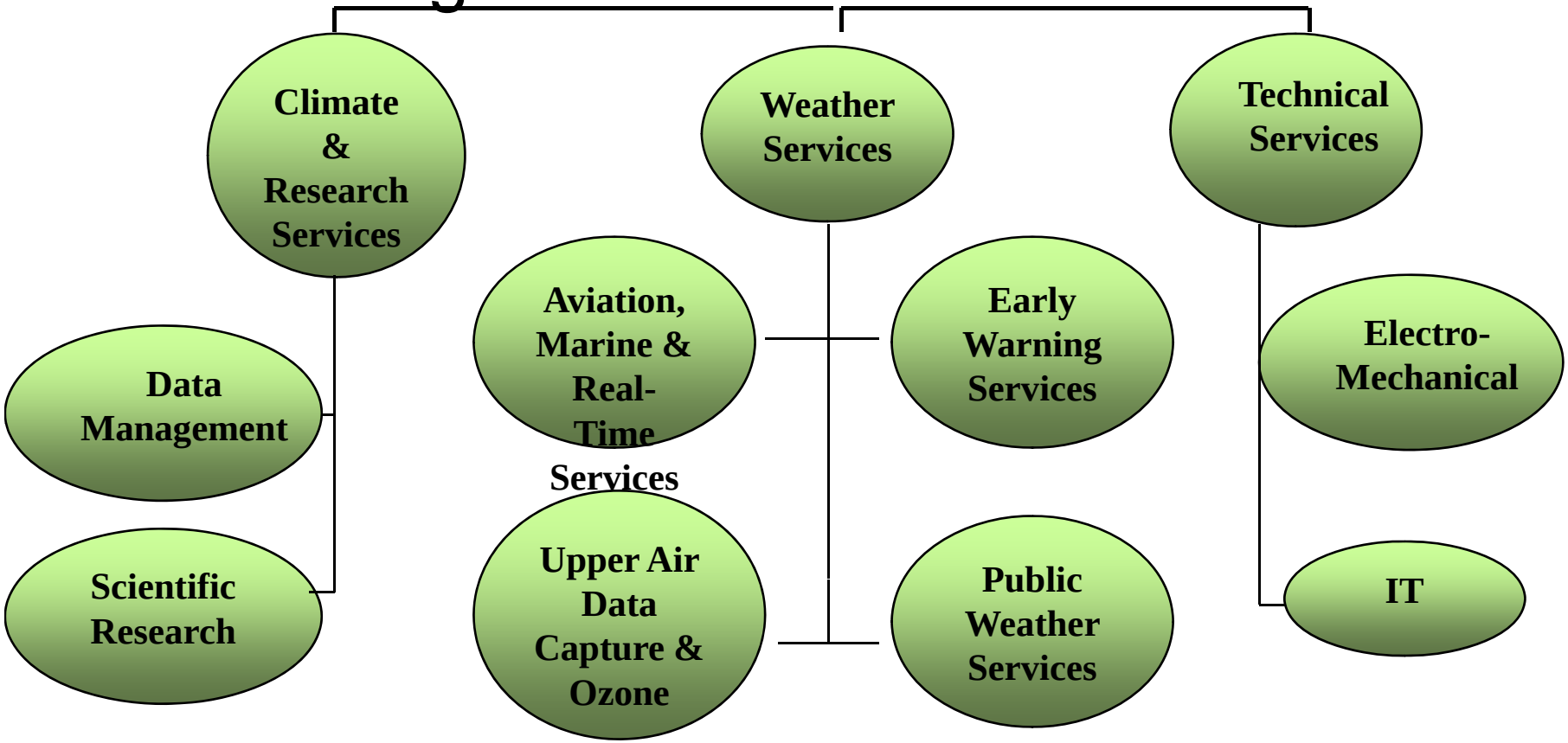

MAP AREA
Amirante Isles
Aldabra Isles
Seychelles
Madagascar
55°45
Indian Ocean
Felecite I.
4°15
55°15
North I.
Praslin I.
La Digue I.
Silhouette I.
SEYCHELLES
4°30
Victoria
Frigate I.
Mahe I.
4°45
20 miles
55°30
20 km
©GraphicMaps.com


INDIAN OCEAN
Feet
Metres
Mountain Peaks
Coral Reefs
Capital Town
Villages
Roads

- GEOGRAPHY
  - The Republic of Seychelles consists of over 116 islands scattered over 1million square kilometres of sea in the middle of the Western Indian Ocean.
  - In spite of the close proximity of Seychelles to the Equator, the climate is pleasant and healthy
  - The rainfall varies considerably from island to island and from year to year. Most of the rainfall occurs during the hot months when the northwest trade winds blows.

