

Implementation of Environmental Policies in Yokkaichi, Japan:

What are the Lessons to the Development Literature?

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Abstract

Developing countries have a series of political, financial and institutional obstacles to effective environmental policy implementation. Investigating the institutional arrangements that overcame such obstacles in Japan can provide some lessons to understand policy implementation in developing countries. This will shed light on how developing countries can use the Japanese experience to build institutional arrangements for implementing environmental policy effectively.

I am particularly interested in understanding how and why local Japanese governments have implemented environmental policies and what factors have contributed to good or bad outcomes in the implementation process. In 1960s and 1970s, the country has undergone an intense process of social and economic development. In this process, several environmental problems came out, but Japan could react and implement policies to overcome many of those problems.

This article aims at providing lessons to developing countries from the implementation of environmental policies in a particular case in Japan, the region of Yokkaichi in Mie Prefecture. This case is interesting because there was a fundamental role of local governments in the success of policy implementation. Parts of the development literature in academia and practice have portrayed the debates on policy implementation in a simplistic way, highlighting the need of decentralization, participation and public-private partnership. Even though those issues may be important to improve policy process in implementation, they are often posed without understanding the details of the process.

1. Introduction

Implementation of public policies still remains one of the key obstacles to improving the quality of life and the environment in many developing countries. The answers to *how we can make implementation mechanisms more effective understanding the experiences of one country like Japan* are the object of this

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article. There are few reasons for choosing the study of environmental policies in Japan, particularly local policies.

First, the Japanese experience can be valuable to design and understand policy implementation in developing countries. Japan developed in a fast pace between 1950s and 1990s. After the Second World War, the country was devastated and had social and economic conditions even worse than many of the developing countries today. However, it could overcome the adversities and improve significantly its economic and social conditions to become one of the world's economic powers. Later, many critical environmental problems were managed as well. The implementation of public policies in diverse spheres was the key for this success. Many developing countries have the same problems Japan had in the past, so how they can learn from the Japanese experience?

Second, particularly in the field of environmental policy, Japan could develop a quite effective mechanism of policy implementation in some areas (OECD 2002). During the economic boom of the 1950s and 1960s, the country, like many others in the developed world, was not aware of the consequences and did not take environmental issues much into consideration as it developed industrially. As a result, Japan presented one of the worst environmental records ever by any country, having been place of some of the most terrible environmental related diseases such as Minamata Disease, Itai-Itai-Byo Disease and Yokkaichi Asthma. However, since the 1960s, the local and national governments have adopted several policies to manage environmental problems. As a result, Japan has obtained significant improvements in diverse spheres such as air pollution, despite the need to advance in many others, such as global warming. How was it possible? Why the improvements in some areas and not in others? What explains improvement?

Third, local governments have been fundamental to the relative success in environmental policy implementation in Japan (Broadbent 1999). In some cases, local governments have been innovative and progressive to introduce some successful environmental policies that later are adopted by many other localities and even shape national policies. At the same time, in Japan, prefectures and local governments have the responsibility of implementing most of the national policies. So, the success of national policies inevitably depends on the implementation at the local or regional level. What can people interested in international development learn from those experiences?

Finally, Japan, and Yokkaichi in particular, can provide interesting lessons concerning some of the main issues in the recent development literature, such as decentralization, participation and public-private partnership. Some policymakers and academics have place those issues as fundamental to improve efficiency, effectiveness and accountability of governments (Rietbergen-McCracken 1996). However,

the case shows that there are certain shortcomings in the analyses.

The article starts with a revision of the debates in the literature on policy implementation. It continues with the description of the case in Yokkaichi. The text finalizes with an analysis of the lessons from the case and a brief final note.

2. Policy Implementation in Developing Countries

One of the main problems of achieving results in public policies in developing countries is policy implementation. Policy analysis has tended to focus on policymaking, or the process of policy conception and design. The idea is that what is important is to design a good policy, get political support to pass legislation and create a plan to make it happen. Many policymakers have assumed that implementation is automatic, and being so, it is secondary to policymaking. They have also separated policymaking from policy implementation.

