

Botswana Monsoon Time Scale

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Abstract: Botswana climate is semi-arid. Though it is hot and dry for much of the year, there is a rainy season, which runs through the summer months. Rainfall tends to be erratic, unpredictable and highly regional after a heavy downpour may occur in one area while 10 to 15 kilometers away there is no rain at all. Day time temperatures are around 32^o C and the humidity is between 50 – 80 %. March & April rainfall decreases and steadily cool. The whole country is windy and dusty during the dry season.

Botswana is affected by periodic droughts, and seasonal August winds flow from the west, carrying sand and dust which can obscure insubly. The country has facing the other disasters like earth queaks, floods.

Botswana mineral resources were formed during several geologic periods and included base metals such as copper, nickel, coal, diamond, salt, sand and gravel semiprecious gemstones and soda ash. The geology of most of the country is largely obscured by Aeolian sands.

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Key Words: Botswana Monsoon Time Scale

Introduction:

By establishing the Botswana Monsoon Time Scale and maintain, the country can be estimated the impending weather conditions and natural calamities rains, floods, droughts and winds etc in advance. Surface water resources can still be found.

Botswana Monsoon Time Scale:

Botswana monsoon does not mean that Botswana has a separate monsoon. Monsoon means a seasonal reversing wind accompanied by its corresponding weather changes and natural calamities in precipitation. We cannot be said that a monsoon especially to be relevant to a particular country. In every country, every year, in a certain order seasonal winds are repeating. Each and every country has its own monsoon winds and weather conditions. Keeping in view of all above geographical facts and circumstances, after studying the weather conditions and natural disasters in the Botswana, I have proposed a time scale to measure the seasonal winds weather countries of the country that is the Botswana Monsoon Time scale.

This is very useful to study the Botswana weather changes and natural calamities such as monsoon movements, rains and other weather changes in advance. The Botswana Monsoon Time Scale – a Chronological sequence of events arranged in between time and weather with the help of a scale for studying the past's, present and future movements of monsoon in the Botswana and its relationship with rainfall and other weather conditions and natural calamities of the country.

Collection Of Data:

The major or minor weather events of the Botswana which influence the weather of the country just like storms, winds, rainy winds, dust storms, monsoon pulses in the form of low pressure systems over the Botswana region have been entering on the scale in stages by 1 for low, 2 for depression, 3 for storm, 4 for severe storm and 5 for severe storm with core of hurricane winds, or any pertaining to the date and month of the each and every year.

Construction:

Prepare the Botswana Monsoon Time Scale having 365 horizontal days from March 21st to next year March 20th of a required period comprising of a large time and weather have been taken and framed into a square graphic scale. The main weather events if any of the Botswana have been entering on the scale as per date and month of the each and every year. If we have been managing the scale in this manner continuously, we can study the past, present and future movements of the monsoon and other weather and its weather conditions and natural calamities of the country. The Botswana Monsoon Time Scale reveals many secrets of the monsoon and weather and its relationship with rainfall & other weather problems and natural calamities of the country. The tracking date of main path & other various paths of the monsoon winds on the graph, denotes the onset of the monsoon and weather changes, monsoon pulses or low pressure systems, cyclones and other disturbances etc. And also we can find out many more secrets of the monsoon or weather conditions of the Botswana such as droughts, famines, cyclones, heavy rains, floods etc in the country by keen study of the Botswana Monsoon Time Scale.

Maintanance:

The main weather events if any of the Botswana country have been etering on the scale as per date and month of the each and every year. If we have been managing the scale of a country in this manner continuously, we can study the past, present and future movements of monsoon of the country.

Uses:

By development of the Botswana Monsoon Time Scale and maintain, the can be study and predict the monsoon movements, weather changes and its related impending weather conditions and natural calamities rains, floods, landslides, avalanches, blizzard and droughts, extreme winter conditions, heavy rainfall, mudflows, extreme weather, cyclones, cloud burst, sand storms, hails, and winds etc in advance.

