

Economic Recovery Strategy after the COVID-19 Pandemic

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Abstract

The COVID-19 pandemic has been more than one year. It was started in March 2020. All aspects of life have been changed. Almost every activity must be done at home. This causes some businesses to close. Economic flow is not good since then. An economic recovery strategy must be done to restore economic growth after the COVID-19 pandemic has subsided. Until this paper is written, the economic recovery has not been reached by Indonesia. This paper describes the strategy for economic recovery after the COVID-19 pandemic. Methods: This paper is a literature review. The literature was taken from Science Direct and PubMed databases. The inclusion criteria are research and review. Exclusion criteria are short notes and commentary. Journals were selected based on the title, abstract, and full text. After the screening, there were 24 journals. Selected journals were summarized and narrated. The results showed that the economic recovery strategy must be done gradually in all aspects. The aspects that must be developed are broadband, healthcare investment and facilities, aviation, stock markets, and transportation. Broadband is essential in online working, business, and learning. Healthcare investment is very critical to shorten the lockdown period. Those strategies can alleviate the economic crisis and increase economic growth.

Keywords: *COVID-19, economy, recovery, strategy*

JEL : *A10, O1, Z18*

A. INTRODUCTION

In December 2019, a quickly spread viral infection occurred in China. The cluster was in Wuhan, Hubei Province. The virus is called coronavirus disease 2019 (COVID-19). It became a pandemic on March 11, 2020, until this paper was written. The COVID-19 pandemic has had great effects on all aspects of lives, including the economy (Vidal-Tomas, 2021).

Before discussing the recovering economy strategy, we must comprehend the economic situation during the COVID-19 pandemic. The economic loss was quite large, and China's economic growth decreased by more than 6%. It was estimated that the global economy in the world would be decreased by more than 4%. The decreasing economic flow can be seen from the lowering energy demand, oil,

coal, and electricity demand (Beyer et al., 2021; Wan et al., 2021).

The COVID-19 pandemic brings global health problems and economic recession. A lockdown policy makes the recession get worse. However, it is important to reduce the transmission and death tolls. The job loss rate is very high. The reduced working hours reach more than 190 million globally for full-time workers (Wielen & Barrios, 2020). Healthcare investment is also a good strategy to reach a quick economic recovery condition (Coccia, 2021).

No place on this earth has not been affected by the COVID-19 pandemic. These naturally disrupted the economy and lives. Governments in the global world cannot fight the pandemic a night time, but they need a long period. Even after the pandemic subsides, the new normal may become normal. The condition cannot be back to the previous condition, like before the COVID-19 pandemic began. Improving policies and increasing researches based on the current situation are mandatory. There is a transition phase between the crisis and recovery phases. The approaches are different for each disaster. However, the approaches might have some lessons for the next hazards. Experiences and reflections are very precious to accelerating recovery. Multidimensional cooperation is suggested to increase recovery speed (Fakhrudin et al., 2020).

China is the first country to show recovery after the COVID-19 pandemic. Although the recovery is slow, it significantly

impacts other countries. The impact is on economic growth and the consumption of energy. China's economic growth impacts on other countries are 0.17% for upper-middle-income countries, 0.16% for lower-middle-income, and 0.15% for high-income. Nevertheless, the most prevalent impact on energy consumption is for high-income countries. China's great economic scale is essential in revitalizing other countries' economies globally. This effect is not constant. It declines gradually. Economic growth depends on each country's capability to manage economic recovery. International cooperation is essential to manage the economic crisis due to the COVID-19 pandemic (Wang & Zhang, 2021).

The recovery phases are dominated by economics, politics, and social science. The responses must be holistic and comprehensive. It is also an opportunity to reaffirm our commitments (Fakhrudin et al., 2020).

Although the COVID-19 pandemic has been more than one year, the economic flow hasn't been back to normal until now, even after the vaccination program is implemented. Therefore, a strategy for recovering the economy is very important. Until this paper is written, Indonesia has not reached economic recovery. Therefore, this paper aims to describe the possible strategy for recovering the economy after the COVID-19 pandemic has subsided. The main strategies will be discussed here are broadband, healthcare investment and

facilities, aviation, stock markets, and transportation. The strategies for recovering the economy after the COVID-19 pandemic comprise a wide range of recovery sector efforts because it is important to develop all sectors to gain speedy economic recovery. All of the efforts must be done simultaneously.

