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India-South Pacific Economic Partnership (2023) Towards Sustainability with Special Reference to the Papua New Guinea

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Abstract

Sustainable and inclusive economic development is a vast and complex subject. Thus, there is no common consensus in defining sustainability and inclusiveness among the economists. But it can be defined as "it is a practice or method of planning and implementation of economic activities for economic progress / growth and development with maintaining a stable and long-term overall economic, social, cultural and environmental progress of not only human being and society as a whole, but along-with protecting the ecosystems and maintain the quality of the environment for future generations." The present economic growth is based on the costs of the future generations. This paper identifies the issues, problems, and challenges of environmental sustainability and sustainable economic development. A profit-oriented capitalist mode of production exploits the natural resources which are more profitable in short-term at full potential. Sustainable economic development requires the appropriate policies to achieve the UN's Millennium Goals. This paper's objective provides a thorough overview on the fundamental ideas, theories, and practice of sustainable and inclusive economic development, from the theoretical presumptions of their guiding principles to methods for overcoming barriers to economic development in the era of the COVID-19 and global military conflicts, as well as the effects these have on the world's trade, investment, and development. The paper emphasizes the status of the energy utility, energy sources, ecological impacts, Government role, and techniques to reduce pollution based on recent research papers (published in journals, newspapers, magazines, PhD thesis, news agencies, YouTube, and webinars. Finally, the study set a recommendation, "it must be sustainable through protecting the available natural resources, and therefore, it must be a balance between present and future generations."

Key words; Sustainability, inclusiveness, green technology, green energy, green trade etc.

1. Introduction

Sustainable and inclusive economic development is a vast and complex subject. Under the process of industrialization and modernization, economic players exploit the natural resources (without restrictions or barriers) for maximizing profits on the costs of others (future generations), and they damage our environment by creating air and water pollutions in one hand, and they launch a global campaign to maintain the environment under guidance of the United Nations on the other hand. The world capitalist economies are integrated since the era of globalization, whereas privately-owned "profit-oriented" market-based the powerful western multinational corporations (MNCs) lead the global economy.

However, it's a prime responsibility of the MNCs, who share 90 per cent and above to global pollution, to stop exploitation of the natural resources immediately, and provide finance to the victims, and transfer "green technology" to the needy countries.

2. Objective Socio-economic Conditions in Papua New Guinea

In the Asia-Pacific / Indo-Pacific / Asia Pacific Ocean, the Papua New Guinea is 3rd largest Island country in South Pacific Region. The PNG has been maintaining the environment, bio-diversities, and the rural people's traditional cultural habits and life styles, which is closed more to the nature. Thus, the traditional rural based indigenous people of the PNG, the majority three-fourth (3/4) population are very poor, illiterate, and unemployed. Around 85 per cent people do not access electricity. Education and Health Systems are almost negligible in rural areas across the PNG. Despite increased number of urban or semi-urban based industries in Lae, Madam, Goroka, Port Moresby and other capital cities of the provinces, there are no big or largest domestic industrial bourgeoisie / houses or multinational corporations, and we identified that mostly their nature and characters are "comprador petty bourgeoisie / traders." The PNG's agriculture, (domestic / national) industries (both manufacturing and service) are still marginalized.

From top to bottom level 'metropolitan urban-centered capitalist path of industrialization process' is even an unfinished task in the PNG due to lack of finance capital, lack of technical know-how, lack of skilled labour force, lack of marketing networks, lack of general storage or cold storage, lack of infrastructures at all levels, lack of people-to-people connectivity and inter-linkages at regional, national and international levels. The foreign multinational companies (MNCs) have been operating in the PNG, and exploit natural resources such as Gold, Silver, Copper, Gas and Oil.

The leading mining, oil, gas, gold, silver, copper, coal, iron and steel, and even cement industries are not able to absorb thousands of unemployed youths. These economic sectors even do not efficiently perform due to lack of industrial competitiveness at global level. Generally, industries of the mining, oil and gas contribute around 70-80 per cent to PNG's export to receive foreign currency to correct balance of payments, and around 20-30 per cent outputs domestically consumes.

