Member Country Report
of
Papua New Guinea (PNG)

Submitted by

Delegation of PNG

(For Agenda Item 3)
ANNUAL MEMBER COUNTRY REPORT

Country: PAPUA NEW GUINEA  Period: 1 July 2011 – 30 June 2012

GEO-RESOURCES SECTOR

1. MINERAL PROGRAMME

1.1. Summary

The year has been a time for continuing the rebuilding of the Geological Survey of Papua New Guinea. The keys to this are the recruitment of well-qualified geologists and the continued scanning of material from the technical library and the cataloguing of rock and core holdings. The lack of suitably trained and experienced geologists in the employment pool has led to the recruitment of new graduates and the creation of training schemes in the Geological Survey to maximize staff potential. The recruitment of a manager of Geological Mapping and Mineral Exploration from Western Australia and a database geologist from BGS in the United Kingdom have assisted in the creation of a robust methodology for modern geological mapping and the creation of new databases. The delivery of radar data and air photography and notebook data from Geoscience Australia's archive has assisted in updating geological maps of PNG. Unfortunately the resignation of the manager of Geological Mapping and Mineral Exploration in early 2012 due to lack of funding for helicopters for field mapping has somewhat set back this process.

The EU funded GEOMAP archive with updates to the geological mapping was completed during the year with significant upgrades align with the previous symbols and mapping standards and was officially released to clients at the PDAC Conference in Toronto in March 2012. Training programs and staff research associated with this project and through CCOP have assisted in building the knowledge of the Geological Survey geologists. The change from MapInfo to ArcGis and training of staff in the interpretation of airborne geophysics and remote sensing data has facilitated transition to modern methods of geological mapping and future data delivery of both tenement and geoscience data over the web. This will allow updates to geoscience data to be linked to a range of World Bank and MRA funded projects in the future including a Mining Tenements Management System.

The digital capture of archival library data continued during the year but has been delayed by the lack of scanners to be delivered under World Bank funding and by lack of staff and delays in fixing existing in-house scanners. The project is now scheduled to be completed by mid-2013. Country wide regional geochemistry is on the agenda for PNG to request assistance at the CCOP forum in November 2012. Community based geoscience in line with GSD's service delivery continued during the year with water and infrastructures based projects.
1.2. Annual Review of Individual Technical Activities

This year was been a time to consolidate gains from a range of training and education gains from staff commencing higher degrees in overseas universities.

Compilation and final editing of the 1:100 000 Geological map publication series over the Central highlands from the GEOMAP project was a major mapping activity from July 2011 to June 2012 with release of all geological mapping products in March 2012 at Prospectors and Developers Association of Canada (PDAC). Completion of the GEOMAP project included delivery of a GEOMAP archive of technical reports and ancillary data such as palaeontology, petrology and isotopic age dating and all geophysics and geochemistry data and associated pdf map products and Map Info GIS coverage. This data set is available on external hard drive from MRA. To date 3 sales of this data have been completed. The release of the geophysical and geochemical data sets continues to be a major impetus for renewed exploration in PNG with significant interest being shown by major global companies in acquiring new exploration tenements in PNG. Significant follow up with more detailed surveys covering the area of the GEOMAP areas and adjacent areas has been a feature of some programs by exploration companies.

A metallogenic map of the D'Entrecasteaux islands was released in late 2011. Work on the metallogenic 1:250 000 Special maps (RAMU and WABAG) of the Central Highlands has been advanced with likely completion of the Ramu Special map in late 2012. The metallogenic mapping project forms part of ongoing development of a new annual digital product on PNG Mines and prospects called 'PNG Minerals' and these are expected to be released in late 2012. Update of the Wabag Special metallogenic map should include edge matching and merging of geological map units identified under the GEOMAP Project with previous geological mapping of the southwestern part of the area mapped previously by Geoscience Australia and the Geological Survey of PNG. This map joining will be a pilot project in line with a World Bank project to join all PNG maps at 1:250 000 and to eventually create a seamless coverage of PNG for the global One Geology Project under IUGS. Geological Survey cartographers have taken studies to MSc level externally in Australia and by correspondence in the United Kingdom. The MSc project by the senior cartographer will focus on a method to produce seamless geological map coverage of PNG and develop a stratigraphic lexicon on PNG geological units as part of the One Geology Project.