Even though policymaking may be fundamental in the policy process, policy implementation has been the main obstacle to achieve good results in public policy in developing countries (Puppim de Oliveira 2002). The history has shown many examples of policies and projects that have had disappointed results or unexpected consequences, such as environmental or social impacts. The large projects financed by the World Bank in the Amazon in the 1970s are good examples of the mismatch between policy conception and actual implementation. Planners previewed the development of the Brazilian Amazon through a set of large infrastructure projects and settlements. After implementation, the result was an unimaginable environmental destruction and social problems (Lutzenberger 1985). Another example, still in Brazil, is the Program for the Clean-up of Guanabara Bay (PDBG) in Rio de Janeiro with the support of the Interamerican Development Bank (IDB) and the Japan Bank for International Cooperation (JBIC). The idea was to create large infrastructure projects to give sanitation to the surroundings of the Bay, similar to the one in Tokyo Bay. Ten years passed since the US\$ 991 million contract has been signed and hundreds of millions of US dollars were spent, but the results have been poor (O Globo 2004).

Scholars were awakened from the lack of attention to the study of implementation by the seminal work of Pressman and Wildavsky (1973). The book pointed that there was almost no serious work on implementation. Several academics have written on implementation since then (Rein & Rabinovitz 1977; Bardach 1977; Berman 1978; Elmore 1979; Najam 1995). However, more than thirty years since the work on Pressman and Wildavsky there is not much consensus on how to study implementation, and the debate has tended to fade away. Even the definition of implementation is debatable with many definitions in the literature. I will present two of them: (i) Rein and Rabinovitz (1977) assume the

“politics of implementation” as “how policies change as they move from administrative guidelines into practice--as:” 1) a declaration of government preferences, 2) mediated by a number of actors who 3) create a circular process characterized by reciprocal power relations and negotiations. (ii) Mazmanian and Sabatier (1983) see implementation as “events and activities that occur after the issuing of authoritative public policy directives, which include both the effort to administer and the substantive impact on people and events.” As shown by these two examples, the post-1973 literature has separated implementation from policymaking, incurring some of the same shortcomings of the pre-1973 literature.

The literature on implementation has evolved through a set of debates or generations (Goggin et al. 1990; Najam 1995). The first generation, just after the publication of the book *Implementation* (Pressman and Wildavsky 1973), tried to call attention for the neglected debate on implementation in the literature and how was important to understand the complex process of implementation, but did not provide many answers to improve implementation. The second generation moved to the establishment of general models with many variables that could explain policy implementation and causalities (Mazmanian and Sabatier 1983; Van Meter and Van Horn 1975), but those models seemed limited in some contexts or were not valid in certain cases. The third was more empirical and qualitative. Its works look at key variables and factors that are important to explain implementation (Goggin et al. 1990; Najam 1995; Grindle 1980). One forth generation has appeared looking at successful cases of implementation (Grindle 1998).

In the field of environmental policy, the literature in developing countries has been productive in analyzing how policies have failed bluntly (Vyas & Reddy 1998; Reich & Bowonder 1998; Ross 1992; Jan 1995; Hardi 1992; Klarer & Francis 1997). Most of those works have contributed to the understanding of why policy implementation has been unsuccessful. However, analyses of failures do not help much policymakers to design effective policies. Fewer studies have shown what factors actually contribute to the good results of policies. The trend to focus on failures has shifted recently. The literature in developing countries has emphasized success cases of policy implementation in the last twenty years (Tendler 1997; Grindle 1998). This recent literature has looked at factors that make certain policies work, even in an institutional environment that would tend to lead to failure. The same trend of analyzing success has happened in the environmental literature (Brinkerhoff 1996; Lopes et al. 1996; Lemos 1998).

There is a parallel set of debates, looking at factors that explain implementation in environmental policy. The obstacles to good policy implementation in developing countries have been described as of the three kinds: lack of political support, lack of financial support and lack of institution capacity

(Puppim de Oliveira 2002). First, environmental policies fail during implementation because environmental issues tend to not have a priority in the policy agenda of developing countries, where economic development is the paramount objective of governments. Second, implementing environmental policies in developing countries fail because there is no money, especially in poor governments, such as parts of Africa (Salih 1999). Governments can even prioritize environment issues in their agendas sometimes, but they do not have the financial resources to implement them in a proper manner. Finally, institutional capacity can be another obstacle to policy implementation. Sometimes, policies have political support and even financial resources, but implementation efforts fail because there is a lack of institutional capacity in the implementing organizations, such as technical capacity or motivation. How these obstacles can be overcome is the debate I want to discuss in this paper.

