



Sustainability of Economic Resources

Harliantara^{1*}, Mira L. Bandaso², Petrus P. Roreng³, Marina V. Borovitskaya⁴, Rustem Adamovich Shichiyakh⁵

¹Department of Communication, Universitas Dr Soetomo, Surabaya, Indonesia

²Faculty of Economics and Business, Universitas Kristen Indonesia Paulus, Makassar, Indonesia

³Faculty of Economics and Business, Universitas Kristen Indonesia Paulus, Makassar, Indonesia

⁴Togliatti State University, Russia

⁵Kuban State Agrarian University named after I.T. Trubilin, Krasnodar, The Russian Federation

Received: 16/11/2019

Accepted: 02/02/2020

Published: 20/02/2020

Abstract

Indonesia as a country with high biodiversity has great opportunities to develop products from biodiversity. The biodiversity utilization through bioprospecting activities can meet the needs of raw materials for medicine, clothing, food, spices, animal feed, resin producers, dyes, and others. In addition, the diversification of primary medicinal plant products into secondary products has high economic added value. After the reform era in 1998, Indonesia has not been able to continue the socio-economic transformation that was stalled due to the crisis. Indonesia's average potential economic growth has continued to fall from 6.0 percent in the 1990-2000 period to an average of around 5.0 percent in the 2000-2015 period. This slow-moving structural transformation was also marked by the contribution of industrial GDP which fell to 19.9 percent. On the other hand, the contribution of primary sector GDP was 20.9 percent and the contribution of service sector GDP continued to increase to around 59.2 percent in 2018. The increase of GDP in the service sector shows a transition of growth sources from the primary to tertiary sectors. However, the economic transition has not been able to encourage higher growth. The service sector which absorbs labor migration from the primary sector is dominated by the informal services sector with a low growth contribution. The industrial sector, which has the greatest potential to drive growth, still faces the challenge of rising labor costs that have not been followed by an equal increase in productivity.

Keywords: Natural resources, Digital economy, Entrepreneurship, Transformation, Industrial sector

1 Introduction

The availability of natural resources (bahasa: Sumber Daya Alam (SDA)) which is the main capital of development is decreasing. SDA is not only a source of raw materials for domestic industrial needs, but also a source of foreign exchange. From energy resources, one of the challenges is the depletion of fossil energy reserves, such as oil, gas, and coal. The discovery of new oil and gas reserves has not been significant. In 2017, the reverse replacement ratio (RRR) for oil and gas was only 55.3 percent. On the other hand, the utilization of alternative energy sources and efficiency in energy use needs to be improved (1-4).

Sustainable development also faces the challenges of degradation and depletion of renewable natural resources such as forests, water, and biodiversity. Although deforestation rates have decreased significantly compared to before 2000, forest cover is expected to continue to decline from 50.0 percent of Indonesia's total land area (188 million

ha) in 2017 to around 38.0 percent in 2045. This will have an impact on raw water scarcity especially on islands that have very low forest cover such as Java, Bali, and Nusa Tenggara. The risk of scarcity of raw water is also increasing in other regions as a result of climate change. The area of scarcity water is expected to increase from 6.0 percent in 2000 to 9.6 percent in 2045 (5-7).

2 The Management Effectiveness of Economic Resources

Management of economic resources faces challenges related to carrying capacity of the environment, availability of land, limited infrastructure, spatial planning, and the welfare of farmer-fishermen and communities who depend on their livelihoods for the use of natural resources. The management of food and agriculture resources faces the issue of increasing demand for land and water as a result of increased economic activity. This condition causes increased the use of land and water competitiveness, especially among the agriculture, industry and housing sectors. The important issue is also the increase of food demand along with an increase in the population of 1.2 percent. On the other hand,

Corresponding author: Harliantara, Department of Communication, Universitas Dr Soetomo, Surabaya, Indonesia. E-mail: harliantara@gmail.com.

food production is also strongly influenced by seasonal factors and the availability and reliability of production infrastructure including irrigation (8-10, 13).