Field training orientation for staff and development of the quality of point data observations was carried out in the Wau 1:250 000 map sheet in August 2011 in order to produce a more up-to-date geological interpretation for this important mineral producing region. A technical note outlining observations was produced (TN2012/2). One staff member is commencing an honours project on the Morobe Granodiorite with field work planned for August and September 2012.

Five staff continued MSc level studies in collaboration with overseas universities at Leeds and Leicester University in the United Kingdom (UK) and at Clausthal University in Germany. Research projects have advanced in Bougainville and at the advanced Wafi-Golpu Project (Morobe Province) with submission of results expected in late 2012 and in late 2013 to early 2014.

Most rock samples from previous geological mapping in PNG have been photographed and stored ready for the construction of a new core shed. As a future initiative it is envisaged that images of these rock samples will be available as spatially located data within PNG on an updated MRA website.
The Geological Survey Division has advanced urban geology project update in the Port Moresby 1:50 000 area with a goal of updating this map and using the local area for field-based geological mapping training. A report has been prepared and parts of the map will be visited to check the boundaries between engineering rock units to complete this project and deliver a new urban geology map. Other major centres in PNG such as Lae Madang and Wewak are planned for future projects on urban geology. Staff attended the International Geological Congress in Brisbane in August 2012.

Geological mapping and mineral Exploration

The major project carried out was staff training in geological mapping in the Wau area in August 2011 culminating in the completion of a technical note bases on the mapping program. The lack of available funding in the 2012 budget for helicopter support curtailed activities and staff concentrated on completing existing projects and a new product PNG minerals and working locally on work on the urban geology of Port Moresby.

A catalogue of all air photography and note book data from 1:250 000 geological mapping in PNG by Geoscience Australia was scanned and delivered to Mineral resources Authority and is being incorporated in an updated digital catalogue of all PNG photography.

Geotechnical, geophysical and hydro projects

Geotechnical projects included work on the urban geology of PNG, the hydropower project at Purari and Hella and planning for mine inspections and assessment of landslips, foundation investigations (Kudjip Hospital) and mitigation of geohazards in local areas. A prefeasibility study was completed for the Simbu Lime Project in Simbu Province in November 2011 and is awaiting funds for carrying out the feasibility study to determine the limestone resources.

The revised digital urban geology map of Port Moresby at 1:50,000 was completed in June 2012 by the Geotechnical and Hydrogeology Branch. It is only a draft and will be edited for publication at the end of the year. This project will be extended to other major urban centres such as Lae, Madang, Goroka and Kokopo/Rabaul.

The Geotechnical and Hydrogeology Branch was involved in the supervision of geotechnical drilling and core logging at Purari Hydropower Project site between May and August 2012 as part of the feasibility study. The project is estimated to generate about 300MW power and is a one of the largest single hydropower project ever undertaken in PNG.

The Geophysical Mapping Branch completed a magnetic survey of the of the Kusi area, Garaina District. The target is a porphyry-style Cu-Au mineralization hosted in metasediments. The project lasted ten days.

Significant interest has been shown by a number of companies in exploring for coal and associated coal seam gas in PNG. There is very little comprehensive data on this resource in PNG and Geological Survey is collaborating with companies to create a comprehensive database of coal occurrences resources and analyses. Staff training in coal seam gas investigation was initiated due to the interest in this resource. Site visits to coal seam gas drilling by InterOil at Smipen and Drimgas sites were undertaken. Oil Search donated two containers full of drill cores extracted from the coal Seam Drilling program. The cores have been freighted to Port Moresby and are in temporary storage in containers at Mining Haus. Sampling of this core was undertaken as part of an assessment of coal resources of PNG.