B. METHODS

This paper is a literature review. The literature was taken from Science Direct and PubMed databases. Keywords are COVID-19, economy, recovery, and strategy. There were 64 articles from PubMed and 2295 articles. The inclusion criteria are research and review. Exclusion criteria are short notes and commentary. Journals were selected based on the title, abstract, and full text. After the screening, there were 24 journals. Selected journals were summarized and narrated. The selected articles comprise a wide range of recovery sector efforts because it is important to develop all of the sectors in order to gain speedy economic recovery. Therefore, all related articles to the recovery strategies will be included.

C. RESULTS AND DISCUSSION

Economic changes due to the COVID-19 pandemic can be seen in many indicators, such as lowering electricity usage, fuel demand, tourism, etc. Therefore, the strategies should be made specifically based on each sector's needs (Goswami et al., 2021). This paper will describe a wide range of recovery sectors' efforts because it is

important to develop all of the sectors in order to gain speedy economic recovery.

There are three types of economic recovery based on the "shock geometry" concept. The first one is 'V-shaped'. It is the most optimistic one. It is the quickest recovery model. The second type is the 'U-shaped' model. This model never returns to the previous pre-crisis condition. The third model is the 'L-shaped' type. This is the worst type. The growth rate decreased all over time. Based on previous experiences in the SARS outbreak, economies underwent 'V-shaped' recoveries. However, the COVID-19 pandemic economic recovery might not undergo the same plot. It is due to the distancing policy for larger scales (Brodeur et al., 2020). Other determinant factors are differences in infrastructure, previous economic conditions, and healthcare facilities. The better the healthcare facilities, the faster economic recovery will be (Goswami et al., 2021). Growth performance, fiscal condition, and vulnerability also differ between countries. Therefore, the recovery time will be different. Technology can be used to speed the recovery in economic flow (Goswami et al., 2021).

Reducing or closing business activities will slower economic recovery (Hitt et al., 2021). However, the important thing is the recovery must be balanced with the health strategy to maintain a healthy population (C. Zhang & Ramse, 2021). Besides, it is also crucial to consider

inequalities in long-term economic recovery (Hu, 2020).

Strategies in recovery are divided into some sectors such as health care, infrastructure for digital marketing (electricity and broadband internet), investment (cryptocurrency, stock market, assets), also business (tourism and transportation, informal economy sector, supply chain, and fuel). Those strategies are described as follows:

a. Healthcare Investment

Countries with a high investment in healthcare have a lower fatality rate of COVID-19. Therefore, the lockdown policy can be implemented in a shorter time. The shorter the lockdown period, the faster economic recovery will take place. Gaining fast economic recovery must be accompanied by extra investment in healthcare sectors and facilities (Coccia, 2021).

b. Infrastructure for Digital Marketing (Electricity and Broadband Internet)

Electricity

A lockdown from March 25 to May 4, 2020, in India lowered economic activity tremendously. When the restrictions were reduced, the economic flow was a bit activated. However, the economic flow cannot reach the previous level before the COVID-19 pandemic began. Planning strategies to recover the economy requires a detailed assessment of the economic recession magnitude. Economic impacts are almost the same globally, therefore the

strategies would be similar also. The most practical way to monitor the economic situation globally is by measuring the consumption of electricity and night light intensity. It is better than using economic flow because it usually shows many changes in a short time (Beyer et al., 2021).

Electricity is a requirement for economic flow from households to big industrial companies. Meanwhile, good nighttime light intensity means good economic activity at night. Electricity and nighttime light usage can predict GDP as well. It is implemented in India, the European Union, and the USA. There was a decrease rate of more than 20 percent in the lockdown period. Between March and September 2020, the decline was approximately 10 percent (Beyer et al., 2021).

Broadband (High-Speed Internet)

Broadband has a special role in economic growth, especially during the COVID-19 pandemic. Almost all activities are done online, therefore broadband is very critical. The study revealed that broadband ameliorated China's economic losses. The growth was very large during the first few months of the pandemic. Therefore, increasing broadband means recovering economic growth (X. Zhang, 2021).

