

Implementation of River Restoration Policy



GROUP 5

POLICY GAP

34 → JOHOR
PENANG
SELANGOR

DEAD RIVERS FROM 672 RIVERS



DOES ENVIRONMENTAL QUALITY (INDUSTRIAL EFFLUENT) REGULATION 2009 SOLVE THE PROBLEM?

THE NUMBER OF FACTORIES INCREASED DRASTICALLY, RIVER COULD NOT DILUTE THE WASTE

POLICY SOLUTIONS

- DATA TRANSPARENCY
- BOTTOM-UP APPROACH
- INITIATE "ECOLOGY RESTORATION OF RIVER"

EXAMPLE OF IMPLEMENTATION



BEFORE

AFTER

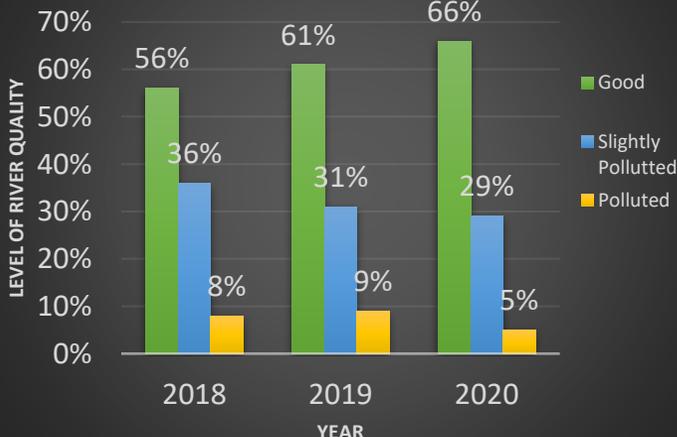


POLICY CRITERIA

- RELOCATION OF FACTORIES ❌
- WASTE WATER TREATMENT ❌
- RIVER RESTORATION ✅

NUMBER OF POLLUTED RIVER

River Water Quality Status



EXAMPLE OF THE RIVER



📍 PASIR GUDANG

POLICY RECOMMENDATION & POTENTIAL IMPACT

- POLICY RECOMMENDATION: RIVER RESTORATION POLICY
- POLICY IMPACT: LOWER DEAD RIVERS

BETTER COMMUNITY OUTREACH | IMPROVE DECISION MAKING IN POLICY MAKING



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POLICY BRIEF

Implementation of Industry Effluent Trade

GROUP 5

Name of Group Members (*Nama ahli kumpulan*):

1. Ang Yi Heng (UTP)
2. Muhammad Haiqal Hakim Mohd Saiful (UTP)
3. Haarinesh a/l Selvaraju (UTP)
4. Bacquerell Dau (UTP)

Name of Mentors (*Nama mentor*):

1. Dr. Chong Kok Boon
2. Professor Dr. Agamutu a/l Pariatamby

ABSTRACT

Industrial effluent is the cause of pollution in the most polluted rivers in Malaysia. Environment Quality (Industrial Effluent) Regulation 2009 is the act that regulated the discharge of effluent with certain parameters. However, the acceptable conditions for discharge of industrial effluent are higher than the National Water Quality Standards. The regulations are drafted in such a way because the river can dilute the waste in 10 times. However, the increasing number of factories over the year increase the volume and the concentration of waste leading to the pollution of river, even though all factories obey to the regulation. To reduce the rate of the poll the union, the government should consider the volume of wastewater produced by the industries in a river to make sure the total effluent waste produced in within lithe it. This can be done by implementing effluent emission trade to the companies who are involved in releasing wastewater to the river. Under emission trade, each factory that require to release effluent into the river must buy the emission trade for that river according to their demand. The local government can quantify the acceptable pollutant and package it into portion. The price of each emission trade should be priced differently according to the pollution level of each river. By implementing emission trade, it encourages factories to look for another suitable location to set up their factories. It avoids excessive emission in a particular area. The extra cost for emission will also encourage factories to invest in wastewater treatment which will benefit to the macro environment. The earnings from emission trading by the local government can be benefitted by funding in river cleaning activities. The proposed policy is expected to promote a more sustainable environment in the river as it reserves clean water resources. It also avoids river pollution by limiting the largest source of pollutant which is industrial effluent.

