Extractive Industries and the Pacific Region: perspectives, drivers, challenges and opportunities

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The global population is currently around 7 billion and will shortly reach 10 billion. The number of people in the world who are classified as ‘middle class’ or ‘consumer class’ is higher than ever before in earth’s history. There are over ten rapidly growing and developing large, populous countries including China, India, Brazil, South Korea, South Africa, Turkey, Russia, Poland, and Indonesia. Demand for minerals, metals and construction materials, has never been higher.

Global competition for finite resources is intense. Not so long ago the ‘Western World’ had things the way they wanted. Now other world players are looking to access resources around the world. China has been particularly successful in gaining access to mineral and hydrocarbon deposits both in-country and throughout Africa, Central Asia and South America. But China is only one of many countries seeking to secure resources for the future.

The range of mineral and energy resources being sought is becoming increasingly varied. Precious metals such as gold, platinum and silver will always have a market (gold for example has been traded ever since humans discovered the metal). Metals closely linked to infrastructure and economic development such as copper (for electrical conductivity) and iron (for construction) exhibit cycles in demand but, overall, the graph of production of copper (for example) over time since 1850 has risen exponentially. ‘Green’ and ‘technology’ metals such as the rare earth elements, niobium, tantalum, palladium etc., are needed in increasing quantities for new innovative products such as smart phones (that can utilise over 60 mineral commodities), flat TV and computer screens, catalytic converters, hybrid automobile engines, high speed railways, wind turbines, electro-magnets, etc.

Land based minerals will form the mainstay of deposits for the foreseeable future. However, if we look at the size and grade of mines and deposits over time we see that the both the size and grade of deposits are decreasing. In other words, it is becoming increasingly difficult and expensive (as well as competitive between nations) to discover new large deposits. On the other hand, new extractive technologies allow for the mining of lower grade deposits to become viable and economic. Recycling of metals, metal substitution, and the development of new materials all assist in prolonging the lifetimes of mines, deposits and commodities.

Minerals located on the ocean floor at depths of between around 2 and 6 km below sea level are now within the reach of mining companies thanks to advances in submarine technology and science. So called Deep Sea minerals (DSM) offer perhaps a ‘game-changing’ opportunity for many Pacific countries to generate wealth. Let us not forget that
many of today’s most developed economies began their modern economic history through the utilisation of their mineral resources (Australia, Canada, USA, Chile, Botswana, UK, etc.).

The Pacific region will increasingly become a focus of global interest as competition for commodities drives countries to seek new frontiers for exploration. The larger Melanesian islands in particular have a high on-land exploration potential: the Pacific region is highly prospective for copper and gold for example, and, in global terms, is classified as an ‘under-explored region’ (when compared to many areas of Africa and South America for example). Papua New Guinea has been mining since the 1960s and Solomon Islands (with one active mine currently) remains highly prospective. The various types of deep sea mineral (manganese nodules, manganese crusts and seafloor massive sulphides (SMS)) are present in one form or another within almost all Pacific Island countries ocean boundaries. Even those who are unlucky enough not to contain DSM can access DSM-generated wealth potential through sponsoring companies to explore areas beyond their national boundaries.

The challenge for the Pacific is to prepare for the development of its mineral resources (if this is what it chooses to do) through strengthening its Geological Survey Organisation type institutions and entities, developing all aspects of sustainable development management and governance of mineral development (promotion & advertising, licensing, cadastral system development, law, fiscal regimes, economic modelling etc.,) and developing a vision and mechanisms that ensure mineral development equals improved quality of life for all Pacific Islanders.