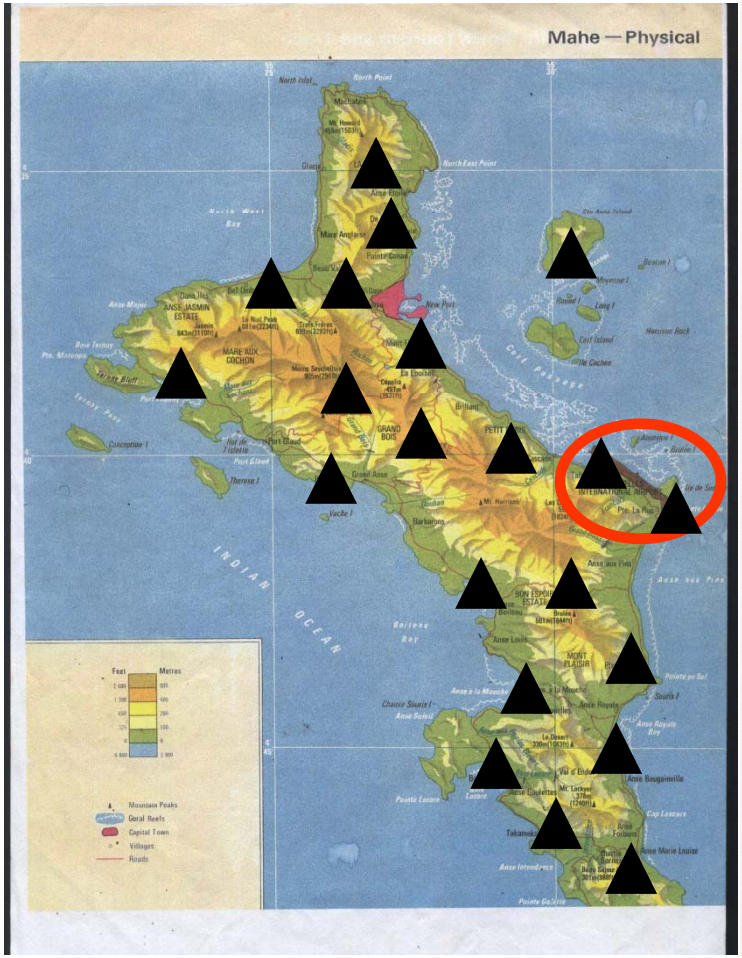
- Introduction
  - National Meteorological Services (NMS) of Seychelles is responsible to provide a cost effective Meteorological service to safeguard life and property, to improve social and economic structures, to protect the environment and as well as in support of international obligation