Broadband has multiple technological types, namely fiber optics, cable, powerline, WiFi, and WiMax. There are two main categories of broadband based on the Organization for Economic

Cooperation and Development (OECD). The categories are fixed and mobile broadband. Mobile broadband grows faster due to its flexibility. The growth reached 83% in 2019. Social media and streaming have been booming since then. Twitter, Facebook, WhatsApp, Instagram, YouTube, WeChat, and TikTok, have billions of users and global networks. These platforms can leverage economic growth as well. They increase innovation, productivity, and international investment. Therefore, the broadband influence is huge for economic growth (X. Zhang, 2021).

Broadband is one of the driving requirements of economic growth. China is the first country attacked by the pandemic, it is also the first country to gain economic recovery. Broadband has significantly correlated with growth in domestic products (GDP) growth. Staying and working at home cause online business and study to increase. This condition needs broadband. The role of broadband is very prominent. Without any broadband, working and studying online is impossible (X. Zhang, 2021).

Broadband increased the workers' number. The better the broadband connection, the more effective work will be. The study revealed that increasing broadband by 10% would increase 1.87% GDP from January to March 2020. The more severe pandemic, the greater the broadband effects are. When many people resumed work, the broadband effect was less. The region with greater broadband rates had better economic growth (X. Zhang, 2021).

There are three types of network effects, namely the subscriber effect, ubiquity effect, and diversity effect. The subscriber effect means the benefits come from additional subscribers. The ubiquity effect means that benefits come from geographic ubiquity. The diversity effect means the benefits come from the diverse behaviors of network users. These three types occur when broadband usage accumulates human capital. The subscriber effect happens when a broadband user attends an online learning platform and shares the knowledge that he/she got previously. The ubiquity effect occurs when a broadband user gets knowledge from other users globally. The platforms are Instagram, Facebook, WhatsApp, Twitter, WeChat, TikTok, and YouTube. The diversity effect occurs when broadband users transfer and get information and knowledge online from other users. Finally, there will be a global knowledge bank for users (X. Zhang, 2021).

Some exogenous factors affect GDP growth. These factors are technological progress, education, public policies, public health, etc. Quarantine policies alleviated the coronavirus transmission, however, they decreased some activities and productivity. Although the vaccine has been given in some countries, viruses have mutations. Therefore, the policy of working from home will be a good choice for some companies. Then, broadband is an important support system for remote working/virtual offices (X. Zhang, 2021).

Broadband usage depends on subsidy from government subsidies, tax-cutting, and costs. The subsidy is provided for public institutions, educational places, and libraries. High quality and fair prices of broadband are crucial to give the best service to customers (X. Zhang, 2021).

The new generation of 5G mobile broadband is a new technology to gain better quality. The China companies are good at developing this new technology. Promoting broadband is an effective strategy to alleviate the economic crisis during the COVID-19 pandemic (X. Zhang, 2021).

c. Investment (Assets, Cryptocurrency, Stock Market) Assets (Property)

Economic recessions are usually accompanied by decreased asset prices. The recovery will be shown by the increase in the asset price. However, the recovery can take years to resolve (Herrenbrueck, 2021).

Cryptocurrency

There has been no significant change in cryptocurrency during the COVID-19 pandemic. It was changed a bit on March 12, 2020. There was panic at that time. However, after that, the market was back to the previous conditions. The diversification benefit, efficiency, and herding were related to market conditions at that time. Therefore, dynamical analytics was more important than static ones (Vidal-Tomas, 2021).

Stock Market

Stock prices are unstable. They have been up and down from the beginning of the COVID-19 pandemic until recently. The prices reached their previous peak in August 2020. However, the damage caused by the pandemic can be deep and long-term (Herrenbrueck, 2021).

The changing of the stock price is due to panic selling-off. A stock price model revealed that during the crash, the stock prices decreased independent of financial antifragility, but the lowered price occurred due to the outflowing fund. It was also shown that the investors funded based on the quality of stocks in portfolio restructuring. Meanwhile, the stock price recovery happened due to the inflowing funding and financial antifragility of the company. The recovery was V-shaped based on a study model. However, negative financial antifragility resulted in an L-shaped recovery. Therefore, the shock length and the recovery period are important in deciding on investment (Mahata et al., 2021).

d. Business (Accommodation, Informal Sector, Tourism and Transportation, Fuel (Fossil Fuel vs. Green Energy), also Supply Chain)

Accommodation (Hotels)

The Covid-19 pandemic affects the hospitality industry, including accommodation-sharing sectors. Airbnb renting property, Couchsurfing sharing rooms, and home exchanging via LoveHomeSwap are impossible due to

restrictions. The loss is almost eight times for the hosts. The concept of those businesses is sharing rooms. However, it is prohibited during the COVID-19 pandemic to reduce transmission risks (Gerwe, 2021).

