Press Release

Ministry of Water Resources, RD & GR and Google to collaborate for using state- of -art technologies for flood management

Monday, 18th June, 2018: Ministry of Water Resources, River Development and Ganga Rejuvenation (MOWR,RD &GR) and Google have agreed to work together using artificial intelligence and advanced geo-spatial mapping tools that aim at effectiveflood management in India.

MOWR, RD & GR had earlier launched an ambitious programme 'National Hydrology Project' (NHP) during the year 2016-17. NHP is a World Bank assisted central sector scheme with pan India coverage. The objective of National Hydrology Project is to improve the extent, quality, and accessibility of water resources information, decision support system for floods and basin level resource assessment/planning and to strengthen the capacity of targeted water resources professionals and management institutions in India.

In order to fulfil objective as above, Central Water Commission (CWC), India's apex technical organization in the field of Water Resources, functioning as an attached office of the MOWR, RD & GR, Government of India has entered into a Collaboration Agreement with Google. CWC would use state-of-the-artadvances made by Google in the in the field of Artificial Intelligence, Machine Learning and geo spatial mapping for effective management of water resources particularly in the field of flood forecasting and dissemination of flood related information to the masses widely using the dissemination platforms developed by Google. This initiative is likely to help crisis management agencies to deal extreme hydrological events in a better manner.

Under this Agreement, CWC and Google will share technical expertise in the fields of artificial intelligence, machine learning, geospatial mapping and analysis of hydrological observation data to collaborate on (i) improving flood prediction systems, which will help provide location-targeted, actionable flood warnings, (ii) high priority research project utilizing Google Earth Engine to help visualize and improve flood management and (iii) a cultural project to build online exhibitions on the Rivers of India .

The initiative on flood forecasting is likely to meet the much awaited demand of the inhabitants of the flood prone areas for inundation warnings with sufficient lead time. Till 2016, CWC was disseminating flood levels with maximum lead time of one day. During the flood season of 2017, CWC resorted to rainfall based modelling and issued flood advisories on trial basis with 3 days lead time. Under collaborative arrangement, Google would use high resolution Digital Elevation Model and vast computational resources and its expertise in the field of Artificial Intelligence to generate flood inundation maps utilising the level forecast input provided by CWC. The information in the form of likely extent and depth of inundation would be disseminated with a lead time of up to 3 days. For the flood season of 2018, inundation forecasting would be done on trial basis and the same would be up scaled in near future. The collaborative arrangement is likely to result in saving of crore of rupees which otherwise would have to be spent by the government on acquiring high resolution DEM, high end computational resources and developing dissemination platforms widely used by the masses.   This would enable the Government as well as disaster management organisations to identify well in advance the locations and population, which are at risk from floods and require warnings and information.This collaborative initiative is expected to be a milestone in flood management and in mitigating the flood losses.

Commenting on the collaboration, Shri Nitin Jairam Gadkari, Hon. Minister for Water Resources, River Development and Ganga Rejuvenation said the need of the hour is to use the state-of- art technology for developing systems which are beneficial to the common people. On an average, in the last five years (2011-16) only, India has lost around 1500 precious human lives each year due to floods. This is in addition to loss of livestock and damage to property. He expressed his satisfaction over the collaborative effort being made by Ministry of Water Resources and Google. He hopes that, by leveraging Artificial Intelligence and Geo-Spatial Tools, developed by Google, it would be possible to mitigate the loss of life and property and save million of rupees in the effort.

Chetan Krishnaswamy, Director, Public Policy, Google India added , "Artificial intelligence has the potential to improve people's lives in profound ways — from helping diagnose diseases to breaking down language barriers . We are proud to be working with the Central Water Commission, MoWR on these initiatives and hope to have tangible, positive impact on the lives of people who live around India's rich network of water bodies. We do believe this will serve as a great example of how the broader ecosystem can use AI to solve citizen-centric challenges for India. "

Globally, Google has been working with researchers, companies and developers, and creating tools to help solve complex problems with machine learning. These include the open-source machine learning framework TensorFlow , custom-built machine learning chips TPUs , Cloud AI ––a suite of products to help businesses build their own machine learning powered services from pre-trained APIs to Cloud AutoML and the Cloud Machine Learning Engine . Google has also made available a set of educational resources about machine learning and AI, including a free online machine learning crash course that anyone can use to learn and practice machine learning concepts.