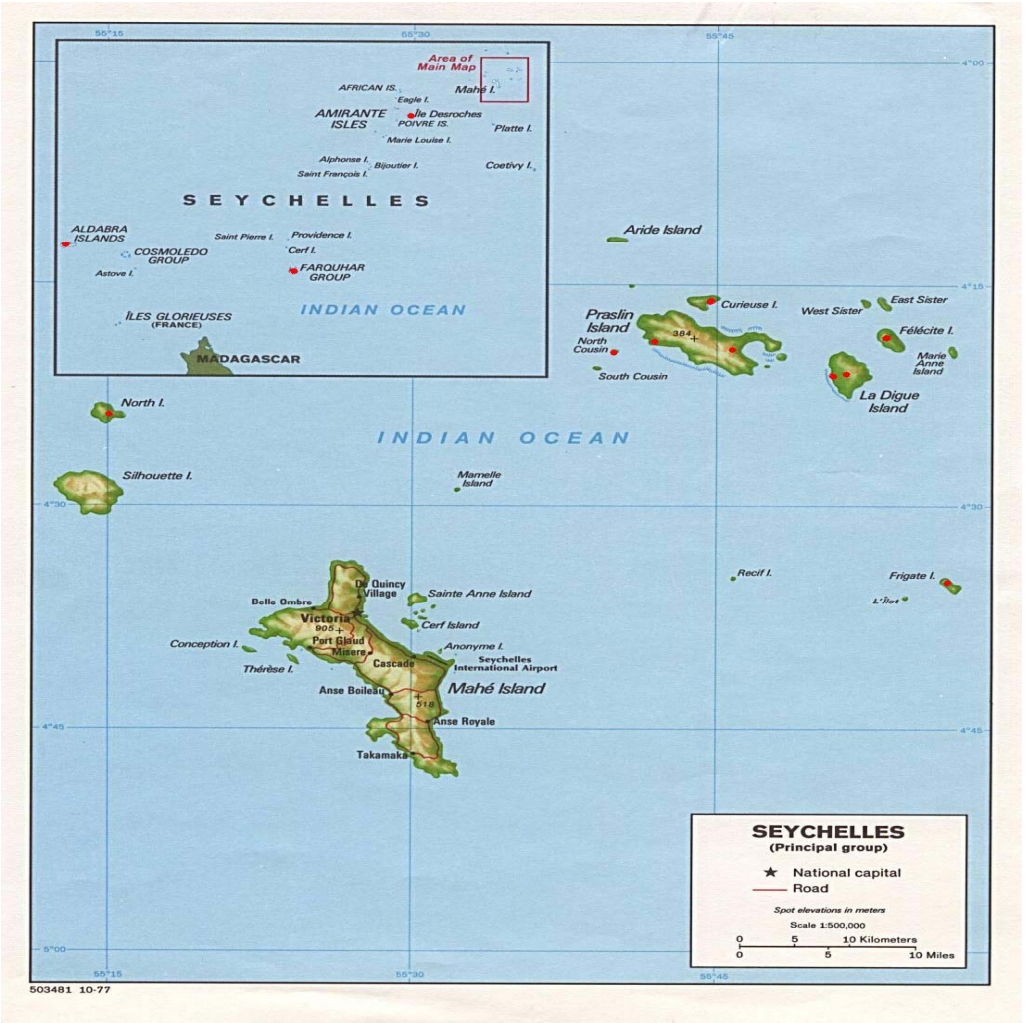
- NMS Organisation Chart



- Strengthening of Observation Networks
  - Current Situation
    - Rainfall Network
      - Rainfall measurements in Seychelles started during colonial times around 1860.
      - Observers then were private plantation owners who collected rainfall data for their personal use.
      - With the setting up of the National Meteorological Service in the early 1970s, the voluntary system of observation was further encouraged.

- Strengthening of Observation Networks
  - Current Situation – Rainfall Network
    - Today there are some 38 rainfall stations scattered over the Seychelles Archipelago. Most of the stations are operated by the National Meteorological Service under a Voluntary Observer Programme with a few of the stations operated by the Water Division of the Public Utilities Corporation (PUC). Rainfall Reading is done at 0700 hrs. each morning and the data are collected daily by phone.
    - However, the country, particularly Mahe, has a good network of rainfall observation, reading taken by the voluntary observers once a day at 7am. *(next slide shows some of the rainfall stations with Airport station circle in red)*


Mahe — Physical
INDIAN OCEAN
Feet
Metres
Mountain Peaks
Coral Reefs
Capital Town
Villages
Roads


Area of Main Map
AFRICAN IS.
Mahé I.
Eagle I.
AMIRANTE ISLES
Ile Desroches
POIVRE IS.
Platte I.
Marie Louise I.
Alphonse I.
Saint François I.
Bijoutier I.
Coetivy I.
SEYCHELLES
ALDABRA ISLANDS
Saint Pierre I.
Providence I.
Cerf I.
COSMOLEDO GROUP
Astove I.
FARQUHAR GROUP
ILES GLORIEUSES (FRANCE)
INDIAN OCEAN
MADAGASCAR
Aride Island
Curieuse I.
West Sister
East Sister
Félicité I.
Praslin Island
North Cousin
South Cousin
Marie Anne Island
La Digue Island
North I.
INDIAN OCEAN
Silhouette I.
Mamelle Island
Recif I.
Frigate I.
De Quincy Village
Belle Ombre
Victoria
Sainte Anne Island
Cerf Island
Conception I.
Port Glaud
Anonyme I.
Thérèse I.
Cascade
Seychelles International Airport
Anse Boileau
Mahé Island
Anse Royale
Takamaka
SEYCHELLES
(Principal group)
National capital
Road
Spot elevations in meters
Scale 1:500,000
10 Kilometers
10 Miles
503481 10-77