This article examines how political, financial and institutional obstacles to policy implementation can be overcome in developing countries using the Japanese experience. Several points to improve implementation processes have been proposed by professionals and academia. Decentralization is one of them. There have been efforts by many developing countries to decentralize policy processes (Manor 1999). Since 1970s, several studies were carried out on decentralization and studied the importance of local actors in the development process (Manor 1999; Cheema & Rondinelli 1983; Bennet 1990). Supporters of decentralization have emphasized the advantages of decentralizing, such as increasing efficiency of bureaucracies, improving accountability of governments and making policy debates closer to the people.

Together with decentralization, another recurrent issue in the development literature is participation of the civil society in the development process (Rietbergen-McCracken 1996; Paul 1992). According to some authors, more participation in projects and policies would be good because of several reasons, such as giving people a sense of “ownership” in the process, making them contributing with local information to adjust policies, helping monitoring implementation and pressing governments for more accountability. In the environmental debate, the participation of civil society could press governments to pass more stringent legislation or improve the effectiveness of the enforcement over public and private polluters. In the wave of democratization of many countries since the 1980s, the influence of community groups and non-governmental organizations seems to have grown in some developing countries. They have catalyzed changes in many cases. For example, community groups and progressive officials have pressed for the enforcement of environmental regulations and the clean-up of the Brazilian city of Cubatão, which was one of the most polluted places on Earth in 1970s (Lemos 1998). However, the influence of environmental groups is limited in some cases. NGOs or organized community groups do not exist in many places. Civil society is not independent in some political

regimes. In other cases, there is no organized civil society to uphold debates because there is no interest in certain kind of issues (Ross 1992; Jan 1992; Vyas & Reddy 1998).

Recently, another issue has become important in the development literature: public-private cooperation in the discussion of regulatory issues and partnership for project implementation (PPP). In some cases, public-private cooperation happened to draft environmental legislation, such as the case of the legislation on oil spills in Brazil (Puppim de Oliveira 2003). Also, as many developing countries have adopted rigorous fiscal policies and reduced public investments, the private sector appeared as a source of funding for infrastructure and other projects. The idea is that governments and private sector can cooperate in various aspects for the public good.

In the next sections, I will use the case of Yokkaichi in Japan to illustrate some of the above mentioned debates. Yokkaichi was successful to implement policies to reduce industrial pollution in the 1960s through 1980s. The case is important to get lessons for understanding processes of policy implementation and the role of issues like decentralization, participation and the role of public-private cooperation. These issues will be helpful to think about implementation of environmental policies in developing countries and the role of the same issues. The paper presents a brief description of the case firstly, followed by an analytical discussion over the importance of various factors in the case of Yokkaichi, such as participation, decentralization and public-private partnership.

3. The Case of Yokkaichi

3.1. Research Interest and Methods

Developing countries have a series of political, financial and institutional obstacles to environmental policy implementation (Puppim de Oliveira 2002). Investigating the institutional arrangements that overcame such obstacles in Japan is the object of this empirical research. This will shed light on how developing countries can use the Japanese experience to make institutional arrangements for implementing environmental policy. I am particularly interested in understanding how and why local Japanese governments have implemented environmental policies and what factors have contributed to good or bad outcomes in the implementation process.

For carrying out this research, I selected one case study in Japan where environmental policies have been implemented with relative good results: The City of Yokkaichi in Mie Prefecture. Even though Yokkaichi is a good example of pollution control, and not pollution prevention,¹ the case is interesting for developing countries because it shows how local governments were able to overcome obstacles to policy implementation. I examined how the development process has allowed shifting in

environmental policy and management at the local and the regional level. I analyzed the extent of creation and implementation of these policies in Yokkaichi in order to determine under what conditions and what sort of policy responses are likely to be most effective in certain institutional environments.

The effectiveness of policy implementation depends on how the environmental policy-making process took place in each case. How the policy-making process is promoted depends on several factors such as the actors involved in the process, the kind of alliances these actors form, the initial design of the policy-process and the social-environmental-economic conditions of the case.

In Yokkaichi, I identified the action of several groups of actors in the policy-making process and how they interact. These actors are the local governments, state governments, large and small business, community groups, local NGOs, developers, and other external actors.