On the energy management and utilization side, the current condition is still felt to be less efficient. There is a large gap between primary energy intensity (500 SBM / billion Rupiah) and final energy (325 SBM / billion Rupiah). In addition, the use of coal to meet domestic needs has not been maximized. Coal DMO currently only reaches 23.5 percent of coal production of 548 million tons in 2018. Other energy management and utilization issues that need to be addressed are (1) adequate energy supply, especially gas; and electricity to meet the needs of the real sector; (2) the inefficiencies of provision of energy infrastructure due to differences between production locations and energy utilization; (3) quality and reliability of energy distribution, especially outside Java; (4) energy utilization has not yet given the effect of broad economic development; and (5) inefficient energy consumption. Energy savings in the industrial, transportation, building and commercial facilities sectors need to be continuously improved with potential savings of around 30.0 percent from current energy use (11, 12).

3 Slow Structural Transformation

This low productivity problem is related to the low quality of human resources, where the workforce is still dominated by elementary school graduates (40.7 percent), while not all workers with higher education have readiness and capacity according to the needs of the workforce. Mismatch of skills, the quality of education gaps between regions, limited talent to be prepared to train and work are issues that need to be addressed in increasing productivity (13-16).

The slow structural transformation in Indonesia is also related to the low exports. The ratio of Indonesia's export value / GDP has only reached 19.0 percent, or far below Thailand (69.0 percent), Vietnam (93.0 percent) and Singapore (172.0 percent). The superiority of natural resources in Indonesia have not been widely processed into high value-added products, as shown by the export of Indonesian products that are dominated by commodities (more than 50 percent), mainly processed CPO, base metals, rubber and food (17).

The low export ratio and the dominance of commodity exports illustrate three issues in the national industrial structure that need to be addressed in the future. First, the disharmony between the upstream and downstream sectors causes vulnerability in the national industrial supply/value chain so that national industry competitiveness is low. Secondly, the capacity of innovation in Indonesia is low, as shown by the export of industrial products with high technology content from Indonesia which is lower compared to equivalent countries.

Third, investment quality is low where the proportion of domestic investment is still lower compared to foreign investment. Expectations of the transfer of technology and knowledge from the entry of foreign investment that can encourage innovation and diversification of export products have not yet been fully realized (18).

4 Targeting a Large Domestic Market

Most investments are still targeting a large domestic market instead of export-oriented. Investment has also shifted from the secondary sector to the tertiary sector in the past two years (19).

Indonesia also has not been able to optimally utilize economic diplomacy to support investment and exports. This relates to the issue of (1) the lack of integration of economic diplomacy and coordination policies, (2) the non-optimal capacity of the implementing apparatus of economic diplomacy, (3) not harmonious domestic regulations that hinder the implementation of trade agreement negotiations, (4) the absence of investment-related arrangements abroad, and (5) the government synergy, the private sector, and the public is not yet optimal for promoting effective economic diplomacy (20-24).

The slow structural transformation is also shown by the dominance of micro scale businesses in the structure of national business actors (99.0 percent). This condition shows the existence of hollow middle which makes the capacity of the business community to build upstream-downstream linkages become limited. The efforts to increase the scale of MSME businesses have not yet shown significant results. The MSME facilities to start the operation in the context of increasing efficiency and economies of scale also faces challenges in the capacity of cooperatives to become modern and professional businesses (25).

On the other hand, the acceleration of structural transformation can still be carried out by increasing entrepreneurial capacity in Indonesia. The entrepreneurship improvement is shown from the entrepreneurship ratio in Indonesia which has reached 3.2 percent in 2017. This condition is supported by an upward trend of entrepreneurship communities in recent years. The Data from Global Entrepreneurship Monitor (2017) shows that people's interest and motivation for entrepreneurship is quite high at 47.74 percent or greater than the global average of 43.43 percent. This trend is in line with the development of the digital economy which opens up a lot of business opportunities (26-28).

