

Preparing the Next Generation of Papua New Guinean Geoscientists

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Papua New Guinea Investment Week
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6 - 11 December 2024



Presentation Outline

UPNG Background

UPNG Earth Sciences Division: 06/1967 - 04/2024

UPNG Earth Sciences Division: 05/2024 - Present

UPNG Earth Sciences Division: Strategic Interventions

UPNG Earth Sciences Division: Concluding Remarks

Acknowledgements



UPNG Background

24 May 1965

- **Signing of Ordinance by Australian Government**
- **Establishment of UPNG (Waigani, Port Moresby, PNG)**

School System

- **School of Business & Public Policy (SBPP), Waigani Campus**
- **School of Humanities & Social Sciences (SHSS), Waigani Campus**
- **School of Law (SOL), Waigani Campus**
- **School of Medicine & Health Sciences (SMHS), Taurama Campus**
- **School of Natural & Physical Sciences (SNPS), Waigani Campus**
- **Open & Distance Learning Centers in 21 Provinces & NCD**



UPNG Earth Sciences Division: 06/1967 - 04/2024

1967

- First geology course was offered (Cliff Ollier)

1973

- Geology started as a separate department
- 5-year-long undergraduate program, decreasing to 4.5 & 4.0
- First graduate in late 1970s

Since 1980s

- First PNGean geologist on external engagement to Chile -
(*Arnold Sie, Niugini Mining Ltd*), then others to rest of the world

UPNG Earth Sciences Division: 06/1967 - 04/2024 (Cont)

Academic Staff: 06/1967 - 09/1989

- *Cliff Ollier (06/1967)*
- *Warren Manser (1967 - 1983, UK)*
- *Peter Nixon (Foundation Professor, 1976 - 1978, UK)*
- *Ken Brooks (Professor, 1983 - 1985, UK)*
- *Michael A. Worthing (UK)*
- *David Haig (Emeritus Professor, Australia)*
- *Salam Malagan (Madang Province, PNG)*
- *Russell Perembo (Oro Province, First PhD - UWA, PNG)*
- *William Lacy (Visiting Professor James Cook University, Australia)*



UPNG Earth Sciences Division: 06/1967 - 04/2024 (Cont)

Academic Staff: 10/1989 - 04/2024

- *Hugh Davies (10/1989 - 26/04/2024, Australia)*
- *Trevor Beardsmore, Kim Dowling (Australia); Ken Lawrie (Scotland); Jayson Meyers, Thomas Wagner, Robert Jr Winn (USA); Peter Walbran, Chris Wilson, Scott Elliot (UK); Dan Silva (Sri Lanka); Alex Losada-Calderon (Chile); Guojian Xu (China) (1990s)*
- *Salam Malagun, Russell Perembo, Paul Itogien & Wilfred Lus, Patricia Ila'ava, Joseph Espi, Simon Kawagle, John Banda, James Wapyer, Yako Tekopiri, Jerry Dunga, Leo Jonda, Amanda Tevlone & Stanis Konabe (PNG)*



UPNG Earth Sciences Division: 05/2024 - Present *(Cont)*

(1) Current Staff

- **Simon Kawagle** (*MSc, UPNG & Curtin, Western Australia or WA*)
- **Joseph Espi** (*PhD, Tsukuba University, Japan*)
- **James Wapyer** (*MSc, China University of Geoscience @ Wuhan*)
- **Jerry Dunga** (*MSc, UWA; PhD now @ University of WA*)
- **Leo Jonda** (*PGDS, Victoria, NZ*)
- **Amanda Tevlone** (*Master, Curtin, WA*)
- **Stanis Konabe** (*BScH, UPNG; MSc now @ Akita University, Japan*)
- **4 Academic Positions yet to be filled**
- **5 Technical support staff**



UPNG Earth Sciences Division : 05/2024 - Current (Cont)

(2). BSc Degree Program with Major in Earth Sciences

[2 Semesters - 15 weeks - per year over 4 years]

- Year 1: Chemistry, Foundation Mathematics, Physics & Biology
- Year 2: 3x Earth Sciences courses per semester
- Year 3: 3x Earth Sciences courses per semester
- Year 4: 3x Earth Sciences courses per semester + Industrial Training
- Year 5: BSc Honors
- Note: 3 Enrichment & 4 Broadening Courses are also completed.