Basics Of Global Monsoon Time Scales:

I have conducted many studies and researches on the world monsoon systems and invented the basics of

the Global Monsoons. The Global Monsoon Time Scale – a Chronological sequence of weather events arranged in between time and weather with the help of a scale for studying the past's, present and future movements of monsoon of a country and its relationship with rainfall and other weather problem and natural calamities.

Prepare the Global Monsoon Time Scale having 365 horizontal days from March 21st to next year March 20th of a required period comprising of a large time and weather have been taken and framed into a square graphic scale. The main weather events if any of the country have been entering on the scale as per date and month of the each and every year. If we have been managing the scale of a country in this manner continuously, we can study the past, present and future movements of monsoon of a country. We can make separate monsoon time scales per each and every individual country.

Global Monsoon Time Scales

African Monsoon Time Scale
North American Monsoon Time Scale
Asian Monsoon Time Scale
Australian Monsoon Time Scale
European Monsoon Time Scale

Regional Monsoon Time Scales

North American Monsoon Time Scale
North African Monsoon Time Scale
Indian Monsoon Time Scale
Western North Pacific Monsoon Time Scale
South American Monsoon Time Scale
South African Monsoon Time Scale
Australian Monsoon Time Scale
East Asian Monsoon Time Scale

Sub-Regional Monsoon Time Scales

South Asian Monsoon Time Scale
Maritime Continent Monsoon Time Scale
East African Monsoon Time Scale
West African Monsoon Time Scale
Indo-Australian Monsoon Time Scale
Asian-Australian Monsoon Time Scale
Malaysian Australian Monsoon Time Scale
Northern Australian Monsoon Time Scale
Arizona Monsoon Time Scale
Mexican Monsoon Time Scale
South-West Monsoon Time Scale
North-East Monsoon Time Scale
South East Asian Monsoon Time Scale

Indian Monsoon Time Scale:

For Example I have prepared the Indian Monsoon Time Scale by Preparing the Scale having 36 horizontal days from 1st April to next year March 31st of 128 years from 1888 to 2016 for the required period comprising of large time and weather have been taken and framed into a square graphic scale. The monsoon pulses in the form of low pressure systems over the Indian region have been entering on the scale in stages by 1 for low, 2 for depression, 3 for storm, 4 for severe storm and 5 for severe storm with core of hurricane winds pertaining to the date and month of the each and every year.

Construction:

The Indian Monsoon Time Scale – a Chronological sequence of weather events arranged in between time and weather with the help of a scale for

studying the past's, present and future movements of monsoon of a country and its relationship with rainfall and other weather problem and natural calamities. Prepare the Indian Monsoon Time Scale having 365 horizontal days from March 21st to next year March 20th of a required period comprising of a large time and weather have been taken and framed into a square graphic scale.

Maintanance:

The main weather events if any of the country have been entering on the scale as per date and month of the each and every year. If we have been managing the scale of a country in this manner continuously, we can study the past, present and future movements of monsoon of India. If we have been managing the scale in this manner continuously, we can study the past's present's and future's of the India monsoon and its

relationship with rainfall and other weather problems & natural calamities in India.

Collection Of Data:

The monsoon pulses in the form of low pressure systems over the Indian region have been entering on the scale in stages by 1 for low, 2 for depression, 3 for storm, 4 for severe storm and 5 for severe storm with core of hurricane winds pertaining to the date and month of the each and every year. For this, a lot of enormous data of low pressure systems, depressions and cyclone has been taken from many resources just like Mooley DA, Shukla J (1987); Characteristics of the west ward-moving summer monsoon low pressure systems over the Indian region and their relationship with the monsoon rainfall. centre for ocean-land atmospheric interactions, university of Maryland, college park, MD., and from many other resources.

Preparation Of Scales:

I have prepared the Indian Monsoon Time Scale by Preparing the Scale having 365 horizontal days from 1st April to next year March 31st of 128 years from 1888 to 2016 for the required period comprising of large time and weather have been taken and framed into a square graphic scale. The scale is to be long. So that it is divided into four parts suitable for publication. The first part is beginning from 1st April to July 12th, the second part is from 13 July to October 23rd, the third part is from 24th October to February 3rd and the fourth part is 4th February to March 31st ending. Later paste these 4 parts together.