The accommodation-sharing sector is flexible, it can be booked online. However, it was hit by the COVID-19 pandemic. Flight cancellations and lockdowns made the demands low. The Airbnb community hosts showed help during the COVID-19 pandemic by opening up their homes for free accommodation for health workers. The other sectors offer free meals, car rides, or services to work together to fight the pandemic and gain recovery as soon as possible. Vaccination programs hopefully can increase the pace of speedy recovery. During the transition time, the accommodation-sharing sector has a special opportunity to redirect its operations to more resilient and sustainable conditions to benefit all of the customers and its stakeholders. The unique characteristics of the accommodation-sharing sector are local communities' relationships and money-saving. In the COVID-19 pandemic, adaptation can be made by increasing health and safety standards for customers. Policymakers and hosts need to make regulations together to help regain customer confidence faster (Gerwe, 2021).

Informal Economic Sectors

The informal economic sectors are also affected by the COVID-19 pandemic. However, it was neglected. In African

countries like Ghana, socio-economic recovery depends on the informal sector. Therefore, governments need to reform their regulations regarding the informal sector during the COVID-19 pandemic and afterward (Akuoko et al., 2021).

The government's decision to ease the lockdown was pushed by economic distress and pressures from informal workers. The government's efforts to fund and feed the urban poor during the lockdown were ineffective. The informal sector workers need to go back to work. The informal sector is an integral part of the economy in Ghana. However, the loosening of the lockdown has to be accompanied by tight health protocols to reduce the risks of COVID-19 transmissions (Akuoko et al., 2021).

Tourism and Transportation

Many airlines are facing downgrades and bankruptcy due to the COVID-19 pandemic. Travel restrictions made the flight canceled. The recovery process will be slower than expected. The recommendations are protecting traveling, increasing efficiency, and ensuring health safety for customers and employees (Dube et al., 2021).

A study revealed that the slow recovery started in June 2020, especially in China. However, the recovery depends on travel policies, which are changing based on current situations. The recovery can occur due to domestic and regional tourism. The international markets are

starting to recover step by step. Therefore, the recommendations are providing affordable accommodation for the customers, restructuring the systems based on current situations, using advanced technology, and enhancing efficiency. In aviation, it is better to use medium to narrow-bodied aircraft to achieve efficiency and sustainability (Dube et al., 2021).

China's aviation industry was the first attacked by the COVID-19 pandemic. However, it was also the first one that underwent gradual recovery. The domestic market in China's aviation had an approximately 80% recovery rate from July 2020. The international recovery was slower due to quarantine, strict requirements, and measurements for a health check. China used fee reductions to reduce airlines' marginal costs. However, uncoordinated international market regulations made serious recovery challenges (Czerny et al., 2021).

It needs 7 months to recover the aviation industry from the COVID-19 pandemic. Passengers need time to gain confidence in the safety of air transportation. Transportation services could increase the risks of virus transmission if the health protocol is not implemented carefully (Czerny et al., 2021).

The frequencies of air flights outside Wuhan were associated with the COVID-19 cases. The pandemic mostly emerged in large cities. Restarting aviation too early may cause the virus to spread, and then a reduction in travel occurs. Reducing the

passengers' number can actually be replaced by increasing the freighter/cargo numbers. However, there is certain regulation about carrying loads in aviation. The policy is changed based on the current pandemic situation. Fee reduction and financial supports are useful, but the aviation losses are too many (Czerny et al., 2021).

Most of the Chinese airlines are the central or local government's property. Therefore, the Chinese government can support all or do market consolidation. Flattening the curve can be done through infection prevention at the airport and on aircraft (Czerny et al., 2021).

Recovery will be based on sustainable development goals (SDGs). Sustainable Goal Development emphasizes the urgency in managing disaster risks, investing in reducing disasters and enhancing preparation for effective response and action. The final goal is to speed recovery and reconstruction (Dube et al., 2021).