5 Digital Economy Entrepreneurship

The challenge is the entrepreneurship interest has not been accompanied by sufficient capacity to run a business. Most entrepreneurs are an example of business and are not based on an understanding of business model, market, and innovation. In 2018, the Government has launched the Making Indonesia 4.0 movement. This movement is in line with the digitalization era that facilitates the integration of information for the purpose of increasing productivity, efficiency, and service quality (29-33).

The future of digital economy use has great potential to increase economic added value. For example, the use of Industry 4.0 along the value chain can improve upstream-downstream efficiency and contribution of aggregate industrial value added to the economy. However, the challenges facing in the era of digitalization are also quite large. The innovation readiness to face the digital revolution as shown by the Network Readiness Index, Indonesia is

ranked 73 out of 139 countries, while the equivalent countries have better preparedness, such as Malaysia (ranked 31), Turkey (48), China (59), Thailand (62). Indonesia has an advantage in price, However, Indonesia is left behind in infrastructure and utilization by the community (34-39).

6 Conclusion

Indonesia's readiness to adopt and explore digital technology that can drive transformation in government, business models and people's lifestyles is also considered lacking. This is shown by World Digital Competitiveness Ranking data for 2017 where Indonesia ranks 59th out of 63 countries. How to adapt, integrate information technology, and regulatory frameworks are issues that need to be improved so that Indonesia can take advantage of digital technology advancements for economic growth and improving quality of life. Another challenge faced by Indonesia relating to HR development and business competition. The era of digitalization has an impact on changing work patterns and has the potential to eliminate work that is both simple and repetitive. On the other hand, trading patterns and the online-based services supply and the use of non-cash payments make many conventional business models no longer relevant. This condition requires a comprehensive policy and adaptation pattern in utilizing digital transformation for sustainability and equitable economic growth and improving the quality of social and environmental life. In the next five years, the targets to strengthen economic resistance for quality growth are as follows: 1) The increase of capacity and quality of economic resource support as a modality for sustainable economic development; and 2) The increase of added value, employment, exports, and economic competitiveness.