Further the same has been prepared in three scales. The first one is preliminary basic scale, the second one is filled by data scale and the third one is evaluated and analyzed by data scale.

If we have been managing the scale in this manner continuously, we can study the past' present's and future's of the India Monsoon and its relationship with rainfall and other weather problems & natural calamities in India.

Analysis:

The India Monsoon Time Scale reveals many secrets of the Indian monsoon and its relationship with rainfall & other weather problems and natural calamities. For example, some bands, clusters and paths of low pressure systems along with the main paths of the Indian Monsoon (South-east monsoon and north-west monsoon) clearly seen in the map of the Indian monsoon it have been some cut-edged paths passing through its systematic zigzag cycles in ascending and descending orders which causes heavy rains & floods in some years and droughts & famines in another years according to their travel. For example, during 1871-1990's, the main path of the Indian Monsoon was rising over June, July, August and creating heavy rains and floods in most years. During 1900-1920's, it was raising over August, September

and resulting good rainfall in more years. During 1965-2004's it was falling over September and causing low rainfall and droughts in many years. At present it is rising upwards over June, July, August, September and will be resulting heavy rains & floods in coming years during 2004-2060. The tracking date of main path & other various paths such as south-east monsoon and north-west monsoon etc., of the Indian Monsoon denotes the onset of the monsoon, monsoon pulses or low pressure systems. And also we can find out many more secrets of the Indian monsoon such as droughts, famines, cyclones, heavy rains, floods, real images of the Indian monsoon, and onset & withdrawals of south east monsoon and north-west monsoon etc. by keen study of the Indian Monsoon Time Scale.

Principle:

This is an Astrogeophysical / Astrometeorological phenomenon of effects of astronomical bodies and forces on the earth's geophysical atmosphere. The cause is unknown however the year to year change of movement of axis of the earth inclined at $23\frac{1}{2}$ degrees from vertical to its path around the sun does play a significant role in formation of clusters, bands & paths of the Indian Monsoon and stimulates the Indian weather. The inter-tropical convergence zone at the equator follows the movement of the sun and shifts north of the equator merges with the heat low pressure zone created by the rising heat of the sub-continent due to direct and converging rays of the summer sun on the India Sub-Continent and develops into the monsoon trough and maintain monsoon circulation.

Hazard Detection Method:

The tracking date of main path & other various paths such as south-west monsoon and north-east monsoon etc., of the Indian Monsoon denotes the onset of the monsoon, monsoon pulses or low pressure systems, storms and its consequent secondary hazard Sand Storms etc.. And also we can find out many more secrets of the Indian monsoon such as droughts, famines, cyclones, heavy rains, floods, real images of the Indian Monsoon, and onset & withdrawals of south west monsoon and north-east monsoon etc. by keen study of the Indian Monsoon Time Scale.

For example, the date of tracking ridge of path is the sign to the impending cyclone and its secondary consequent hazard floods, storm surges etc.

Another example, the thin and thick markers on the upper border line of the Indian monsoon time scale are the signs to the impending heavy rains & floods and droughts & floods. The thick marking of clusters of low pressure systems on the Indian monsoon time scale is the sign to the impending heavy rains and floods and the thin marking of clusters of low pressure

systems on the Indian monsoon time scale is the sign to the impending droughts and famines.

Furthermore example, the main passage of line of monsoon travel from June to September and September to June are also signs to impending weather conditions of a country. For example, during 1871-1990's the main path of the Indian Monsoon was rising over June, July, August and creating heavy rains and floods in most years. During 1900-1920's it was falling over August, September and causing low rainfall in many years. During 1920-1965s, it was rising again over July, August, September and resulting good rainfall in more years. During 1965-2004's it was falling over September and causing low rainfall and droughts in many years. At present it is rising upwards over June, July, August, and will be resulting heavy rains & floods in coming years during 2004-2060 in India.

These are some examples only. We can find out many more secrets of a country weather conditions by keen study of its monsoon time scale.