The airport management, health system, and government must work together to achieve the adoption of safety protocols. Addressing customers' fear and uncertainty during the COVID-19 pandemic is important. Booking and cancellation policies must be made flexible to ensure customer convenience. A detailed explanation about the destination condition regarding quarantine upon arrival has to be enclosed for the customer. A valid rapid test screening has to be

provided for 24 hours in the airport with biosafety certification (Dube et al., 2021).

A health protection system is developed, namely the high-efficiency particulate air (HEPA system). This system can deliver high airflow. It has hospital-grade filters. The exchange of cabin air is every 2–3 min. It kills almost 99% of COVID-19 virus particles. The seats are arranged facing forward to prevent face-to-face interactions (Dube et al., 2021).

Deep cleaning techniques with alcohol to clean the prone areas (trays) are very important. Airports and aircraft are prone to promoting social interaction. Therefore, the cleaning process must be an extra effort. During the COVID-19 pandemic, the declining airports' incomes are the taxes from passengers and airlines. The strategy should be focused on increasing efficiency, reducing costs, ensuring safety, and minimizing the risks of transmission (Dube et al., 2021).

Ensuring efficiency means airspace management, optimizing movement area, and ensuring speedy screening at the check-in counter. Developing fast and efficient technology is mandatory. Automated use of robotics is good for reducing person-to-person contact. Rapid testing and screening are essential to prevent COVID-19 transmissions. Baggage handling is also a concern. This area should be efficient and speedy, but the hazards must be prevented. Sanitation of baggage needs to be done, and it needs protective clothing. Artificial Intelligence (AI) can be used to predict

traffic. This has been implemented in San Francisco (Dube et al., 2021).

A contactless immigration system is needed at check-in and checkout. We need a fast and efficient procedure to reduce crowds and maintain physical distancing. A cost-effectiveness strategy can be done by changing some of the passenger planes into cargo, reducing staff, rescheduling debt, and fee negotiation. Using the most efficient and clean aircraft are also a good choice for enhancing efficiency (Dube et al., 2021).

Increasing income of aircraft can be from ancillary services/products. The services/products are car rental, hotel room sales, and airport parking. They are from 3rd parties. The willingness to buy is enhanced by special offers, such as a discount for a future flight, travel insurance, hotel price, etc. Those services/products can be purchased through mobile devices' applications/online. However, due to the COVID-19 pandemic, the ability and willingness to purchase the products/services will be lower (Shaw et al., 2021).

The airport lost about 50% income on average due to the COVID-19 pandemic. China made national regulations for international passengers. Strict control and measurements can increase traveler confidence. On-site COVID-19 testing is good for increasing accuracy. Less invasive, valid, reliable, and low costs measures are ideal for enhancing recovery. Promoting tourism and leisure activities can stimulate

income in the aviation industry. However, the international market is still weak (Czerny et al., 2021).

A V-shaped recovery might be seen when the COVID-19 pandemic subsided. There are three demand factors from passengers that can delay recovery. Those factors are the negative effects of the pandemic and the tension between China and the U.S. in the world economy. Because there is a strong relationship between economic growth and the aviation industry, then this contraction situation between China and the U.S. would slow down economic recovery. The second factor is the trend of online meetings, or conferences will reduce the need for aviation. These trends might be continued, although the COVID-19 pandemic already subsides. The changes in business and meeting habits affected aviation demands. The third factor is the most important. There is a huge segment of passengers who are afraid to fly until the pandemic subsides and quarantine procedures are stopped. Therefore, hygiene requirements must be increased thoroughly in aircraft, cabins, airports, and gates. The present recovery is helped by cost reductions from the governments. The costs are reducing airport fees and traffic control charges (Czerny et al., 2021).

Many aircraft manufacturers stop future aircraft production. The cargo business might get better than the aircraft business for passengers. It is estimated that the recovery needs at least three years (Czerny et al., 2021).

Another analysis predicted the recovery would take at least 2 years. Freight traffic is predicted to recover earlier than passengers. Recovery times are variable among different regions due to various levels of contagion and government policy. Passengers in the Asia Pacific are recovered earlier than in Europe and North America. In contrast, freight demands are better for North America than the Asia Pacific. The earliest recovery time will be 2023. The bad scenario for recovery is 2024 for approximately 6% of cases (Gudmundsson et al., 2021).

