

THE ENVIRONMENTAL AND SOCIAL IMPACTS OF INDUSTRIALIZATION: LESSON FROM CENTRAL JAVA

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ABSTRACT

In many developing countries, industrialization is considered as the best way to achieve the economic progress. The general pattern of long-term development of Indonesia's fifth five year development plan is expected to bring about fundamental changes in the economic structure from agriculture to industrialization. A policy of encouraging industrialization is considered as a means of stimulating the national rate of economic growth, providing employment opportunities and raising the general standard of living of the poor. To support this policy, each municipal government is encouraged to build industrial zones intended to attract and facilitate foreign and domestic investors. This research is to identify the environmental and social impacts of industrialization by using two different places of industrial zone as case studies. The impacts studied include environments, socio-economic and socio-cultural.

Industrialization as a strategy for economic development has been successful in terms of its contribution to improve Gross Domestic Product (GDP). The industrial sector could create employment opportunities to a particular segment of the population: young, single females. Industrial activities do not create much value added for local people. In fact, local people are adversely affected, threatened by job loss and decrease of daily income.

The environmental consequences emerged include floods, lack of clean water, water pollution, air pollution, odour, dust and noise. The indication of social impact is weakening community ties. The household associations in impacted villages are less likely to conduct regular meetings as was previously was the habit.

Key words: industry-growth-environmental and social consequences

I. Introduction

In many developing countries, industrialization is considered a sister to modernization. Both are introduced and

promoted at approximately the same time. Industrialization is, then, considered as a supporting symbol for modernization in addition to becoming a way to alleviate poverty. As Hainsworth (1992: 51) notes,

industrialization is the only means to escape neo-colonial dependency and to graduate towards the status of modern, independent nation. The general pattern of long-term development of Indonesia's fifth five year development plan, called "Pelita" (1989-1994), was expected to bring about fundamental changes in the economic structure from agriculture to industrialization (Department of Information, 1991: 71). At five year development plan, stage two (PJPT II), industrialization has been more prioritized to achieve high economic growth. Since 1984, the industrialization has been oriented toward export. A policy of encouraging industrialization is considered as a means of stimulating the national rate of economic growth, providing employment opportunities and raising the general standard of living of the poor. To support this policy, each municipal government is encouraged to build industrial zones intended to attract and facilitate foreign and domestic investors. The Government Regulation no. 20 of 1994 facilitates more to foreign investment. It is believed that this program and policy will stimulate economic growth and also create business and employment opportunities. This paper deals with the impact of industrialization on the local community. The case studies are taken from two different places in Central Java.

II. Contribution to GDP

Industrialization as a strategy for economic development has been successful in terms of its contribution to Gross Domestic Product. The growth rate of the industrial sector from Pelita I to Pelita IV was respectively 12.9 %, 13.7 %, 12.9 %

and 13.2 %. These are above the national growth rate. The contribution of industrial sector to GDP in these periods were 8.9 %, 11.5 %, 13.7 % and 18.4 % (Department of Industry, 1990: 1). At Pelita V, the contribution was almost 25 %. Owing to such statistical success, Indonesia has been categorized as the seventh Tiger of Asia and a newly-industrialized country (NIC).

In Central Java, a province with the least foreign investment as compared to the special territory of Jakarta (DKI), West Java and East Java, the contribution of agricultural sector to regional GDP decreased from 30.61 % in 1986 to 29.13 % in 1990. Whereas the contribution of industrial sector to regional GDP increased from 21.23 % in 1986 to 23.61 % in 1990. Semarang, as the growth centre, contributed 24.94% of the region's total industrial growth (P.T Merdeka Wirastama, 1990).

III. Minimum Physical Need

The industrial sector could create employment opportunities. However, the number of people recruited in factory jobs is small compared to the number of unemployed people. According to Wolf (1986), employment opportunities are also limited to a particular segment of the population: young, single and females. In terms of wages, Wolf's research in Ungaran suggests that the contribution of factory worker's wages to family income is very little. The commuting worker only contributes 2.5 %, the migrant worker 6.3 % and the local worker 17.5 %. Wolf concludes that poor families sending their daughters to work in the factories subsidize the industrial development. Ironically, the

low wages are always emphasized as a comparative advantage to the foreign investors. Weber (1992) suggests that the present minimum wages level cannot meet the minimum physical need of the workers. In Jakarta, the minimum wage only fulfils 31 % of minimum physical need, in West Java only 15 %. Industrial workers are therefore categorized as the poorest of the poor group (Suara Merdeka, June 7, 1992).

Wolf also concludes that export oriented industries have recruited large number of workers. This forces of local workers are dependent on global markets. The workers' fate (the wage levels, other benefits and job security) is determined by the fluctuation of the international market.

IV. Local Value Added

My findings from a field research in Genuk industrial zone in Semarang show that the industrial activities do not create much value added for local people. In fact, local people are adversely affected, threatened by job loss and decrease of daily income.