In PNG, mainly 13 leading foreign MNCs operate in mining, gas and oils sectors, who control 70-80 per cent exports and share 25 per cent to PNG's GDP. These MNCs are followings:

OK Tedi (Copper & Gold)	Western Province
Porgera (Gold and Silver)	Enga Province
Lihir (Gold and Silver)	New Ireland Province
Ramu (Nickel and Copper)	Madang Province
Hidden Valley (Gold and Silver)	Morobe Province
Tolukuma (Gold)	Central Province
Simberi (Gold)	New Ireland
Sinivit (Gold)	East New Britain Province

Source: Interview based

3. Sustainability Issues, Challenges and Opportunities

Papua New Guinea (PNG) is a richly endowed basin in natural resources, including oil, gas, gold, silver, copper, and other mineral resources. Despite these abundant natural resources, the PNG has a backward industrial base and

infrastructures who mainly dependent on exports of the mining and forestry, and not dependent on manufacturing and agricultural products. Deforestation and barrierless exploitation by the foreign multinational corporations of the natural minerals resources and mining sector, this unsustainable practice of the MNCs has created instability, uncertainty, and dependency in PNG. The two largest mining companies of Ok Tedi Gold Mine and Pogera Gold Mine are greatly damaging environment. These mining companies are polluting water and destructing the ecosystems. Foreign multinational companies who produce soft drink like Coco Cola, Sprite etc., in the PNG are sucking drinking water, damage health of the people, and create pollution also. In agriculture sector, Australian Turukai Rice Ltd dominates in PNG' market.

It means, there are three types of losses. *One,* foreign multinational corporations (MNCs) *exploit* PNG's natural resources mainly for export purposes. *Second,* MNCs earn *profits* and, these *profits* are not re-invested in PNG to promote domestic industrialization, and are sending *profits* to their native countries. *Third,* these foreign multinational corporations (MNCs) are unable to create a new job opportunity for thousands of unemployed youths in PNG. But the foreign multinational corporations (MNCs) are damaging environment and exploit natural resources of PNG.

Thus, the productive forces must be created through advancements in agriculture and its allied sector and manufacturing industry to achieve the goals of self-reliance and sustainability by transferring an appropriate green technology with financial supports to the people who directly or indirectly engaged with agricultural and its allied sector, forestry, manufacturing, and service sectors to establish green infrastructures, and green trade are significantly required in PNG towards sustainability.

Around 87 per cent people who live in rural areas and they occupied 97 per cent of land (under the community based customary tenured system), who are directly or indirectly engaged with subsistence level agricultural practices for survival in the Papua New Guinea. The existing cultural institutions in PNG. This objective condition or reality provides an opportunity to establish 'Multi-sectoral Social Production System' (Social Entrepreneurship) from bottom to top level. Overcoming poverty requires a context specific multi-pronged strategy that includes: a basic needs approach, a human rights entitlement approach, a natural resource management approach and a focus on inclusive economic growth etc. This multi-sectoral approach with focus on inclusive economic growth to sustainability would certainly help eradicate poverty.

4. Potential of Sustainable Rural Industrialization in PNG

The PNG Forest Products Limited (PNGFP) is a leading industry of Engineered Wood Products, which has been operating since 1954. This PNGFP operates in forestry business along-with other Timber Industry, which are manufacturing all over PNG, and adding *"additional value,"* and final products like round logs, sawn timber, plywoods, and furniture, and exports to other countries in Malaysia, Australia, Philippines, Japan, China, and Singapore etc. But foreign forest companies like Malaysian Rimbunan Hijau Group is a global wood processing corporation, who operates and dominates in PNG. Although, the PNG's Forest Products companies have to follow 'sustainable forest management practices' to avoid negative effects on environment, and should serve to the PNG's communities.

Sustainability essentially depends on the people-centered development model through Networking of the Big-Medium-Small Size Villages (NBMS). Rural areas must be channelized by tremendously establishing 'production-units' and networking of production-distribution-consumption patterns from the bottom to the top (for example, local to regional

to global) levels. It must be based on "people's science and techniques", by the area-based organizations of the existing occupational rural people as 'community-based' production units.

It is possible to create district-wide, viable large-scale network of production system of the rural poor based on local resources, capabilities and markets through appropriate organizational and S&T efforts. This can be done if the rural poor are organized to strengthen their inter-links and advance the local economy by encouraging local value-addition through linking of primary and secondary production and through the technological up-gradation of existing occupations. There should avoid mutual competition among small producers and for superior access to resources and markets, and to technology transfer to organize landless labour, artisans and poor peasants for area based multi-sectoral large-scale production systems.

Under competitive conditions the self-employed small producers have not only to come together for access to resources, but also have to emerge as a multi-sectoral collective of producers, co-operating in production. Since economies of scale are required to overcome adverse competition, [the] rural poor will have to be consciously networked and technologically advanced in a mutually complementing way. Rural poor will have to pool the resources and capabilities for raising the scale and scope of their collective production organization.

This change in the scale and scope can alone allow the participating members to lower the barriers facing them in the creation and adoption of more sophisticated and improved technologies which can make their production more competitive than before in the local markets. The local economy exists as a taluka wide, multi-sectoral network.