Economies and the aviation industry will be bounce-back to previous levels after a shock. The COVID-19 pandemic likely causes transient correction on previous demands in the aviation industry. This correction is also affected by other factors, such as the failures of weaker airlines and market structure changes (Gudmundsson et al., 2021).

Fuel (Fossil Fuel vs. Green Energy)

There are reducing demands for fossil fuels (coal, natural gas, and oil) during the COVID-19 pandemic. The global energy demand decreased by more than 3% from January until March 2020. However, clean (renewable) energy demands are increasing. Therefore, in recovering the economic strategy, it is important to invest in clean energy. Wan *et al.* studies revealed that there is potential for a green recovery by increasing investment in clean (renewable) energy, reducing taxes for

clean energy, subsidizing electric vehicles, giving funds for public transport, or creating more jobs in clean energy industries (Wan et al., 2021).

Supply Chain Network

Supply chain network models include labor/workers as an essential variable in economic activity. Labor is an essential resource in supply chains. It is important from production to transportation, distribution, and storage. However, during the COVID-19 pandemic, this chain has been disrupted. The reasons are fear of transmission, illness, morbidity, the policy of social/physical distancing, etc. (Nagurney, 2021).

The modeling framework determines the flexible and fixed demands for products to predict the availability and supply chain. This chain is enhanced by online/electronic commerce. It is relevant to various applications. The products are protective personal, medical equipment, or food items (Nagurney, 2021).

In the first few months of the COVID-19 pandemic, many factories closed down. Meanwhile, the demands were increasing globally. The prices were getting up and up. This was worsened by panic buying. The supply chain got the worse scenario. Besides, some factories became the new clusters for virus transmission because their workers were getting infected asymptotically, and they worked in proximity. Therefore, reallocation was needed (Nagurney, 2021).

The Phases of Recovery

There are four phases to combat a hazard's impact: preparedness, response, recovery, and mitigation. Those phases are linear, but the response and recovery phases are non-linear. The pandemic comes in a long time. Meanwhile, earthquakes or cyclones usually occur once in a while. Therefore, the responses would be slightly different. A pandemic's transition phase is associated with a disaster's recovery phase (Fakhruddin et al., 2020).

Facing the pandemic is like going through a roller coaster. There is a spiral type. It can be seen in Figure 1. It continued over and over again until the pandemic subsided (Fakhruddin et al., 2020)

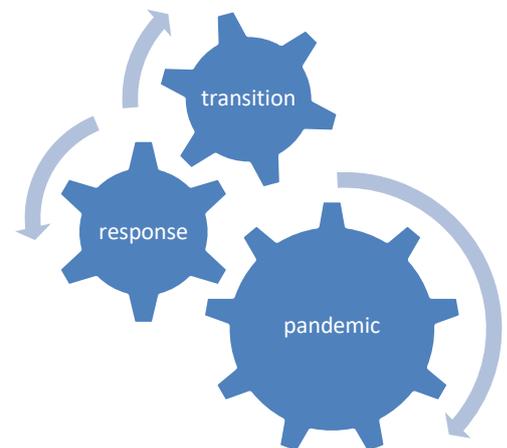


Figure 1. The cycle of the pandemic, response, and transition phase

Alternative Approaches and Policy during the Pandemic

Economic Recovery Strategy after the COVID-19 Pandemic

The mission during the response condition is to save as many lives as possible. Communication policy is a critical part of fighting the COVID-19 pandemic. Vaccination cannot be ready in a short time in the early stages, therefore public health mitigation, such as lockdowns and social distancing become very important. This policy implies to the vulnerable population and the public in general. Therefore, the dissemination of information is very essential. It must be quick, valid, and reliable (Fakhruddin et al., 2020).

Effective responses during the COVID-19 pandemic are as follows (Fakhruddin et al., 2020):

- collaborative structures
- well-developed communication
- modern information system
- strong community
- advanced and reliable technologies
- evidence-based practice for decision making
- hygiene practice
- hospital infection control
- reactivating temporary hospital
- transparent communication and policy for public
- building strong support systems during the COVID-19 pandemic
- fast and valid public health measures.