Uses:

Global Monsoon Time Scales used to forecast the weather changes and natural hazards of a country in advance. All other weather related natural hazards such as avalanches, cyclones, damaging winds, droughts and water shortage, floods, thunderstorms, tornados, tropical cyclones, typhoons etc can be predicted.

By establishing the Global Monsoon Time Scales can help to study the movements of the one's country's monsoon and its monsoon related weather changes and natural hazards.

Conclusions: We can make many more modifications thus bringing many more developments in the Global Monsoon Time Scales. We can also make many more changes and development in the monsoon time scales and make separate monsoon time scales in name of each and every region of the world in accordance with the weather circumstances of the region.

The Figures are shown in the end of this issue.

References

- Mooley DA, Shukla J (1987); Characteristics of the west ward-moving summer monsoon low pressure systems over the Indian region and their relationship with the monsoon rainfall. Centre for ocean-land atmospheric interactions, university of Maryland, College Park, MD.
- Das P.K. and B.L. Bose, 1958, Numerical study of movement of monsoon depression, Ind. journal of meteor geophysics.
- Jadhav, S.K. and A.A.Munot, 2004; statistical study of the low pressure systems during summer monsoon season over the Indian region, *mausam*,55,15-30.
- Clustering of low pressure system during the Indian summer monsoon by intra seasonal oscillations, bn.goswami, rs.ajaya mohan, prince kxavier, and d.sengupta, centre for atmospheric and oceanic sciences, Indian institute of science, bangalour, india.
- Composite structure of monsoon low pressure system and its relation to Indian rainfall, v.krishna murthy and rs.ajaya mohan, 2010, *j.climate*, 23, 4285-4305.
- Irlapati GR. Results of Research on Physics and some Other Related Topics. *Researcher* 2016;8(1s):1-565. ISSN 1553-9865 (print); ISSN 2163-8950 (online). <http://www.sciencepub.net/researcher/research0801s16>, 2016.
- Irlapati GR. Monsoon Time Scale (Basics of the Monsoon Time Scale). *Academ Arena* 2016;8(5s): 1-488. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0805s16>, 2016.
- Irlapati GR. Studies On The Climate And Natural Disasters (1). *Academ Arena* 2017;9(1s): 1-425. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0901s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (2). *Academ Arena* 2017;9(2s): 1-220. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0902s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (3). *Academ Arena* 2017;9(3s): 1-220. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0903s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (4). *Academ Arena* 2017;9(4s): 1-220. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0904s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (5). *Academ Arena* 2017;9(5s): 1-220. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0905s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (6). *Academ Arena* 2017;9(6s): 1-220. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0906s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (7). *Academ Arena* 2017;9(7s): 1-220. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0907s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (8). *Academ Arena* 2017;9(8s): 1-258. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0908s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (9). *Academ Arena* 2017;9(9s): 1-220. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0909s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (10). *Academ Arena* 2017;9(10s): 1-386. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0910s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (11). *Academ Arena* 2017;9(11s): 1-362. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0911s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters (12). *Academ Arena* 2017;9(12s): 1-395. ISSN 1553-992X (print); ISSN 2158-771X (online). <http://www.sciencepub.net/academia/aa0912s17>, 2017.
- Irlapati GR. Studies On The Earth Science Related (1). *Rep Opinion* 2017;9(1s):1-83. ISSN 1553-9873 (print); ISSN 2375-7205 (online). <http://www.sciencepub.net/report/report0901s17>, 2017.
- Irlapati GR. Studies On The Earth Science Related (2). *Rep Opinion* 2017;9(2s):1-85. ISSN 1553-9873 (print); ISSN 2375-7205 (online). <http://www.sciencepub.net/report/report0902s17>, 2017.
- Irlapati GR. Studies On The Earth Science Related (3). *Rep Opinion* 2017;9(3s):1-129. ISSN 1553-9873 (print); ISSN 2375-7205 (online). <http://www.sciencepub.net/report/report0903s17>, 2017.
- Irlapati GR. Studies On The Climate And Natural Disasters. *Academ Arena* 2017;9(11s): 1-29. (ISSN 1553-992X).

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