A Branch member was involved in deep crustal research of the Eastern Papua region. The project is in partnership with Lamonte University (Colombia), USA. The project came to a conclusion in August 2011 and training in the data processing was held in May 2012.
Branch staff assisted Reykjavik Geothermal Company complete a reconnaissance survey of the Karkar Island. The team held talks with the Provincial Authorities, the District Authority, the Local Level Government and the local landowners. The team was received a warm welcome from all levels of the audience.

A groundwater survey was also conducted for Finschafen town, Morobe Province. The investigation was conducted for Water PNG, in an attempt to find a suitable groundwater aquifer to supply the town and surrounding communities. The investigation was for seven days.

A GNS-supported sampling program was completed in the Wau-Bulolo areas. Water and gas samples from hot streams and creeks were collected and sent down to the GNS laboratory, Wairakei, for further analysis. The project lasted just over two weeks.

A mineral exploration program commenced in the Rigo district Central Province. The project combined a ground magnetic survey and geological mapping in an attempt to explain the existence of a gossan in the area. The project lasted two weeks. A second phase of the project continued into March 2012, but in a different location. The second site was mined for manganese and ceased operation during World War II.

In May 2012 another ground magnetic survey was conducted in the Highlands of Papua New Guinea in an attempt to locate drill targets for a porphyry Cu-Mo deposit. Drilling has now commenced in the area.

A staff member of the group continues to participate actively in the UN sanctioned Delimitation project (or continental shelf extension project)

For the ongoing management of the digital archive library records management training and conference attendance was undertaken during the year. Staff attended the SOPAC conference in Fiji in December 2011 and contributed to a country report of minerals and petroleum.

Information and marketing (IMB)

Conferences and events attended included PDAC, Mines and money Beijing and Sydney, China Mining and PNG Australia business forum. Information and marketing provided a range of spatial information products both a standard products and customized maps for clients and produced the six monthly MRA technical Bulletins and the "Mineral Tok’ newsletter for clients. Advertisements of products and services were also handled for both online magazines and the PNG business directory. IMB also has a public relations function for the MRA and produces supplements and articles to newspapers of work carried out by the authority and organises presentations and events to attract clients to increase interaction between MRA staff and the client base.


• GEOMAP ARCHIVE 2012: All technical reports and database and maps from the Geomap Project 2006-2011.


• MOSUSU, N, 2011; Resistivity survey for ground water development at Finschhafen, Morobe, Geological Survey technical note 09/2011.


Papua New Guinea is ranked in the top 10 destinations for mineral exploration and development in Raw Materials Group survey, Sweden, 2011). The Mineral Resources Authority (MRA) continues its mandated function by regulating the mining industry in PNG and make readily available information on geology, exploration, tenements and mining to investors. There is significant interest by foreign companies for Exploration Licenses (EL). The Mining Advisory Council (MAC) meets regularly to deliberate on several applications and renewals. There has developed a backlog of applications for exploration tenements in...
PNG due to the success of the pre-competitive data released under the GEOMAP project and the world demand for mineral resources (particularly from China and India). Lower growth rates in China may temper the demand in the next 12 months.

Projects gaining international interest and moving towards production in 2012 in PNG are Xstrata’s Frieda River, Harmony Gold & Newcrest’s Wafi-Golpu, Marengo’s Yandera and Nautilus’ Solwara 1. Except for Solwara 1 which has been granted a Mining Development License, the projects have advanced to, or are at, the stage of completing Feasibility Studies. All have already commenced the consultative processes with the Governments and stakeholders of Papua New Guinea on mining these resources.