(3). Postgraduate Programs

- PGDS, MSc & PhD (by Research)



UPNG Earth Sciences Division: 06/2024 - Current (Cont)

(4). Challenges & Limitations

- Homogenizing individual from 840 culturally & socially different persons
- Inadequate annual budget allocation
- Unavailability of advanced analytical equipment
- Limited access to up-to-date specialist equipment & softwares
- No sustained interest in academic career & postgraduate studies
- Less number of academic staff with PhD & research culture
- Less number of academic staff with relevant industry experience
- Limited funds for research
- Limited collaboration with industry players in PNG
- Limited collaboration with external partners



UPNG Earth Sciences Division: Strategic Interventions

- Immediate external review of undergraduate & postgraduate programs
- Provide student-centered learning environment with 50:50 % partnership
- Introduce new courses (eg, Marine Geosciences) & field trips (eg, Highlands)
- Secure funds for advanced analytical equipment (eg, XRD, XRF, Horiba)
- Secure funds for specialist equipment & softwares (eg, MineSight)
- Increase number of academic staff with PhD (eg, Jerry Dunga @ UWA)
- Create Geosciences Industry Advisory Team
- Secure secondment of academic staff with industry
- Secure funds for research, student sponsorships, field trips & prizes/awards
- Increase research collaboration with & assistance from industry in PNG
- Increase partnership with external partners (eg, GA, IDSSE)

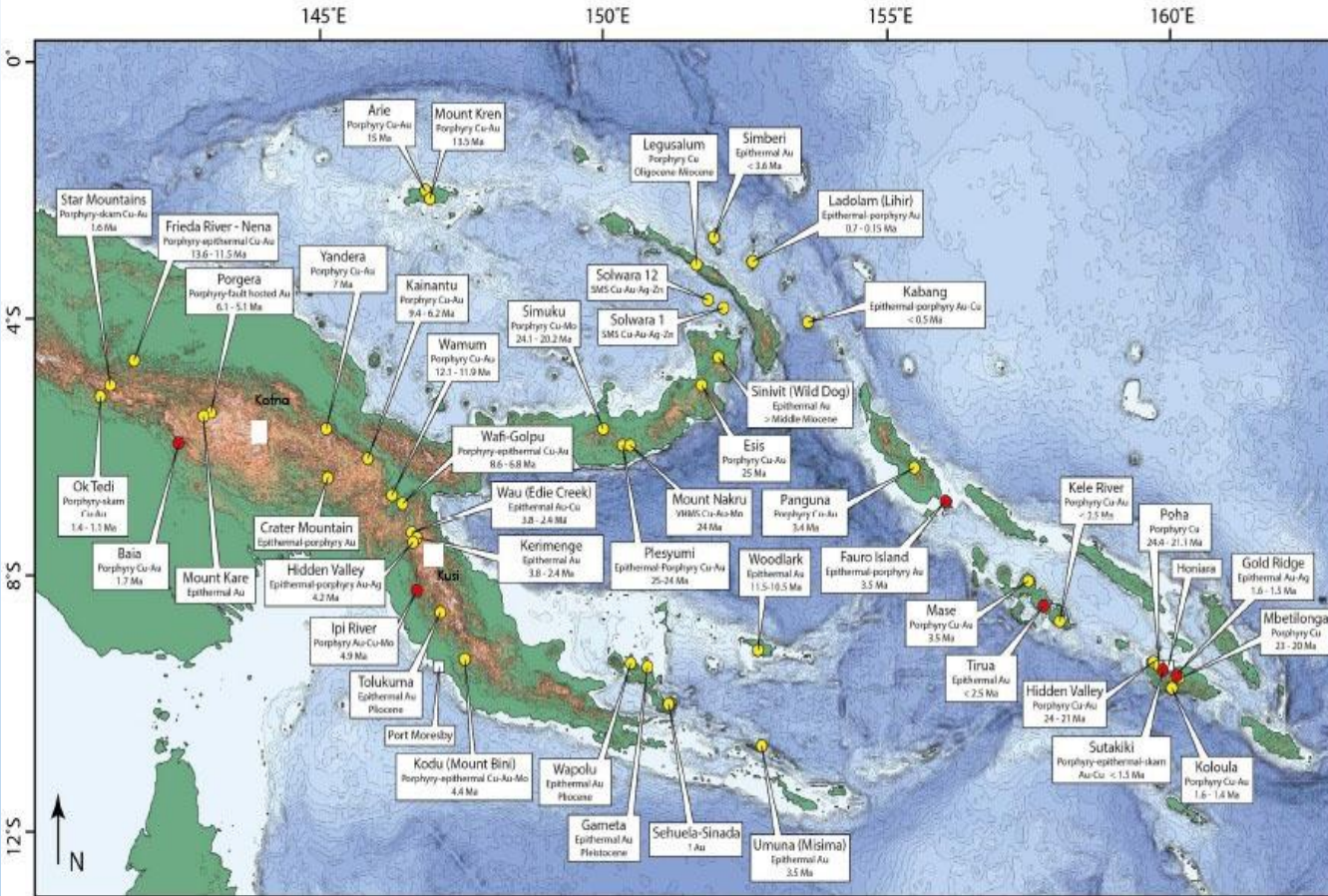


UPNG Earth Sciences Division: Concluding Remarks

- Retain only tertiary unit to produce earth scientists, geoscientists & geologists
- Culture student-centered learning environment based on 50:50 % partnership
- Improve undergraduate program (with strong field geoscience component)
- Improve postgraduate programs (with external partnerships)
- Procure advanced analytical equipment
- Procure specialist teaching/training equipment & softwares
- Increase number of academic staff with PhD qualification
- Establish Geosciences Industry Advisory Team
- Encourage secondment of academic staff with extractive industry
- Secure funds for research, student sponsorships, field trips & prizes
- Promote partnership with members of extractive industry in PNG
- Promote partnership with geosciences entities outside of PNG