The area used for industrial zone is 800 hectares consisting of dry-rice fields (non-irrigated rice land) and pond aquaculture (tambak). These are owned by a small number of people who represent only 5.1 % of the total households in the impacted villages. At the first stage of compensation, the owners benefitted from selling their fields and pond-aquaculture, because the price given was relatively higher than the market price. Few of them could then buy land and pond-aquaculture in neighbouring sub-districts in Demak regency. However, many local workers lost

their jobs and some others continue to be threatened of losing their jobs. They used to plough, seed, plant and harvest in the rice-field and digg, restock, look after and harvest in the pond aquaculture. A pond-aquaculture requires two or three local workers, whereas an agriculture sector needs at least two male workers and dozen female workers for planting and harvesting. Currently, the owners of pond-aquaculture seem to be no longer making a profit because the price of pond-aquaculture elsewhere is as expensive as in their own area. They could not afford to buy pond-aquaculture of the same quality elsewhere. In addition, the production of their fish-pond has declined due to factory pollution.

Informal sectors such as room renting for in-migrants workers and food selling are the indirect positive impact resulting from industrial activities. However, only rich people having suitable rooms for rent could reap a benefit from this activity. Only a few food stalls owned by local people operate in the environs of the industrials area because most factories provide meal for their workers.

Local workers whose skills are only limited to agriculture and pond-aquaculture production are not prepared to enter the factory jobs. If they are accepted as employees in the factories, their work is mainly in low level jobs which pay Rp 1,600 to Rp 2,000 per day (field research data in 1992). These are below the wages they earned from pond aquaculture and rice-fields (ranging from Rp 3,000 to Rp 5,000 per day). The pond-aquaculture offers all year round jobs, whereas the agricultural sector offers only seasonal jobs. Most males then prefer to work in construction which offers better wages (Rp 3,500 per day plus meals). Thus, only local

female workers are taking the factory jobs. However, local workers are less likely to get jobs because factory owners prefer to have in-migrant workers who are considered hard workers, less absent and more dedicated.

V. Environmental Consequences

There are many environmental consequences experienced by local people caused by industrial activities in their area. These consequences include floods, lack of clean water, water pollution, air pollution, odour, dust and noise.

Hundreds of factories in the industrial zone I studied spread out into four villages. Two neighbourhoods (RW) of a village currently suffers from annual flood. Rain water has been diverted into rice fields and then flow into the sea. Now, the rice-fields are gone and they have been replaced by factory buildings, roads and other infrastructures. Rain water can no longer flow to the sea and instead flows into the residential areas. People in a neighbourhood now must help each other to elevate their homes from the flood waters.

Most factories operate deep wells. These have dried out village wells where people used to rely on clean water. Currently, they have to buy clean water from their neighbours or take the water provided by some factories. In every neighbourhood association, there is one or two rich persons operating deep wells and selling the clean water to people of the village. Again, rich people always benefit from this situation.

Based on the study results undertaken by a number of consulting firms, four rivers surrounding the industrial zone and the residential areas have been polluted. Two out of four rivers are no longer habitable by fish. Pond-aquaculture production especially that of shrimp has declined over the last five years. Some chemical parameters like Cu, Zn, Pb, Sulfida, NH₃-N, NO₂-N, B.O.D and C.O.D exceed environmental standards. Local residents are further affected by water pollution which comes from cold storage and soft drink factories. Level of dust particles are also higher than the environmental standard. Studies conducted by some consulting firms show that level of dust particles varies from 0,1293 mg/m³ air to 0,3265 mg/m³ air, whereas the environmental standard is 0,26 mg/m³ air. Local people also suffer from odours produced by tannery factories. The noise level is currently 60 dB-A, exceeding the environmental standard which is 50-62 dB-A. Noise emanating from a saw mill and a steel company disrupt the daily lives of local people and disturb the religious activities in the mosques.

VI. Social Implications:

The number of in-migrant workers living in Genuk Industrial zone is quite significant. In each household, there are at least twenty in-migrant workers, as compared to sixty to seventy total household. In some household associations, the number of in-migrant workers have surpassed the number of households. There are two consequences of the great number of in-migrant workers. Firstly, the in-

migrant workers increase the demand for water which is already in short supply; thus, they deteriorate the quantity and to some extent the quality of natural environment. Secondly, in-migrant workers, as quoted from the executive member of neighbourhood associations, cause social and cultural conflicts. Socially, in-migrant workers have more access to work in the factories because of their skills. This leads to rising jealousy from local people. Culturally, the behaviour of in-migrants quite often is not suited to local customs. Another indication of weakening community ties is that the household associations in impacted villages are likely to conduct less frequently regular meetings previously was as the habit.

VII. Concluding Remark

The industrial sector has contributed significantly to increase Regional Gross Domestic Product. This sector also has created low wage employment opportunities particularly for female workers. As a return for causing village wells to dry out, some factories also provide clean water for local people. On the other hand, factories cause unemployment and threaten the head of households, the principal earner of the family, to lose their jobs. Male workers then transfer to work on construction sites where better wages are offered. Local people also experience adversely environmental impact such as floods, water and air pollution, odours, dust and noise, and social consequences. Some people find their areas are no longer a good place to live due to odour, dust and noise. However, they do not have any choice. Moving out results in losing access to work.

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