In the local economy the range of occupations engaging the rural poor is wide and varied. It includes agriculture labour, small/ marginal- cultivators, hides and skins occupations ranging over flaying, cloth weaving, dyeing and printing; fibre collection/ extraction, basket and mat weaving; animal husbandry, poultry, fishing etc. and allied secondary processing like food processing; carpentry, and other engineering-artisans, or handicraft occupations etc. The networks of group enterprises comprising rural poor can be built around the principle of worker co-operatives i.e. worker ownership, collective appropriation of surplus and full participation in decision making.

5. India-PNG Bi-lateral Relationship

India has invested US$100 million in Papua New Guinea in infrastructural developmental related projects (around US$60 million for Bayer-Madang Road project; US$40 million for Hoskins-Kimbe Road project). On 21st-23rd May 2023, Indian Prime Minister Narendra Modi visited PNG and participated in the 3rd Forum for India-Pacific Islands Cooperation (FIPIC). The Summit was attended by 14 Pacific Island Countries (PICs) also. At FIPIC-3 Summit, PM Modi declared a 12-step action plan to strengthen India's partnership with Pacific Island Countries; the plan includes initiatives such as setting up Jaipur foot camps, establishing a specialized cardiology hospital in Fiji, providing dialysis units and sea ambulances, cooperation in information technology, biometric-ID, UPI, digital transformation, e-governance, solar projects, and offering scholarships for the region. PNG has been working to develop its SMEs sector and to set up Regional Youth Incubation Centres on Indian model as part of Medium-Term Development Plan-3, in this direction, for MSMEs development India's National Small Industries Corp (NSIC)-Entrepreneurship Development Institute of India (EDII)-Khadi & Village Industries Corporation (KVIC), Indian Council for Agricultural Research (ICAR), and Council of Scientific and Industrial Research (CSIR) can effectively support for training and project developing. In the fields of green energy including Solar project, biofuels and biodiesel, ethanol, hydrogen, lithium

battery production, and natural gas & petroleum oil, South Pacific Island include PNG has the potential to move towards cooperation with India.

India has been providing humanitarian aid and disaster relief to PNG, for example; a consignment of 7.2 million dosages of anti-retro viral drugs received from India costing US$3 million. India provided computers and peripherals worth around US$ 760,000 out of cumulative grant-in-aid under India's Regional Assistance to Pacific Island Countries. A direct cheque for Grant-in-Aid for providing of IT equipment to National Cultural Commission of PNG for US $ 50,000 (K 178,707) was handed over to PNG Minister of Culture Isi Leonard on Nov 3, 2022. Ministry has recently approved a Grant in Aid proposal to provide support to improve ICT infrastructure at University of Technology (UNITEC), Lae for K 5,42,500 (US$ 153,893), according to Indian High Commission to PNG. India extended US$1 million grant to PNG towards earthquake relief in areas affected by earthquake that struck PNG in Feb 2018. GOI also extended a financial assistance of US$ 1 million to PNG Govt for relief and restoration work in areas affected by Ulawun volcano which erupted in PNG in June 2019. 132,000 doses of AstraZeneca Vaccine were donated to PNG USD 450,000 approx weighing 4.2 tons produced by M/s. Mysore Paints and Varnish Ltd flown by air from Karnataka to Port Moresby which arrived in PNG on 21st May, 2022 which were used for PNG Elections 2022.

Table-1. Bilateral trade figures between India & PNG for the last few years are as follows:

Year	Export from India to PNG (USD Million)	Import into India from PNG (USD Million	Total Bilateral Trade in USD Million
2018-19	14.72	88.97	138.69
2019-20	56.02	55.70	111.72
2020-21	56.17	125.85	182.02
2021-22	69.95	357.58	427.53
2022-23	85.84	643.36	729.20

Source: Department of Commerce, Government of India (2023)

Main items of export from India to PNG include: textiles, merchandise, machinery & equipment, food items, pharma & surgical items, Rubber, etc. Main items of import into India from PNG are Nickel, Copper, Pearls, copper ores, wood & its articles, cocoa.

6. China-PNG Cooperation in Green Projects

The climate crisis has become more urgent than ever. World should ban together to take action to mitigate carbon emissions drastically. China has made great efforts to promote green and low carbon development in 43 developing nations who directly participated in China's Belt Road Initiative (BRI), including environmental protection, laws,

regulations, standards environmental policies and management measures, technical exchanges and industry cooperation and the building of a clean and beautiful world with its sweeping, historic and transformative changes in environmental protection efforts. China has managed to fuel an average annual economic growth of 6 percent, with an average annual energy consumption growth of 3 percent. The country's carbon dioxide emissions per unit of GDP dropped by around 35 percent, which is equivalent to cutting about 3.7 billion metric tons of carbon dioxide emission. In 2022, the installed capacity for renewable energy in China reached 1.2 billion kilowatts, overtaking that for coal-fired power for the first time in a historic catch-up, China is focusing on cooperation over green energy and green finance to integrate into the global green industry chain and value chain, and to beef up their capabilities in promoting green investment and financing, sharing its philosophy on green development and solutions in synergizing pollution control and the reduction of carbon dioxide emissions. Through 'Belt Road Initiative (BRI) China has strengthened people to people connectivity and formed greater integration between more than 140 countries with over USD200 billion investments to develop and scale clean energy, and invest in carbon sequestration solutions (Liqiang, 2023).