Operating mines in the country continue to sustain the National Government’s budget, with more than 60% of the revenue. Mining will continue to contribute revenue for the development of the country for the next 4-5 years. This percentage contribution currently experienced may increase with the export of LNG starting 2014/15. This period will also be the time the above mentioned mining projects will start production or are in the final stages of their constructions.

1.3. Proposed Future Activities

A new geophysical survey has been planned to fly to the West Papua border region. The proposed flying to the west of Area 1 would attempt to link the geophysical survey with the geology of West Papua. It is proposed that discussion between PNG and Indonesian CCOP representatives discuss this option at the committee meeting.

It is proposed that a database of coal resources of PNG be compiled from industry and government sources and to seek funding for the establishment of a new functional group in Geological Survey to cover this role. The lack of trained geoscientists in PNG in coal geology presents an obstacle to this proposal.

1.4. Assistance Required from CCOP/Other Member Countries in Support of Future Activities

Require assistance in enhancing and interpretation of geophysical images; in association with other available geological and geochemical datasets (see 1.1). Assistance is also required in the design of a country-wide regional geochemistry study in line with those carried out by other members of CCOP.

1.5. Assistance Offered to CCOP/Other Member Countries in Support of Future Activities

It may be possible that our experiences in processing and interpreting of geophysical datasets, especially airborne magnetic and radiometric, and their usefulness in field geological mapping, can be highlighted or presented in a workshop to other CCOP members particularly related to interpreting such data along an active plate margin.

1.6. Others Comments

There is a strong need for the procurement of appropriate tools (e.g., software and hardware) to enable integrated interpretation of geophysical datasets and to develop country-wide datasets. Current configurations do not allow for smooth processing of the large datasets generated during the MSSP program in PNG. New configurations are being planned with updated hardware and software subject to funding.
2. ENERGY PROGRAMME

2.1. Summary

A reconnaissance survey of the Wau-Bulolo area for geothermal development was conducted by the Geological Survey Division. The team from the Geophysics and Geological Mapping conducted water and gas sampling and scouted new areas of geothermal manifestation. The samples were later sent down to the GNS Sciences laboratory at Wairekei for analysis.

GNS Science assisted in the program by conducting training for the Geological Survey team and providing advice on sample preparation using preservatives. Pre-field training was conducted at Wairakei and in Port Moresby.

GSD staff also accompanied Reykjavik Geothermal Company (RGC) to Karkar Island, which is seen as a potential site for future geothermal development.

A staff member of the Geological Survey is currently on a 6-month geothermal training assignment in Iceland, following a successful application for scholarships with the Icelandic Government. The staff member returns end of October, 2012.

2.2. Annual Review of Individual Technical Activities

Development in the geothermal sector appears to be hampered by the non-existence of a geothermal policy, despite the huge interest in developing the resource by major international companies.

Reykjavik Geothermal Company continues to be interested in the geothermal resource if the country. The company was granted exploration license over Karkar Island in late 2011. Further work could not be carried out due to restrictions placed by the Attorney General. The company, however, with the support from the Mineral Resources Authority, is highly regarded by the landowners and the Madang Provincial Government, and is keen to start exploratory work once given the approval. RGC is targeting a 100 MW geothermal plant to meet the electricity demand of the town and mining operations.

The Mineral Resources Authority carried out a sampling program in the Wau-Bulolo geothermal areas. The sampling program was requested by Newcrest Mining Limited through the Geological Nuclear Sciences (GNS) of New Zealand. GNS provided training for members of the investigation team and also helped prepare sampling equipment prior to conducting the sampling program.

Work on a World Bank-supported geothermal study in the country is nearing commencement after TOR and Project proposals have been completed and a successful tenderer was accepted.
As part of our on-going commitment to train staff in geothermal exploration, a staff member of the Geological Survey is currently on a 6-month geothermal training course at the United Nations University – Geothermal Training Institute, in Iceland. This follows a successful application for scholarship with the Icelandic Government. The staff member returns end of October, 2012.

