**Big, Open and Linked Data as a tool to real-time and history global climate observation at Monitoring Center of Essential Climate Variables**

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Currently, 50 Essential Climate Variables (ECVs) are required to support the work of the United Nations Framework Convention on Climate Change (UNFCCC) and the Intergovernmental Panel on Climate Change (IPCC). The variables were developed according to theirs techno-economic feasibility and were divided in three main domains: 1) Atmospheric (over land, sea and ice); 2) Oceanic; 3) Terrestrial. The observations refer to physical and chemical data that require expert knowledge in their specific areas of study. Those large datasets characterizes the Big, Open and Linked Data (BOLD). It means to have simultaneously a huge quantity, diversity, variety and velocity of data collection, storage and analyze of standardized and open data format.

The recent computer hardware and software features and capacity enabled to deal with BOLD of ECVs. Even considering the advances, stakeholders as scientists and governments, still face issues to analyze the BOLD of ECVs. From this puzzle, this paper aims to consider the current development challenges to improve the UNFCCC and the IPCC international public policy. As an approach to reach the objective of this paper, it was conducted a scientific and practical literature review identifying gaps on: 1) ECVs data and infrastructure; 2) integration and analysis of data; 3) Decision-making and public policies.

The expected results are guidelines with a set of recommendations on each aforementioned gaps with the objective of improving the data quality and collection of ECVs, creating an Information and Communications Technology (ICT) infrastructure and architecture that support sufficient computing capacity to enable BOLD work, creating a diversified team of analysis to deal with BOLD and creating an integrated and real-time Monitoring Center of ECVs. This Center aims to enable a faster and effective international, national, regional and local data analysis and decision making that will combine the identified recommendations: i) automatized data collection from huge number of sensors on Earth (Internet of Things) - requiring the installation of sensors in several points on the planet; ii) automatized storage and access (modern open data portal) of data from sensors on the planet - requiring massive computational capacity to storage, treat and process data; iii) automatized data analysis (mathematical modeling) - requiring multidisciplinary teams that deal with data analysis and with expertise on environmental public policies; and, iv) dashboards at videowall (big screens on a wall) displaying the data analysis of real-time and history of BOLD of ECVs on a business intelligence with geographical and analytical report features.