References

- Solow RM. 25. Sustainability: an economist's perspective. *Economics of the environment: Selected readings*. 2019.
- Halldórsson Á. Actionable sustainability in supply chains. *In Operations, Logistics and Supply Chain Management 2019* (pp. 191-203). Springer, Cham.
- Schröder P, Bengtsson M, Cohen M, Dewick P, Hoffstetter J, Sarkis J. Degrowth within—Aligning circular economy and strong sustainability narratives. *Resources, Conservation and Recycling*. 2019 Jul 1;146:190-1.
- Cui CQ, Wang B, Zhao YX, Wang Q, Sun ZM. China's regional sustainability assessment on mineral resources: Results from an improved analytic hierarchy process-based normal cloud model. *Journal of cleaner production*. 2019 Feb 10;210:105-20.
- Egenolf V, Bringezu S. Conceptualization of an Indicator System for Assessing the Sustainability of the Bioeconomy. *Sustainability*. 2019 Jan;11(2):443.
- Leal Filho W, Tripathi SK, Andrade Guerra JB, Giné-Garriga R, Orlovic Lovren V, Willats J. Using the sustainable development goals towards a better understanding of sustainability challenges. *International Journal of Sustainable Development & World Ecology*. 2019 Feb 17;26(2):179-90.
- Bekun FV, Alola AA, Sarkodie SA. Toward a sustainable environment: Nexus between CO2 emissions, resource rent, renewable and nonrenewable energy in 16-EU countries. *Science of the Total Environment*. 2019 Mar 20;657:1023-9.
- Adams D, Adams K, Ullah S, Ullah F. Globalisation, governance, accountability and the natural resource 'curse': Implications for socio-economic growth of oil-rich developing countries. *Resources Policy*. 2019 Jun 1;61:128-40.
- Roca-Puig V. The circular path of social sustainability: An empirical analysis. *Journal of cleaner production*. 2019 Mar 1;212:916-24.
- Chams N, García-Blandón J. On the importance of sustainable human resource management for the adoption of sustainable development goals. *Resources, Conservation and Recycling*. 2019 Feb 1;141:109-22.
- Cao Y, Huang L, Li Y, Jermisittiparsert K, Ahmadi-Nezamabad H, Nojavan S. Optimal scheduling of electric vehicles aggregator under market price uncertainty using robust optimization technique. *International Journal of Electrical Power & Energy Systems*. 2020 May 1;117:105628.
- Yu D, Wang Y, Liu H, Jermisittiparsert K, Razmjoo N. System identification of PEM fuel cells using an improved Elman neural network and a new hybrid optimization algorithm. *Energy Reports*. 2019 Nov 1;5:1365-74.
- Tian MW, Ebadi AG, Jermisittiparsert K, Kadyrov M, Ponomarev A, Javanshir N, Nojavan S. Risk-based stochastic scheduling of energy hub system in the presence of heating network and thermal energy management. *Applied Thermal Engineering*. 2019 May 31;113825.
- Yu D, Wang J, Li D, Jermisittiparsert K, Nojavan S. Risk-averse stochastic operation of a power system integrated with hydrogen storage system and wind generation in the presence of demand response program. *International Journal of Hydrogen Energy*. 2019 Nov 29;44(59):31204-15.
- Jabarullah NH, Jermisittiparsert K, Melnikov PA, Maselena A, Hosseini A, Vessally E. Methods for the direct synthesis of thioesters from aldehydes: a focus review. *Journal of Sulfur Chemistry*. 2019 Sep 5:1-20.
- Jiao Y, Jermisittiparsert K, Krasnopevtsev AY, Yousif QA, Salmani M. Interaction of thermal cycling and electric current on reliability of solder joints in different solder balls. *Materials Research Express*. 2019 Aug 7;6(10):106302.
- Yu D, Ebadi AG, Jermisittiparsert K, Jabarullah NH, Vasiljeva MV, Nojavan S. Risk-constrained Stochastic Optimization of a Concentrating Solar Power Plant. *IEEE Transactions on Sustainable Energy*. 2019 Jul 10.
- Jermisittiparsert K, Sriyakul T, Sutduean J, Singa A. Determinants of Supply Chain Employees Safety Behaviours. *Journal of Computational and Theoretical Nanoscience*. 2019 Jul 1;16(7):2959-66.
- Sriyakul T, Singa A, Sutduean J, Jermisittiparsert K. Effect of Cultural Traits, Leadership Styles and Commitment to Change on Supply Chain Operational Excellence. *Journal of Computational and Theoretical Nanoscience*. 2019 Jul 1;16(7):2967-74.
- Sutduean J, Singa A, Sriyakul T, Jermisittiparsert K. Supply Chain Integration, Enterprise Resource Planning, and Organizational Performance: The Enterprise Resource Planning Implementation Approach. *Journal of Computational and Theoretical Nanoscience*. 2019 Jul 1;16(7):2975-81.
- Singa A, Sriyakul T, Sutduean J, Jermisittiparsert K. Willingness of Supply Chain Employees to Support Disability Management at Workplace: A Case of Indonesian Supply Chain Companies. *Journal of Computational and Theoretical Nanoscience*. 2019 Jul 1;16(7):2982-9.
- Jermisittiparsert K, Chankoson T. Behavior of Tourism Industry under the Situation of Environmental Threats and Carbon Emission: Time Series Analysis from Thailand. *International Journal of Energy Economics and Policy*. 2019;9(6):366-72.
- Romprasert S, Jermisittiparsert K. Energy Risk Management and Cost of Economic Production Biodiesel Project. *International Journal of Energy Economics and Policy*. 2019;9(6):349-57.