- Already obtained 5 Rainfall Data Loggers from Casella (UK) to replace the manual gauges.(soon to be installed)
- Only 1 automatic raingauge exists.
- The Plan is to install as much automatic gauges to:
    - Obtain Rainfall Intensity & Amount
    - Data availability in Real Time

- Strengthening of Observation Networks
  - Current Situation – Weather Stations
    - 1 Manned synoptic station at the International Airport
      - At present Seychelles has only one Main meteorological station, observing more than one weather parameters like rainfall, humidity, pressure, wind…etc, situated at the Seychelles International Airport.
    - 1 Upper-Air Sounding Station
      - doing one ascent per day at 00UTC
    - 8 Automatic Stations,
      - namely on Praslin, Denis Island, Desroches, Farquhar, Aldabra, Alphonse, Darros & Aride. (Only 3 are functioning)

- Strengthening of Observation Networks
  - Current Situation – Weather Stations
    - 15 to 20 years back climate was consider quite stable and therefore the station at the airport was easy to represent forecast of the whole country, including some of its inner islands, even if the topography of Mahe has a great influence on the weather distribution.
    - But now with climate change the weather patterns have changed and we can no more rely only on the airport station to make predictions

- Strengthening of Observation Networks
  - Current Situation – Weather Stations
    - Seychelles therefore needs to increase its observation network to better monitor and understand the climate and ultimately to better predict the weather and improve the early warning system.
    - Just acquired 2 Automatic Weather Stations from WMO
    - About to receive 4 more stations under the CC DARE Project – (Funded by Danish Govt.)

- Marine Forecasts
  - Need to increase number Ocean-based monitoring Stations
  - Need to have software for prediction (i.e. wave high, movement…etc)
  - Increase in Ocean-based Tourism activities and Fisheries demands more accurate forecasts.
    - Studies have shown that adaptation to climate change in Seychelles should focus on the coastal zone, fisheries, agricultural areas and water resources and outer islands, i.e. the four key sectors which are predicted to be mainly affected by climate change due to global warming.

- Multi-Hazard Early Warning System
  - Seychelles NMS is responsible to monitor and issue warning for tsunami, cyclone, flooding & landslides and strong winds
  - Warning Templates already exists for all of above
  - Need to improve on the response of these warnings, e.g warning levels, etc…

- Climate Change
  - Adaptation to climate change should not focus only on Mahé. The low-lying Seychelles islands, the Outer Islands are likely to suffer some of the worst effects of climate change and associated sea level rise.
  - Aldabra Atoll, a UNESCO World Heritage Site in the Southern Seychelles managed entirely by SIF, is mostly 2-10m above MSL, and as such is extremely vulnerable to even slight changes in sea level. Aldabra was the site of the first weather station in the Seychelles and basic climate variables have already been monitored there for more than 40 years so a long-term dataset exists from which trends can be determined and inferences made about climate change and its effects on the atoll.

- Climate Change
  - To ensure that a system for effective climate monitoring across the Seychelles is established.
    - It is vital to extend climate monitoring beyond the three main Seychelles islands of Mahé, Praslin and La Digue.
    - To reduce the country's vulnerability to the effects of climate change by providing the necessary information on which to base adaptive actions;
    - To contribute to national and regional weather databases and aid meteorological study in the area;
    - help other tropical low-lying islands adapt more effectively to the effects of climate change; and
    - provide information for best practices on how to mainstream climate change adaptation in the Seychelles and in Marine Protected Areas .

- During CINDY2011 Operations:
  - To perform additional Upper Air Ascents:
    - 3 extra radiosonde launch per day for 5 weeks,
    - 1 extra radiosonde launch per day for the rest of 1st Oct. 2011 – 31 Jan. 2012 period, that is one at 00UTC and the 2nd at 12UTC
    - NMS (Seychelles) is able to perform extra ascents upon request

Thank You