2.3. Proposed Future Activities

GSD will carry out sampling programs in selected geothermal sites with the assistance of GNS, in a study to be funded by the World Bank. The project is expected to commence in November 2012 and will last about 18 months.

2.4. Assistance Required from CCOP in Support of Future Activities

CCOP may assist in designing an appropriate geothermal database for the country and providing technical expertise in development of a case study.

2.5. Assistance Offered to CCOP/Other Member Countries in Support of Future Activities

As a collaborative project, our officers can share the experiences and exchange ideas in conducting geothermal water sampling and direct current resistivity methods around geothermal areas.

2.6. Other Comments

Our officers need more exposure to geophysical field exploration techniques in geothermal and mineralized terrains, and training in mapping of different mineral deposit styles in mineralized areas.

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3. GROUNDWATER PROGRAMME

3.1. Summary

Community water supplies were investigated through groundwater studies in Kimbe Town. A project for drilling on Daru Island was undertaken where Geological Survey was contracted by PNG Sustainable Development Programme to oversee their groundwater and geotechnical drilling programs in Daru town and possibly additional areas within the Western Province.

3.2. Annual Review of Individual Technical Activities

PNG Water Board was assisted with a TOR for Kimbe drilling. Progress is currently awaiting drillers to arrive at Kimbe for a ground water project and a project for rehabilitation of the Popondetta groundwater borehole. The drilling program in Daru Township is an ongoing activity from June 2011. Other water projects were at Kudjip, Kerema and
Kundiawa and developing a plan with PNG Waterboard for the Wau - Bulolo ground water and study of the Vanimo to Angoram project. Finchhafen groundwater borehole pump testing is scheduled for late 2012.

3.3. Proposed Future Activities

Seek out contracts for future community based groundwater projects and assist local and provincial government requests for developing stable and clean water supplies. The ongoing purchase of down hole borehole logging tools include a camera, SP, resistivity, gamma, temperature, fluid resistivity, caliper and associated accessories is planned for late 2012.

3.4. Assistance Required from CCOP in Support of Future Activities

CCOP may assist in designing an appropriate groundwater database for the country based on modern ideas of what such a database should contain. Currently there is no operating database in PNG, but a database has been supplied by BGS and is under review.

3.5. Assistance Offered to CCOP/Other Member Countries in Support of Future Activities

Little can be done from PNG as at the moment there are only 2 staff members.

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4. COASTAL ZONE PROGRAMME

In 1999 a CCOP “COASTPLAN” programme report, titled “Geology and Natural Hazards of Lae city and surroundings, Papua New Guinea” was produced. It was a joint project undertaken by CCOP TS, The Ministry of Foreign Affairs of the Netherlands Government and the Department of Mineral Resources of Papua New Guinea. Since then no further coastal zone studies have been undertaken.

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5. GEO-HAZARDS PROGRAMME

5.1. Summary

The Department of Mineral Policy and Geohazards Management (DMPGM) is new and emanated from the former Department of Mining and is responsible for (1) formulating policies related to mining/exploration and (2) monitoring of geohazard activities in PNG and the region. The latter responsibility of DMPGM will be discussed further here. Within DMPGM a Division called Geohazards Management was created and its role is to monitor and assess geological hazards, like earthquakes, tsunamis, volcanoes, landslides and mass erosion events, in PNG and the region. The Division provides advice on the mitigation measures to relevant authorities and communities and where possible it provides early warnings of the effects of these hazards. Through applied research the Division aims to improve the capabilities to monitor, assess and where possible predict geological hazards in PNG. The Division comprises three Branches; the Rabaul Volcanological Observatory, Port Moresby Geophysical Observatory and the Engineering Geology Branch and they are responsible for the monitoring of volcanoes, earthquakes/tsunamis and landslides/mass erosion in PNG respectively.