Ineffective responses during the COVID-19 pandemic were (Fakhruddin et al., 2020):

- bureaucratic structures
- bad information system
- bad communication technologies
- inadequate public health measurements

- unpractical dissemination of information
- poor technology
- fragmented communication
- misinformation
- public mistrust
- weak community support
- lack of collaboration
- bad data management
- lack of standardisation
- lack of personal protective equipment
- lack of hygiene practice
- lack of epidemiological comprehensive understanding process
- lack of technology contact tracing

Effective response and recovery phases during the COVID-19 pandemic need the coordination of many factors in multidisciplinary sectors at a variable time. The scales of coordination must be in (Fakhruddin et al., 2020):

- local/community
- regional/state
- national
- international/global

The organizations for collaboration during the COVID-19 pandemic are started in academia/educational institutes, private sectors, no government, and government organizations. The sectors related here are health, infrastructure, ecology, economics, human science, and politics. Meanwhile, the strategy in every sector can be developed as follows (Fakhruddin et al., 2020):

- assessment and analysis
- risk assessment
- resource mobilization
- information
- monitoring

- review
- evaluation

The strategies above require extra effort. It is effective in alleviating the COVID-19 pandemic. It has been implemented in China and South Korea. Wide-scale testing for screening is very useful (Fakhruddin et al., 2020).

If many countries do multiple aspects of effective responses, the COVID-19 pandemic will very soon subside. Vaccination speed up the recovery phase for economic growth. However, policies for recovery will be slightly different among countries. Restarting trade, services, and manufacturing will enhance the recovery phase of the economy (Fakhruddin et al., 2020).

Considerations for Recovery Transitioning

After the vaccination is found, there will be a new endemic disease. It will change human society. The reaction of stakeholders due to the COVID-19 pandemic can be positive or negative. It depends on the risks, control, and decision-making. Therefore, policy consideration is important (Fakhruddin et al., 2020).

Big databases can be used as basic for tracing, testing, and monitoring. Government and non-government organizations can work together to fight against the COVID-19 pandemic. Interdisciplinary sectors are used, such as medical, public health, research, development, diplomacy, big data, biomedical, social science, artificial

intelligence, information technology, ecology, statistics, biotechnology, meteorology, etc. They are built to integrate the cycle of preparation, prevention, response, and recovery (Fakhruddin et al., 2020).

Build Recovery

There are international policy frameworks such as the Sendai Framework, Sustainable Development Goals, and climate change agreements. These policies are agreed upon by the impacted countries. They are also already implemented in many domestic legislations. Building recovery around the frameworks can give greater cohesion among members who are in different conditions during the pandemic (Fakhruddin et al., 2020).

Invest Adequately for Preparation

Some countries reduce the funding for public healthcare systems. They focus on biological observation. However, the public healthcare systems are essential to managing the COVID-19 pandemic, and they cannot be abandoned at all. Governments and global organizations must use the opportunity to invest in health measures to ensure future viruses or any biological threats can be identified early (Fakhruddin et al., 2020).

Investment in Multi-sector Planning

The pandemic causes risks in various sectors, such as public transport, agriculture, logistics, security, and finance. A tiny and lethal pathogen causes a total lockdown. A new pathogen has unique and

unknown specifications. The response related to a new pathogen is usually trial and error based. Therefore, the pandemic response has to be a holistic and comprehensive response. Multi-sector planning with representatives from various sectors can increase preparedness for decision-making complex in such complicated situations (Fakhruddin et al., 2020).

Strengthen International Collaboration

International collaboration and convention have to be considered and strengthened for the COVID-19 pandemic management. Leadership, financial support, and policy must come from established organizations such as the Asian Development Bank, the World Bank, United Nations, and groupings (the G20 and G7). Those groups can give financial support and resources to developing countries. Strengthening the research and funding in epidemiology, laboratory, and public health measurement in low- and middle-income countries is critical to fighting against any pandemic in the future (Fakhruddin et al., 2020).

Address Potential Disparity in the Management Cycle

The different stages in one region or country need to be taken into consideration in the management cycle. The same principles can be applied, although those countries are in different stages of crisis phases. However, sometimes one country is attacked by several types of disasters at a time. Therefore, it is essential to make plans

and policies for recovery actions (Fakhruddin et al., 2020).

Design a Suitable Information and Risk Communication System.