24. Kasayanond A, Umam R, Jermisittiparsert K. Environmental sustainability and its growth in Malaysia by elaborating the green economy and environmental efficiency. *International Journal of Energy Economics and Policy*. 2019;9(5):465-473.
25. Jermisittiparsert K, Sriyakul T, Rodboonsong S. Power (Lessness) of the state in globalisation Era: Empirical proposals on determination of domestic paddy price in Thailand. *Asian Social Science*. 2013 Dec 1;9(17):209.
26. Jermisittiparsert K, Sriyakul T, Pamornmast C. Minimum Wage and Country's Economic Competitiveness: An Empirical Discourse Analysis. *The Social Sciences*. 2014 Jul 1;9(4):244-50.
27. Jermisittiparsert K, Pamornmast C, Sriyakul T. An Empirical Discourse Analysis on Correlations between Exchange Rate and Industrial Product Export. *International Business Management*. 2014;8(5):295-300.
28. Maselena A, Huda M, Jasmi KA, Basiron B, Mustari I, Don AG, bin Ahmad R. Hau-Kashyap approach for student's level of expertise. *Egyptian Informatics Journal*. 2019 Mar 1;20(1):27-32.
29. Huda M, Maselena A, Teh KS, Don AG, Basiron B, Jasmi KA, Mustari MI, Nasir BM, Ahmad R. Understanding Modern Learning Environment (MLE) in Big Data Era. *International Journal of Emerging Technologies in Learning*. 2018 May 1;13(5).
30. Huda M, Maselena A, Atmotiyoso P, Siregar M, Ahmad R, Jasmi K, Muhamad N. Big data emerging technology: insights into innovative environment for online learning resources. *International Journal of Emerging Technologies in Learning (iJET)*. 2018 Jan 22;13(1):23-36.
31. Jermisittiparsert K, Sriyakul T, Pamornmast C, Rodboonsong S, Boonprong W, Sangperm N, Pakvichai V, Vipaporn T, Maneechote K. A Comparative Study of the Administration of Primary Education between the Provincial Administration Organisation and the Office of the Basic Education Commission in Thailand. *The Social Sciences*. 2016 Nov 1;11(21):5104-10.
32. Alipour E, Alimohammady F, Yumashev A, Maselena A. Fullerene C60 containing porphyrin-like metal center as drug delivery system for ibuprofen drug. *Journal of Molecular Modeling*. 2020 Jan 1;26(1):7.
33. Namdarian A, Tabrizi AG, Maselena A, Mohammadi A, Moosavifard SE. One step synthesis of rGO-Ni3S2 nano-cubes composite for high-performance supercapacitor electrodes. *International Journal of Hydrogen Energy*. 2018 Sep 13;43(37):17780-7.
34. Jermisittiparsert K, Trimek J, Vivatthanaporn A. Fear of Crime among People in Muang-Ake, Lak-Hok, Muang, Pathumthani. *The Social Sciences*. 2015;10(1):24-30.
35. Jermisittiparsert K, Akahat N. Fear of Crime among Students of Kalasin Rajabhat University. *Research Journal of Applied Sciences*. 2016 Mar 1;11(2):54-61.
36. Luukkanen J, Kaivo-oja J, Vähäkari N, O'Mahony T, Korkeakoski M, Panula-Ontto J, Vehmas J, Nguyen Quoc A. Resource efficiency and green economic sustainability transition evaluation of green growth productivity gap and governance challenges in Cambodia. *Sustainable Development*. 2019.
37. IBATOVA AZ, NEZHMETDINOVA FT, SITDIKOV FF. Global challenges for the agrarian sector of russian economy and its human resources. *Revista ESPACIOS*. 2018 Jun 30;39(26).
38. Safiullin MR, Akhmetshin EM. Digital transformation of a university as a factor of ensuring its competitiveness. *International Journal of Engineering and Advanced Technology*. 2019;9(1):7387-7390.
39. Ziyadin S, Ermekbaeva B, Supugaliyeva G, Doszhan, R. Transformation of basic indicators of socio-economic processes in the digital economy. Paper presented at the Proceedings of the 31st International Business Information Management Association Conference, IBIMA 2018: Innovation Management and Education Excellence through Vision. 2020. 2018:2009-2017.