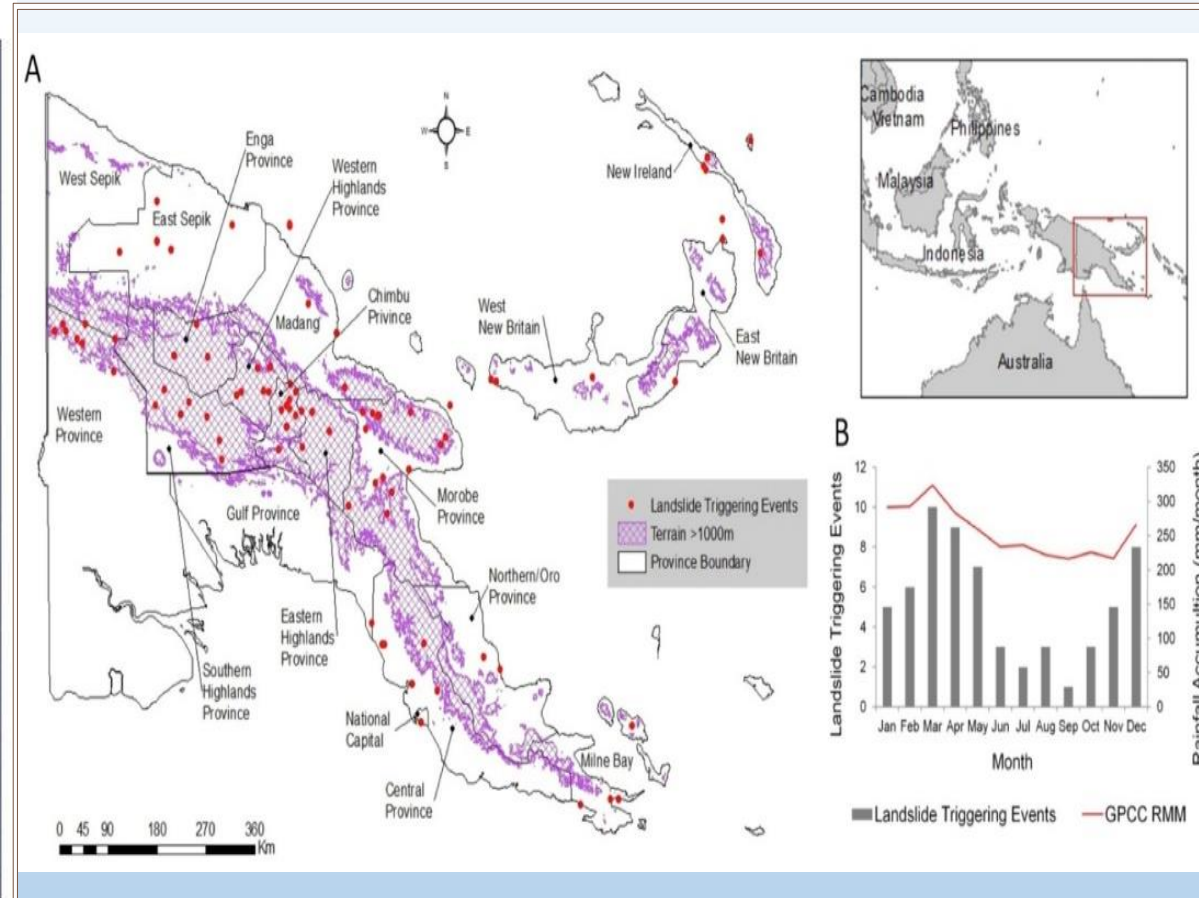


Map showing mineral deposits (with ages) in PNG & Solomon Islands



Map from Holm et al. (2019)

Map showing >1 km terrain & landslide-triggering (rainfall) events



Map from Robbins et al. (2013)

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GOING FORWARD

Sustained partnership between academia, government & industry, is mandatory for delivering quality undergraduate & postgraduate programs, research & development, publication, community engagements, & industry-ready graduates who are leaders, managers, innovators, implementers & drivers of lifelong learning, inclusive growth, & sustainable development.



THANK YOU ALL



Acknowledgements

- Landowners of the land upon which UPNG is situated
- Past, current & future staff & students of UPNG Earth Sciences Division
- Past, current & future partners & sponsors of UPNG Earth Sciences Division
- K92 Mining Inc. & K92 Mining Ltd
- PNG Chamber of Resources & Energy
- UPNG senior management & colleagues

2024

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- * **Thank you all our research partners, supporters & friends**