Pandemic situations are scary and uncertain. People will easily get confused and mistrusted. Therefore, misinformation, conflict, and hoax must be prevented. It can be done through an appropriate information system. Fake information is more easily spread than the coronavirus. Government must give extra effort to the central public health system in spreading valid and reliable information. It is very essential for effective recovery in the economy (Fakhruddin et al., 2020)

Design a Legal Data-Sharing System

Data is privacy. The use of data is essential for contact tracing. A system must be used in a fast and direct way (Fakhruddin et al., 2020).

Learn Lessons for our Changing Climate

The COVID-19 pandemic is an opportunity for climate change. It has a large scale. The global impacts on the economy are long-term. The global community and every country must see the COVID-19 pandemic as a lesson to ensure better preparation for the next climate change or disaster (Fakhruddin et al., 2020).

Ecosystem Services (ESs) and Sustainable Development Goals (SDGs)

Although there are negative consequences of COVID-19, the lockdown has given nature a short time to be better.

However, there is an emergency need to speed up economic growth. The economic recovery may affect optimizing the relationship between ecosystems and humans. Therefore, ecosystem service is a bridge to Sustainable Development Goals (SDGs) success. Integration ecosystem and Sustainable Development Goals (SDGs) are important to enhance the resilience of roadmap achievement (Yin et al., 2021).

Increasing and enhancing healthcare systems are also essential. Ensuring resource, supply, demand, and flow of ecosystem services are needed to implement Sustainable Development Goals smoothly. Managing financial and energy problems after the COVID-19 pandemic can be done by promoting synergies and addressing multidimensional aspects (Yin et al., 2021).

Ecosystem services connect humans and nature, while Sustainable Development Goals coordinate the development between humans and nature. However, ecosystem services and Sustainable Development Goals are changed due to pandemics, climate changes, or population growth. We must integrate ecosystem services into socio-economic development to speed recovery. The virus usually lives in degraded ecosystems. Therefore, maintaining good ecosystem services can speed up the recovery process from the COVID-19 pandemic. We must promote human-nature harmony to achieve Sustainable Development Goals. It can be done through local community efforts, ecosystem services

accounting, and ecosystem restoration (Yin et al., 2021).

Integrate Ecosystem Services Accounting into Socio-Economic Recovery and Development

Ecosystem services accounting can improve socio-economic growth. Ecosystem services related to fertile soil, a stable climate, and clean water, a stable climate. Improving ecosystem service quality will enhance long-term socio-economic development. Restoration planning must also consider the specific conditions of each ecosystem (Yin et al., 2021).

The Government Roles in Economic Recovery

There are some issues regarding the government/states' roles in the economic recovery during the COVID-19 pandemic. The issues are how the government roles in the ownership and organization for business and economic flow. Public expenditures are important in avoiding recessions. Social expenditures are also associated with the flow of the economy. However, it reached a lower level during the COVID-19 pandemic (Shipton et al., 2021).

The Essentials of Economy

The economy is a designated system by law, institutions, regulations, society, and public policy. The economic decision-making and power are somehow not fully democratic. In the Anglo-American type of capitalism, there is deregulation. Capital ownership has a disproportionate influence

on decision-making in the economic sectors. This condition makes unequal and undemocratic economic power. However, the Scandinavian type of capitalism involves a more democratic condition in economics. This type of capitalism emphasizes hierarchies in making decisions (Shipton et al., 2021).

Economic democracy guarantees the right to participate in economics, the right to govern own labor, and the right to involve in the decision-making process in the economic sectors. Planning in economic democracy must be done based on budgeting, preexisting conditions, and income quality (Shipton et al., 2021).

D. CONCLUSION

The strategies for recovering the economy after the COVID-19 pandemic comprise a wide range of recovery sector efforts because it is important to develop all of the sectors in order to gain speedy economic recovery. All of the efforts must be done simultaneously. The efforts are focused on increasing efficiency, reducing costs, ensuring safety, and minimizing the risks of transmission. Strategies in recovery are divided into some sectors such as health care, infrastructure for digital marketing (electricity and broadband internet), investment (cryptocurrency, stock market, assets), also business (tourism and transportation, informal economy sector, supply chain, and fuel). The recovery would take at least three years. It depends on the specific conditions of each country.

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