5.2. Volcanic Hazards

5.2.1. Annual Review of Individual Technical Activities

Routine monitoring of monitored volcanoes is ongoing. The Australian Government through its Aid Agency (AusAID) extended the Twinning Programme at the Rabaul Volcanological Observatory when the first phase concluded in 2010. AusAID also funded the Strengthening Natural Hazards Risk Assessment Capacity in PNG where the East New Britain Province was selected as the pilot province. The project started in late 2010 and is ongoing.

Arrangements with CTBTO to establish an additional auxiliary seismic station AS76 and an infrasound IS40 at Kerevat PNG were almost concluded.

Volcanic Activities

The monitored volcanoes of Papua New Guinea were generally quiet in 2010, with the exception of the Tavurvur and Ulawun volcanoes.

Manam volcano remained generally quiet throughout 2010. Ulawun changed its quiet status of activity with the commencement and continuation of high frequency volcan-tectonic earthquakes from about July 2010 onwards and Manam showed some signs of renewed activity from occasional night glows from the two summit craters during the last few months of the year.

Bagana, considered as the most active volcano in Papua New Guinea due to its sub-continuous effusive activity, continued to erupt in 2010 and continued in 2011. The effusive emissions of lava from the summit crater rolled down the western flanks of the volcano but the volume of lava was insignificant and didn’t cause any alarm.

Tavurvur, one of the two volcanoes that erupted at Rabaul in September 1994, remained quiet in 2011 with low level of intermittent emission of ash.

Monitoring Activities

RVO persevered to maintain its monitoring equipment at Rabaul and the selected high-risk volcanoes including Ulawun, Manam, Lamington and Pago.
The seismic monitoring network at Rabaul was maintained at a reasonable level. A couple of stations which had been off were restored in 2011. The tide gauge network consisting of three stations was partially restored after a long period of inactivity. An upgrade of the real-time Global Positioning System (GPS) of four stations for deformation measurements began during the last quarter of the 2010. By the end of the year three of the stations were restored but two continued to have problems. The work continued in 2011.

The monitoring stations at Ulawun, Pago, Garbuna, Manam and Lamington, consisting of single seismic stations operated below satisfactory levels, mainly due to technical problems associated with power problems, lack of parts etc. At some places like Ulawun, local recordings are done on site but data transmission to RVO could not occur due to faults in some of the system components. Despite these shortfalls, daily reporting of volcanic information by the volcano observers, which also included Bagana, using HF voice radios are maintained at a satisfactory level. Two stations in West New Britain have ceased data transmission and work has been undertaken to restore operation.

Special Projects/Programs

Discussions and the compilation of a document commenced on a proposed new 4-year AusAID-funded Geoscience Australia-RVO Twinning Program following the cessation of the similar existing program in mid-2009.

RVO participated in a series of consultative review meetings on AusAID’s ‘Framework for Australian Assistance to Disaster Management in Papua New Guinea 2003-2008’ to determine its strengths, weaknesses, impacts and lessons learned, in anticipation for drawing up a new program, the Disaster Risk Management (DRM) Program.

The Strengthening Natural Hazards Risk Assessment Capacity Program workshop was held in July 2011, in Kokopo East New Britain Province and coincided with the official launching of The Rabaul Volcano report by the Deputy Secretary of DMPGM.

Community/Public Education

Community and public education on volcanic and other geological hazards like earthquakes, tsunamis, landslides, etc., continued to feature strongly in RVO’s 2010 activities. These activities were focused in the Rabaul area with visitors to RVO from a wide range of backgrounds including educational institutions. Posters and leaflets were given to the visitors. Similar activities in communities of the other high-risk volcanoes were restricted by funding.

5.2.2. Proposed Future Activities

Future activities for RVO will be guided by the mandatory responsibilities of the observatory and the overall 5-year strategic plan for the Department of Mineral Policy and Geohazards Management.

