International Civil Aviation Organization

INFORMATION PAPER

Eighteenth Meeting of the Meteorological Information Exchange Working Group (MET/IE WG/18)

Tenth Meeting of the Meteorological Services Working Group (MET/S WG/10)

Web-conference, 27 to 31 July 2020

Agenda Item 9: Deficiencies in the provision of meteorological services

UPLIFTING OBSERVATIONS AND METEOROLOGICAL FORECASTING CAPACITY IN PAPUA NEW GUINEA: THE PAPUA NEW GUINEA CAPACITY DEVELOPMENT PROGRAM (PNGCDP: 2017-2022)

(Presented by Australia)

SUMMARY

Through the Meteorological Annexe to the Memorandum of Understanding between the Government of Papua New Guinea (PNG) and the Government of Australia on Cooperation in the Transport Sector, the Australian Bureau of Meteorology (BoM) are supporting the PNG National Weather Service (NWS) to uplift observations and metrological forecasting capacity which underpin aviation weather services provision.

1. INTRODUCTION

1.1. PNG is a nation with intense transport challenges. The topography, multi-island nature, population make-up, and tropical climate pose issues for aviation, land and maritime transport. PNG has a monsoonal climate with intense summer rainfall and a large variation in climate across the country.

1.2. The PNG NWS is positioned within the Technical Services Division of the PNG Department of Transport (DoT) and operates within a highly challenging physical and social environment, providing critical warning, weather, and climate services to a diverse community of marine, aviation and road transport users, emergency services organizations, agricultural users and the general public.

1.3. In April 2019, the Australian Department of Foreign Affair and Trade (DFAT) approved a three-year extension of the Bureau of Meteorology's PNGCDP. Now a 5-year, AU$5million initiative (2017-2022), PNGCDP is aimed at uplifting the observations and meteorological forecasting capacity across PNG in partnership with the PNG NWS (with an emphasis on aviation weather service provision).

2. DISCUSSION

2.1. The BoM has supported the PNG NWS to develop and implement their first Strategic Plan (2019-2023). PNGCDP activities over the remaining two years of the program (outlined below) are strongly aligned with the objectives of this plan developed in consultation with PNG aviation stakeholders.

2.2. The BoM has facilitated the integration of observations from a third party network of 37 Automated Weather Stations (AWS) across PNG with PNG NWS systems. The approach used mobile phone tower infrastructure and Amazon Web Services to ingest and quality control observations before delivering them to the PNG NWS observation desk in Port Moresby. AWSs at 25 sites are currently reporting to Port Moresby with the remaining 12 scheduled for integration by the end of 2020. These observations underpin capacity development activities currently underway with PNG NWS observing staff.

2.3. The BoM is facilitating the ingestion of these observations into the World Meteorological Organization's (WMO) Global Telecommunication System (GTS) for international discoverability and incorporation into global numerical weather prediction (NWP) models. Improved NWP over PNG will improve critical forecast guidance for PNG NWS forecasters.

2.4. The BoM is supporting the PNG NWS to identify third party AWS sites in close proximity to active volcanoes where existing web camera technology (or new) could be further leveraged to support the provision of ground-based volcanic ash observations to the Rabaul Volcano Observatory (RVO), the PNG NWS and Volcanic Ash Advisory Centre (VAAC) Darwin. This work is currently being undertaken in support of the International Airways Volcano Watch (IAVW).

2.5. The BoM has been working with PNG NWS to uplift meteorological forecaster capacity, with an emphasis on aviation weather service provision through a series of capacity development activities involving but not limited to, the customisation and delivery of select WMO Basic Instruction Package for Meteorologists (BIP-M) modules, increased relationship strengthening (i.e. mentoring) between Port Moresby and Australian forecast centres and support for the upgrade of analysis tools and communications pathways towards improved aviation product dissemination.

2.6. COVID-19 impacts: All international travel to PNG ceased in March 2020. The PNGCDP has pro-actively transitioned to remote delivery through the adoption of video conferencing platforms and file sharing services (i.e. MS Teams, Google Meet and SharePoint). Emphasis is currently on collaboratively developing training materials for observers and forecasters with PNG NWS senior leadership staff which will be delivered remotely over the next 12 months across a series of mechanisms including online self-paced modules, virtual classrooms, pre-recorded video and hard copy ‘booklet style’ reinforcement.

3. ACTION BY THE MEETING

3.1 Note the information contained in this paper.

Attachment 1

A and B – This AWS (only accessible by helicopter) is proximal to the Kokoda Track and was the 21st station restored over the last 12 months by the PNGCDP aimed at addressing the immediate need for observations across PNG and enhancing capacity development activities between the BoM and the PNG NWS; and C. PNGCDP co-directors Mr Sam Maiha (former Director of the PNG NWS) and Dr Adele Crozier (BoM) at the Strategic Plan Launch (October 2019).

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