

Introduction:

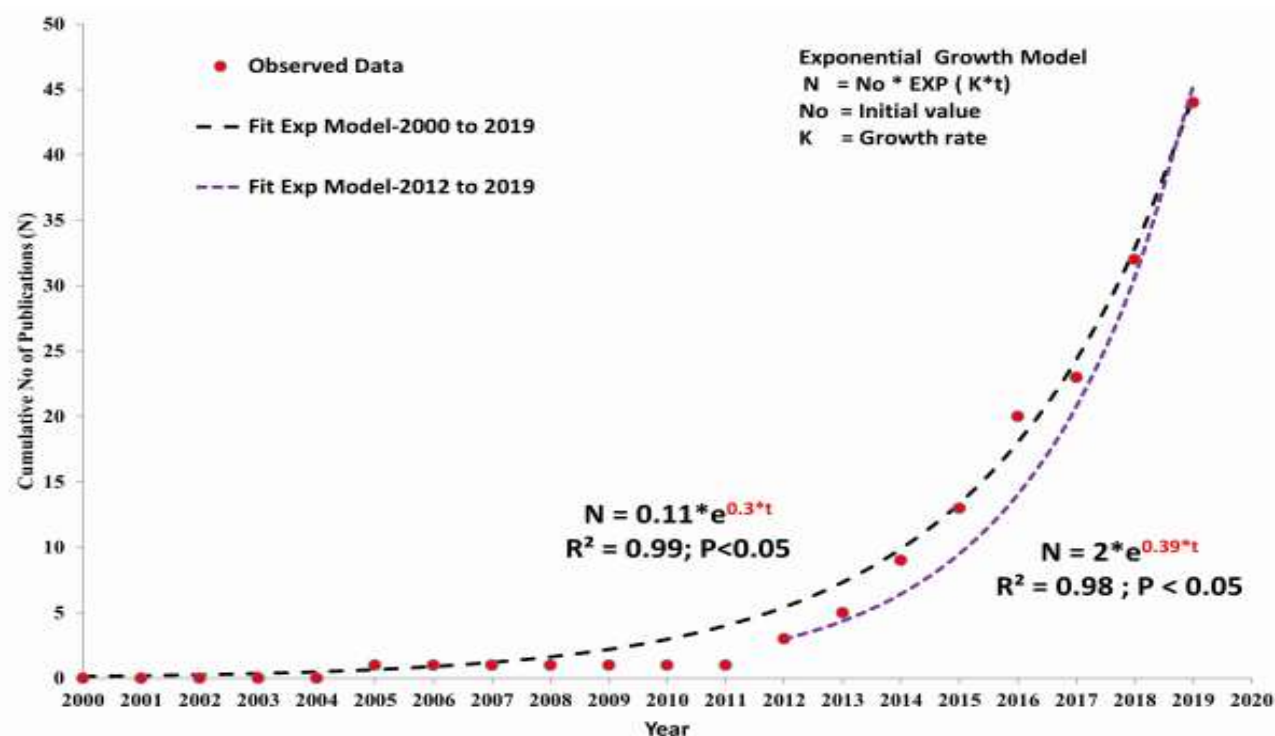
Flash Drought is used mainly to describe the rapid intensification of drought, which can result in profound damages to the ecosystem functioning, and consequently lead to severe socioeconomic losses (Svoboda et al., 2002).

Flash drought has only recently gained significant attention even though its effect on society and the environment (Otkin et al., 2018).

The last decade saw rapid development of flash drought research because of increasing public understanding of water conservation and sustainable water management. (Yuan et al., 2019).

Their rapid onset makes their monitoring and forecasting difficult (M. Anderson et al., 2016).

Results:



Challenges and Future Perspectives

Definition For Identification of Flash Drought (FD)

1. Threshold levels (40th percentile to 20th percentile)
2. Duration (Four pentads or 3 weeks)
3. Rate of intensification

Suitable Indicators

1. Evapotranspiration (ET)
2. Soil moisture Content (SMC)
3. Climatic parameters (Rain, Temperature)
4. Drought Indices (SPEI, SP)

Early Warning System

1. Development of early warning systems for sub-seasonal to seasonal predictions is another one of the arising challenges.
2. Selection of suitable predictors to timely forecasting the Flash Drought.
3. Development of early warning systems for sub-seasonal to seasonal predictions.

Response of Ecosystem to FD

1. Global primary production (GPP)
2. Net primary production (NPP)
3. Water use Efficiency (WUE)
4. Vegetation Health Index (VHI)

Impact of Climate Change

1. Difficult to project the human influence on climate change due to data scarcity. Uncertainties in projected climatic data for extreme events make it challenging to achieve an accurate prediction of flash drought due to its rapid intensification over a few weeks or pentads.
3. There are still inconsistencies in projections applied to regional hydro-meteorological studies, due to their coarser horizontal resolution

Conclusion:

- The main findings suggest that in order to improve our ability to handle the risk of flash droughts, we need to enhance our understanding of climate-vegetation-drought interactions, as well as the human involvement to the hydrological systems.

References:

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