Some specific, planned activities include the following:

- Continue to restore and upgrade monitoring equipment at Rabaul and the other high-risk volcanoes.
- Upgrade data transmission mechanisms from the remote high-risk volcanoes to RVO at Rabaul. The current system uses modem-configured HF radios. Upgrade of this system is year-marked for the next two years; however, there are plans to phase this out with VSAT systems. The outcome of this will depend on funding.
• Improve power supply systems for volcano monitoring at selected high-risk volcanoes including Ulawun and Lamington with the installation of solar farms.

• Relocation of the Volcano Observatory to a new location and fitted with a state of the art volcano monitoring system.

5.2.3. Assistance Required from CCOP in Support of Future Activities

RVO receives its core operational funding from its mother department, the Department of Mineral Policy and Geohazards Management, however, it has also benefited immensely though aid funding from the Australian Government through its international aid agency, AusAID, and from UNDP/ SODAC.

With donor funding, RVO was able to achieve the following:

• Improve the monitoring systems at Rabaul and selected high-risk volcanoes,

• Upgrade the GPS network

• Upgrade the modem-configured HF radios for transmission of volcanic data from the remote high-risk volcanoes to RVO.

• Increase in computer hardware

However, there is still more to be done and RVO certainly would welcome any assistance with funding and technical experts of the proposed activities outlined in (5.2.2) from CCOP, Co-operating Agencies/Countries and Member Countries.

5.2.4. Assistance Offered to CCOP in Support of Future Activities

No assistance was provided to CCOP during the reporting period.

5.2.5. Other Comments

The main issues that affect the work of RVO are lack of timely and sustained funding and properly skilled personnel for some of its key sections. For example, restoration of some of the monitoring equipment at other high-risk volcanoes dragged on due to lack of qualified technical staff in the Electronics Section.

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5.3. Earthquake/Tsunami Hazards

5.3.1. Annual review of Individual Technical Activities

A magnitude 7 earthquake Island occurred in the neighboring Indonesian Province of Papua, Biak, on January 3rd 2008. Within the PNG region 16 earthquakes of magnitudes 6 and 221 of magnitude 5 occurred in the period January 2008 to 09 August 2009. A total of 1595 earthquakes of magnitude 3.4 occurred during the period. From these earthquakes no tsunamis were generated.
Apart from the routine monitoring of seismic activity, work on the EU funded (EDF9) replacement of the seismic network is continuing with the formulation of tender documents, spearheaded by Geoscience Australia. The project commenced in January 2008 with a deadline of four years to December 2011.

5.3.2. Proposed Future Activities

Seek counterpart funding from PNG Government to compliment the proposed Seismic Network referred to above and to rehabilitate the PMGO Office and Seismic Station set up in Port Moresby. Submission for these requests is in train at the time of reporting.

5.3.3. Assistance Required from CCOP of Future Activities

Funding is and will be a major constraint, therefore additional funding is required for operational expenses in training of staff with the relevant software and hardware, applications and tools, and as well as the maintenance of network components and facilities.

5.3.4. Assistance Offered to CCOP in Support of Future Activities

Annual membership fees/contributions.

Other Comments

PNG has been a long-time member of CCOP and would encourage continuing collaboration in projects that would be of benefit to PNG and the region. To meet the departmental vision 2009-2015, a state-of-the-art communication system is to be deployed both for data transmission to PMGO from seismic stations and for information dissemination. The system has to be compatible with the seismic network hardware and software to be procured and deployed nation-wide in the next two years. For this, initial costs are to be sought from potential donors. There will be counterpart funding sourced as well.

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5.4. Landslide Hazards

5.4.1. Annual review of Individual Technical Activities

No activities were completed and no new ones were started during the reporting period. The annual review covers only the ongoing activities undertaken for the period 2010-2011 by the Engineering Geology Branch.

