

JOINT WMO TECHNICAL PROGRESS REPORT ON THE GLOBAL DATA PROCESSING AND FORECASTING SYSTEM AND NUMERICAL WEATHER PREDICTION RESEARCH ACTIVITIES FOR 2015

Mozambique National Institute of Meteorology (INAM)

1. Summary of highlights

The NWP group was dissolved due to lack of human resources and internet problems

2. Equipment in use

"[information on the major data processing units]"
NETSYS, SYNERGIE, CLICOM and Microsoft Excel

3. Data and Products from GTS in use

- SYNOP-500
- METAR
- TAF

4. Forecasting system

4.1 System run schedule and forecast ranges

"[general structure of a prognostic system, models in operational use, run schedule, forecast ranges]"

We do not run any NWP model. Therefore, we rely on the output from Global Production Centres and SWFDP project webpage.

4.2 Medium range forecasting system (4-10 days)

4.2.1 Data assimilation, objective analysis and initialization

4.2.1.1 In operation

N/A

4.2.1.2 Research performed in this field

N/A

4.2.2 Model

4.2.2.1 In operation

N/A

4.2.2.2 Research performed in this field

N/A

4.2.3 Operationally available Numerical Weather Prediction Products

"[brief description of variables which are outputs from the model integration]"
As stated in 4.1, we use outputs from ECMWF, GFS, UK MetOffice and SAWS

4.2.4 Operational techniques for application of NWP products (*MOS, PPM, KF, Expert Systems, etc..*)

4.2.4.1 In operation

N/A

4.2.4.2 Research performed in this field

N/A

4.2.5 Ensemble Prediction System (EPS)

4.2.5.1 In operation

N/A

4.2.5.2 Research performed in this field

N/A

4.2.5.3 Operationally available EPS Products

"[brief description of variables which are outputs from the EPS"

N/A

4.3 Short-range forecasting system (0-72 hrs)

4.3.1 Data assimilation, objective analysis and initialization

4.3.1.1 In operation

N/A

4.3.1.2 Research performed in this field

N/A

4.3.2 Model

4.3.2.1 In operation

N/A

4.3.2.2 Research performed in this field

N/A

4.3.3 Operationally available NWP products

"[brief description of variables which are outputs from the model integration]"

4.3.4 Operational techniques for application of NWP products

4.3.4.1 In operation

N/A

4.3.4.2 Research performed in this field

"[Summary of research and development efforts in the area]"

N/A

4.3.5 Ensemble Prediction System

4.3.5.1 In operation

N/A

4.3.5.2 Research performed in this field

N/A

4.3.5.3 Operationally available EPS Products

"[brief description of variables which are outputs from the EPS"

N/A

4.4 Nowcasting and Very Short-range Forecasting Systems (0-12 hrs)

4.4.1 Nowcasting system

4.4.1.1 In operation

N/A

4.4.1.2 Research performed in this field

N/A

4.4.2 Models for Very Short-range Forecasting Systems

4.4.2.1 In operation

N/A

4.4.2.2 Research performed in this field

N/A

4.5 Specialized numerical predictions

[Specialized NP on sea waves, storm surge, sea ice, marine pollution transport and weathering, tropical cyclones, air pollution transport and dispersion, solar ultraviolet (UV) radiation, air quality forecasting, smoke, sand and dust, etc.]

4.5.1 Assimilation of specific data, analysis and initialization (where applicable)

4.5.1.1 In operation

N/A

4.5.1.2 Research performed in this field

N/A

4.5.2 Specific Models (as appropriate related to 4.5)

4.5.2.1 In operation

N/A

4.5.2.2 Research performed in this field

N/A

4.5.3 Specific products operationally available

N/A

4.5.4 Operational techniques for application of specialized numerical prediction products (*MOS, PPM, KF, Expert Systems, etc.*) (as appropriate related to 4.5)

4.5.4.1 In operation

N/A

4.5.4.2 Research performed in this field

N/A

4.5.5 Probabilistic predictions (where applicable)

4.5.5.1 In operation

N/A

4.5.5.2 Research performed in this field

N/A

4.5.5.3 Operationally available probabilistic prediction products

“[brief description of variables which are outputs from probabilistic prediction techniques]”

N/A

4.6 Extended range forecasts (ERF) (10 days to 30 days)

4.6.1 Models

4.6.1.1 In operation

N/A

4.6.1.2 Research performed in this field

N/A

4.6.2 Operationally available NWP model and EPS ERF products

N/A

4.7 Long range forecasts (LRF) (30 days up to two years)

4.7.1 In operation

"[Describe: Models, Coupled? (1 tier, 2 tiers), Ensemble Systems, Methodology and Products]"

Our long range forecast is based on the outputs from North American Multi-Model Ensemble project. The Model outputs are downloaded from the IRI data library. The statistical downscaling of these models is performed using the Model Output Statistic approach.

4.7.2 Research performed in this field

We are trying to tailor the seasonal forecast to meet the needs of our different stakeholders. Additionally, we are investigating new techniques of merging different climate model outputs, finding new predictors and predictands.

4.7.2 Operationally available EPS LRF products

"[brief description of variables which are outputs from the model integration]"

N/A

5. Verification of prognostic products

5.1 The verification of the seasonal forecast is done using the Relative Operative Characteristic (ROC). Additionally, we use percent of normal to divide the rain into tercile categories.

5.2 Research performed in this field

N/A

6. Plans for the future (next 4 years)

6.1 Development of the GDPFS

6.1.1 "[major changes in the Operational DPFS which are expected in the next year]"

Train a new team for NPW activities. Install a new NWP model

6.1.2 "[major changes in the Operational DPFS which are envisaged within the next 4 years]"

N/A

6.2 Planned research Activities in NWP, Nowcasting, Long-range Forecasting and Specialized Numerical Predictions

To revitalize the NPW group and develop NWP products. Revive and install new weather radars

6.2.1 Planned Research Activities in NWP

Create a new NPW team. Enhance NWP capabilities and improve internet for downloading initial conditions

6.2.2 Planned Research Activities in Nowcasting

Revive and install new weather radars.

6.2.3 Planned Research Activities in Long-range Forecasting

Use new predictors and predictands. Tailor the output to different stakeholders

6.2.4 Planned Research Activities in Specialized Numerical Predictions

Generate products to improve the marine forecast

7. References

www.inam.gov.mz