PART 1: POLICY GAP

In March 2019, toxic pollution in Sungai Kim Kim resulted in over 4,000 people falling ill, which also saw the temporary closure of 111 schools in the Pasir Gudang district (Devi,2021). River pollution is not a new problem in Malaysia and it has seriously affected the public health and the daily lifestyle of the citizens. According to the Environment Quality Report 2020, the river pollution is mostly caused by the sewage or effluent from agro-based and manufacturing industries, animal farming and domestic sewage and improper earthworks and land clearing activities. The good news is, river pollution can be reversed. The Department of Environment has conducted the test in 672 rivers in Malaysia. They found that out of the 672 rivers monitored, 443(66%) showed good water quality, 195 (29%) were slightly polluted while 34 (5%) were polluted. The report showed an improvement after 2019 where 61% showed good water quality, 31% were slightly polluted and 9% were polluted on the same river and the pollution is decreasing in 1 year time (Ministry of Environment and Water, 2020). It is because, in 18 March 2020, Malaysia Government has rolled out the Movement Control Order(MCO) which requiring closure of all businesses except those providing essential services. Hence, it is proven that the river pollution issue in Malaysia can be solved, if we implement a policy on the industrial activities.

Industrial effluent is the cause of pollution in the most polluted rivers in Malaysia. Environment Quality (Industrial Effluent) Regulation 2009 is the act that regulated the discharge of effluent with certain parameters. However, the acceptable conditions for discharge of industrial effluent are higher than the National Water Quality Standards. The regulations are drafted in such a way because the river can dilute the waste 10 times. However, the increasing number of factories over the year increases the volume and the concentration of waste leading to the pollution of the river, even though all factories obey the regulation. To reduce the rate of pollution, the government should consider the volume of wastewater produced by the industries in a river to make sure the total effluent waste produced is within the limit.

PART 2: POLICY SOLUTIONS

In order to reduce the rate of river pollution in Malaysia due to wastewater from industries, the government should implement an effluent emission trade for the companies who are involved in releasing wastewater into the river. Each factory that needs to release any wastewater must buy the emission trade credit of that river according to their demand. The local authority can quantify and package the permitted pollutant into portions. This will result in the different prices of emission trade depending on the level of pollution in each river.

Factories are needed to relocate to another river if the companies did not have any emission trade credit. The revocation period is two years after the implementation of the policy or after the termination of the credit. If any of the companies did not relocate, the government has the right to sue them as it is considered illegal to release the pollution into the river. The purpose of this implementation is to avoid any excessive emission in a particular area environment will be more friendly as the amount of wastewater released is decreased.

By introducing emission trading, it will encourage factories to invest in wastewater treatment. New technology can be found in research in effort to reduce wastewater emissions. The increased economy will strive along with the increased number of vast investments to a greener environment. It benefits society in all aspects of life from new job opportunities to environment-friendly.

The government is encouraged to give incentives to the companies as the stakeholders will fully support this policy. The earnings from emission trading by the local government can be benefitted by funding in river cleaning activities and social awareness. The education of the society regarding river pollution can be increased by using this fund. Thus, this policy will have a strong chance to succeed as the Malaysian community will see the prospect future.

PART 3: POLICY CRITERIA

Policy Gaps	Policy Option 1	Policy Option 2	Policy Option 3
Problem: How to reduce the rate of river pollutions in Malaysia due to industries?	Implements effluent emission trade to companies involved	Relocate factories evenly across all rivers in Malaysia	Encourage factories to invest in wastewater treatment
Criteria 1: Political	The government needs to give incentives to attract stakeholders	Yes, government needs to discuss about the factory's location across Malaysia	Potentially yes, government should encourage factories to treat their waste
Criteria 2: Economic	Might lose some stakeholders as some not willing to pay more	More stable across nations	Increases as factories need to invest more on wastewater treatment
Criteria 3: Technological	Not really	Can reach every part of Malaysia	More advance since factories are required to treat the wastewater
Criteria 4: Sociological	Create awareness in public	Develops new areas and create more jobs	Benefits those who live to make ends meet by the rivers
Criteria 5: Environmental	Very good to the environment as it reduces the amount of wastewater released.	Not really as need to clear more lands to locate the factories	Environmentally friendly decision
Criteria 6: Legal	Potentially yes, need to update the laws	Not yet, but soon	Yes
Recommend?	Yes	Need further evaluation	Yes