The Engineering Geology Branch commenced operation in the beginning of 2009 and strategic mapping and assessment of landslide affected areas has become a priority task of the branch as, early in the year, a big portion of the main Highlands Highway linking the coast to the inland areas failed due to unusually high rainfall. The landslide was mapped and assessed and a report was produced for relevant government agencies to take corrective measures. Since then normalcy has been restored on the highway. Library search on all previously reported landslides is ongoing.
Presently there is no database or a landslide map covering all of PNG on any scale therefore the branch aims to create a landslide database and produce a landslide hazard map at the smaller scale (1:250,000). A Terms of Reference has been developed for a technical assistance project through the UNDP/SOPAC to the Geohazards Management Division. It is envisaged that technical capacity within the branch would be boosted with hands-on field exposure in pilot areas to be mapped on the most vulnerable sections of the Highlands Highway. Ensuring sustainability of this one-off assistance to our major activity and professional help will be important to achieve the Department’s vision.

The World Bank has also come on board to assist with re-equipping the engineering geology soils laboratory. Funding for this exercise was initially promised to be made available in September 2011 but due to reasons known only to the funding agency it will be made available in March 2012, under the World Bank Transport Project.

Risk assessment of landslides will be done after the landslide hazard map is produced. It will also be limited to areas where actual investment or infrastructural development is taking place.

5.4.2. Proposed Future Activities

Besides carrying out landslides investigations the branch is also embarking on the following activities:

- Construct a user friendly data base for landslides. Currently there is none.
- Carryout landslides mapping by using remote sensing methods.
- Purchase new equipment for the laboratory for rock and soil tests.
- Develop landslide hazard maps at 1:250 000 scale.
- Carry out studies on the Engineering Geology of towns in PNG.

5.4.3. Assistance Required from CCOP of Future Activities

Assistance from CCOP TS will be required in the areas of;

1. Creation of a Landslide Data Base and provision of technical expertise
2. Provide training in Remote Sensing and to acquire satellite imagery interpretation software and hardware to aid in landslide mapping.

Other Comments

Any assistance in the areas mentioned above will be highly appreciated.

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6. ENVIRONMENTAL GEOLOGY PROGRAMME

6.1. Summary

The only activity in this section was a radiometric survey of part of Sudest Island in the far southeast of PNG.

6.2. Annual Review of Individual Technical Activities

A study of possible radioactive sources on Sudest Island, Milne Bay Province proved no significant sources of high radioactivity in the areas indicated by locals in the area (TN2/2011).

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GEO-INFORMATION SECTOR

7. GEO-DATA AND INFORMATION MANAGEMENT PROGRAMME

7.1. Summary

The Mineral Resources Authority (MRA) through its Geological Survey Division is the manager of all mineral resources and geological information in Papua New Guinea. It is the custodian of all exploration, scientific, technical and other earth sciences publications on Papua New Guinea.

7.2. Annual Review of Individual Technical Activities

GMRIS (Geological and Mineral Resource Information Systems) installed under the last EU SYSMIN project is not sustainable. The system collapsed due to lack of technical training to managers of the system.

7.3. Proposed Future Activities

A significant project being developed under the current World Bank Technical Assistance2 (WBTA2) is the digitization of geochemistry point and drill holes from open exploration reports in the Geological Survey archives. The project will also include the conversions of hard copy reports into electronic formats. Consultations are underway with an Australian company, Terra Search, on this project.

A proposed proposal for training is in place for resource modeling using existing geological and mineral resource data from the Geological Survey. Initial discussions have been made with potential trainers from Australia.
7.4. Assistance Required from CCOP in Support of Future Activities

Assistance to revamp the defunct GMRIS is appreciated and link with an online tenure management system under investigation by MRA. This would include staff training and reassessment of the technical phase of the system. Recent quotes for the revamp of GMRIS are very expensive and need to be reviewed relative to the future direction of MRA.

- Capacity building and up-skilling staff in remote sensing.
- Acquisition of high resolution satellite images covering the entire country or around the mining lease and impacted areas to monitor ongoing mining operations.

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