Collective Action

In the context of Industries and Environment, 'Collective Action' usually refers to the coming together of industries to take measures to minimize their negative impact on the environment. The term can also be used in a broader context, to refer to:

- collective action by a coalition of people affected by environmental impact of industries, or
- bargaining between a coalition of people and a coalition of industries over managing of their shared environment

Case: Nandesari Industrial Estate, India

The Nandesari Industrial Estate is located 20 km north of Vadodra city in India's western Gujarat state, a traditional industrial hub with several ports along its long coastline with the Arabian Sea. Since the early 1960s, it has been home to small industries that produce organic and inorganic fertilizers and pharmaceuticals. For a long time, the Mini and Mahi Rivers served as excellent disposal agents for these industries. However, with time, the industrial hub grew as more and more industrial units sprung up. By the early 1980s, the level of effluents in the two rivers increased to high levels.

This created friction between the industries and the adjoining communities. So the government built an effluent channel to divert the industrial effluent flow from the rivers to an estuary away from human settlement. The industries were required to carry out a primary treatment of the effluents in their own treatment plants before disposing them into a secondary treatment unit at the channel. However, individual treatment plants were high-cost and few industries could set up their own. While water quality in the Mini and Mahi rivers improved, wells located 50-200 metres away started showing high levels of total solids, chemical oxygen demand, undesirable compounds, and metals.

One of the chemical industries in Nandesari Industrial Estate, Gujarat India.

To meet with government regulations and to avoid punitive measures that would shut down certain industries and disrupt value chains, a number of industrial units came together. They set up several collective treatment plants, worked out cost-sharing arrangements, and by the late 1990s, even took over management of part of the effluent channel constructed by the government. NGOs, community organizations, and government agencies collaborated with the industrial collective over monitoring of water quality, operation and maintenance. This arrangement continues till date. Water quality in aquifers and streams in the area improved in due course of time.

Incentives for Collective Action

The Nandesari story shows that individual industrial units have some natural incentives to form coalitions and take collective action. At the same time, certain incentives need to be created and strengthened to nurture the natural incentives.

Sustainability: Most industrial units have a natural incentive to be operational over a long term. The sustainability of their operations depends upon the sustainability of their natural environment, and harmony in the relationship with communities they share their natural environment with (and perhaps draw labour from). To ensure sustainability on both these fronts, industries have a natural incentive to invest in minimizing their footprint on the land and water resources they utilize.

Economies of Scale: When industries implement pollution control measures as a coalition, the measures can acquire a large-enough scale which makes them more effective and lowers the cost of the measures incurred per industrial unit.

Mutual Expectations: If individual industrial units do not expect mutual cooperation, there will be a tendency to pull out of collective action. By setting common industrial standards for pollution management, public authorities create shared targets and common objectives. This creates an incentive for mutual cooperation.

Institutional Arrangement: Invariably, partners within a coalition vary in terms of size, share of pollution, and capacity to contribute towards the joint action. Fair and equitable institutional arrangements ensure a fair sharing of costs and benefits that factor in these differences.

Agents	Costs	Benefits
Industries: Without Collective Action to Curb Environmental Impact	▪ Costs of unilateral treatment	N/A
Industries: With Collective Action to Curb Environmental Impact	▪ Costs of primary treatment (within industry) and part of costs of secondary treatment (at the effluent channel)	▪ Savings in Cost from Economies of Scale
Communities and NGOs	▪ Transaction Costs of Collective Action (such as costs of forming a consumer forum) ▪ Costs of Legal Action	▪ Costs of contracting water-borne diseases avoided ▪ Cost of drinking water supply lowered ▪ Soil quality degradation improved ▪ Fish stock quality improved
Government	▪ Costs of creating incentives for collective action by industrial units: Financial Incentives/ Technical Know-How ▪ Costs of enforcing legal threats and penalties on defaulters	▪ Savings in costs of enforcement and policing
Natural ecosystem	N/A	▪ Preserved Estuary ▪ Soil Conservation ▪ Regeneration of marine life in rivers

Overview of costs and benefits of collective action organized per category

References & further reading

Articles

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