We are using 6 criteria's: Political, economic, technological, sociological, environmental, legal

PART 4: POLICY RECOMMENDATION & POTENTIAL IMPACT

The main objective of the policy option is to relocate the factories and avoid the high concentration of waste released to the same river at the same river. The policy recommendation is to carry out a long-term plan by implementing the emission trade on industrial effluents. In this way, each type of pollutant, for example, organic waste, heavy metal, and chemicals is divided into portions according to the National Water Quality Standard and the fact that our river can dilute the waste by 10 times. Each portion of waste can be priced at a relatively affordable rate and sold to the company that register to the local government. The credits can be freely traded in the market according to demand. After the policy is implemented, the companies that need to release effluents waste but do not have credit are given a grace period of 2 years to relocate to a new location. The incentive should be given for the company which relocates their site. After the grace period, factories which caught releasing waste excessive of their permit is considered illegal and will be sued by the agencies.

The main beneficiary of the policy is the citizen of the country. It reduces the risk of few types of fatal deceases for the residents near the river for instance cholera, gastroenteritis and damage to the nervous system which threatened the lives of children. It is effective to reduce the cost of medication.

Malaysia in a country where gifted with precious natural resource. It is proven that the river can be recovered after the operation of the factories is cut down. River is a prominent habitat for certain species and also the source of income for a citizen of Malaysia. Those are important agricultural tourism spot which is one of the attractions in Malaysia. It can effectively increase the income of rural area citizen.

Furthermore, income inequality is one of the long last problems in Malaysia. By encouraging the relocation of factories, we are redistributing the wealth across different area of Malaysia. The factories will search for another strategic area for example Sarawak where they are having excessive power supply. It can create job opportunities to the locals and promote the distribution of wealth.

The policy needed collaboration between several key stakeholders in Malaysia. The Minister of Environment and Water (KASA) shall lead the policy, keep the record for each factory involved, carry out testing for a certain period, and education to the public. It also involves the Ministry of Finance for budgeting the incentive given to the factories.

REFERENCE

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APPENDICES

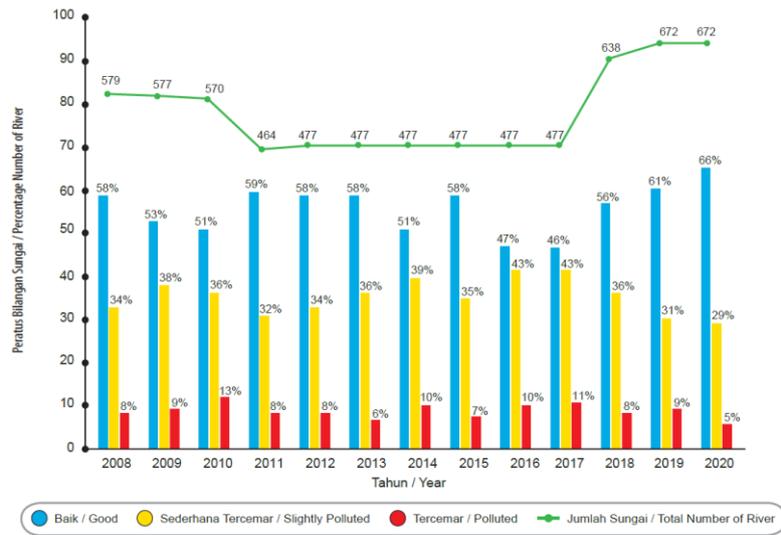


Figure 1: River Water Quality Trend, 2008-2020 (Adopted from Environment Quality Report 2020)