China has invested US$ 470000 million in the Papua New Guinea for road construction and Hydro Plant. However, the QUAD members: the USA, Australia, Japan, and India are also involved in the South Pacific region, and they are still infuriating to counter the Chinese influence. It can be seen in the form of recently signed *defense deal* between the USA and the PNG.

7. **Conclusion**

The government of PNG has adopted some rules and regulations against deforestation, and strictly implemented some environmental norms to protect the national forests and and save natural resources and bio-diversity. Thus, the industrialization (particularly rural agriculturally based industrialization) process is an unfinished task. PNG requires huge financial support to build a huge network of green infrastructures for green industrialization for green trade towards sustainability. Currently, PNG has two dams and using two hydroelectricity for power / electricity generation. But it's not enough to fulfil the domestic demand in future. PNG must focus on 'solar energy' and supply it to rural areas. There is 'Sunshine' energy availability the whole year at free of cost. It must be properly utilized for power generation.

8. Recommendations

In this direction, India and China can help by transferring an appropriate technology with financial support to PNG to increase value-chains and supply-chains in a free trade area on priorities basis for their export potential include electrification, road, bridges, and other infrastructural development like buildings of school, college, university, hospitals, solar energy park, cyber park, leather industry, electric/battery scooter and cars, automotives, textiles and apparel, ayurvedic and pharmaceuticals, processed agricultural food items: such as cooking oils from maize, mustard, sunflowers, soya, coconut, groundnuts, olive and peanuts, rice and wheat, pulses, milk production and collection center for sterilization, and distribution networks for consumption, cocoa milk and chocolate plants, toys and other gifted items etc.

The PNG University of Technology can play a significant role in designing the projects, provide training programmes along-with technology transfer to the rural people, and pooling between India-China-PNG cooperation to achieve "Self-reliance goal towards sustainability." Thus, University of Technology needs to collaborate with the Council of Scientific and Industrial Research (CSIR), Indian Council of Agricultural Research (ICAR), Indian Institute of Management (IIM), Indian Institute of Technology, Entrepreneurship Development Institute of India (EDII), Khadi and Village Industries Council (KVIC) and All India Institute of Medical Sciences (AIIMS) etc.

9. References

Izuaka, M. (2023). *Falling Long-Term Growth Prospects: Trends, Expectations, and Policies.* World Bank.

James, P. N. (2012). *Sustainable Communities, Sustainable Development.* Hawai'i, USA, USA: University of Hawai'i Press, Honolulu.

Jha, P. (2023, March 23). G20 India: Orchestrating a concerted recovery and its global transmission.

Mukherji, B. (2022, August 17). Rise of a China-centric world order: Cold War 2.0 or World War III? Retrieved August 17, 2022, from https://www.msn.com/en-in/news/world/rise-of-a-china-centric-world-order-cold-war-2-0-or-world-war-iii/ar-AA10KvRc?ocid=msedgntp&cvid=1d4d091a5f4f43d4b051a31b90109eb0

Overton. John., S. R. (1999). *Strategies for Sustainable Development: Experience from the Pacific.* UK & the USA, London & New York, UK & USA: ZED BOOKS. Retrieved 1999

Prabhakar, A. C. (2015). A critical appraisal of comparative advantage theory under free market crony capitalism. *Investment Management and Financial Innovations*, *12*(3), 93.

Prabhakar, A. C. (2015). Evaluation of technology, trade, and inclusive development: Chinese Experiences. *Investment Management and Financial Innovations*, *12*(2), 180.

Prabhakar, A. C. (2015). Foreign Direct Investment, Trade and Economic Growth: A New Paradigm of the BRICS. *Modern Applied Science*, *9*(12), 32.

Prabhakar, A. C. (2016). *The Current Global Recession: A Theoretical and Empirical Investigation into Developed and BRICS Economies.* London: Emerald Group Publishing Limited.

Prabhakar, A. C. (2020). *Regional Trade and Development Strategies in the Era of Globalization.* (A. C. Prabhakar, Ed.) New York, USA: IGI Global. doi:10.4018/978-1-7998-1730-7.ch001

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