The field research consisted of data collection and open-ended interviews during the months of April through August, 2004, when I visited Mie Prefecture six times (Yokkaichi and Tsu, the prefectural capital). Data related to the development and environmental issues in the region were available in the main sources of quantitative and qualitative information such as statistics and reports published by some governmental, non-governmental and private organizations, including the Japanese Ministry of the Environment, Mie prefecture environmental bureau and the International Center for Environmental Technology Transfer (ICETT). For the research, I carried out twenty-one open-ended interviews with some of the actual and former actors in the process of environmental policy-making and implementation in Yokkaichi, such as Yokkaichi city government officials, Mie Prefecture government officials, technical experts from ICETT, university professors and members of NGOs and community groups, as for example leaders from Yokkaichi asthma victims' organization and neighborhood associations.

3.2. Yokkaichi City in Short: The History of a Fight Against Pollution

The city of Yokkaichi is located in Mie Prefecture one hour by train from Nagoya city in Aichi Prefecture. Yokkaichi sites one of prime petrochemical complexes in the country. The industrial zone was built in three stages between 1950s and 1970s. The heavy industrialization brought richness, but had a price paid in environmental and health problems. However, the city could recover from the tremendous environmental problems they had.

Japan industrialized in a large pace after the Second World War. The basis of economic growth was heavy industries, such as steel making, chemical, petrochemical and pulp and paper. The way

industrialization took place was through setting industrial complexes, where plants and infrastructure were built in a partnership among central and local governments and the private sector, especially large conglomerates (Tsuru 1999). In a process of public-private negotiation, those actors set up priority sites for certain kinds of industries based on economic and technical viability and politics. Local governments competed with each other to attract some of those complexes (Broadbent 1999). The selected localities received heavy subsidies from the central government matched by funds of prefectural and municipal governments and investments from the private sector. A strong cooperation happened among private and public sector (Muramatsu 1997; Muramatsu and Iqbal 2001; Nakano 1997).

Yokkaichi was selected as one of the sites for the development of a petrochemical complex. The Ministry of International Trade and Industry (MITI) launched the first stage of the Plan for Petrochemical Industry under the Petrochemical Growth Action Project in 1955 (ICETT 1994). The First Petrochemical Complex of Yokkaichi started operating in 1959. Large corporations participated in the venture, such as the Mitsubishi Group, Showa Sekiyu and Shell Oil. Two other sites for petrochemical plants were developed later on. The Second Petrochemical Complex was set in reclaimed land in 1963 and the Third Complex started operating in 1972.

As in other parts of Japan, the industrialization brought not only economic prosperity, but also problems to the local population (Tsuru 1989). Few years after the inauguration of the first petrochemical plants in Yokkaichi, the first environmental problems arose, such as the smelling fish in Ise Bay, still in the 1950s. The fish caught in the Ise Bay turned useless because of the foul smell, which resulted in a drop in the demand for Yokkaichi fish in the local markets. The sales came down from 17,000 tons to 4,000 tons between 1956 and 1964, and left many fishermen unemployed (ICETT 1994). The cause of the smell was the 350,000 tons of effluents dumped in the sea by the industrial plants. The environmental quality got worse along the years as many other plants started their operations. People complained about noise, odors and deteriorating air and water quality.

The worst was about to come. In the beginning of the 1960s, the population of the district of Isozu next to the first industrial complex suffered from heavy coughing, stinging throats and attacks of asthma. The cases and the symptoms increased like a deadly epidemics, especially affecting the children and elderly. Yokkaichi became known as one of the most critical situations of environmental degradation in Japan. After the research efforts of some experts, the epidemics were linked to the air pollutants from the petrochemical plants, and the disease became famous as the "Yokkaichi Asthma". Population complained and protested against the worsening situation: dirty sea and rivers, contaminated air and smelling fish. People also asked to adequate compensation and treatment for the

victims of pollution, who had no rights when the problems came up. Local governments responded to the dreadful situation by passing and enforcing new regulations, making agreements with the polluters and helping the victims. As a result, the environmental quality of Yokkaichi improved significantly in the 1960s through 1970s (see Figure 1). How they were able to change will be explained below by getting lessons for development literature and practice.

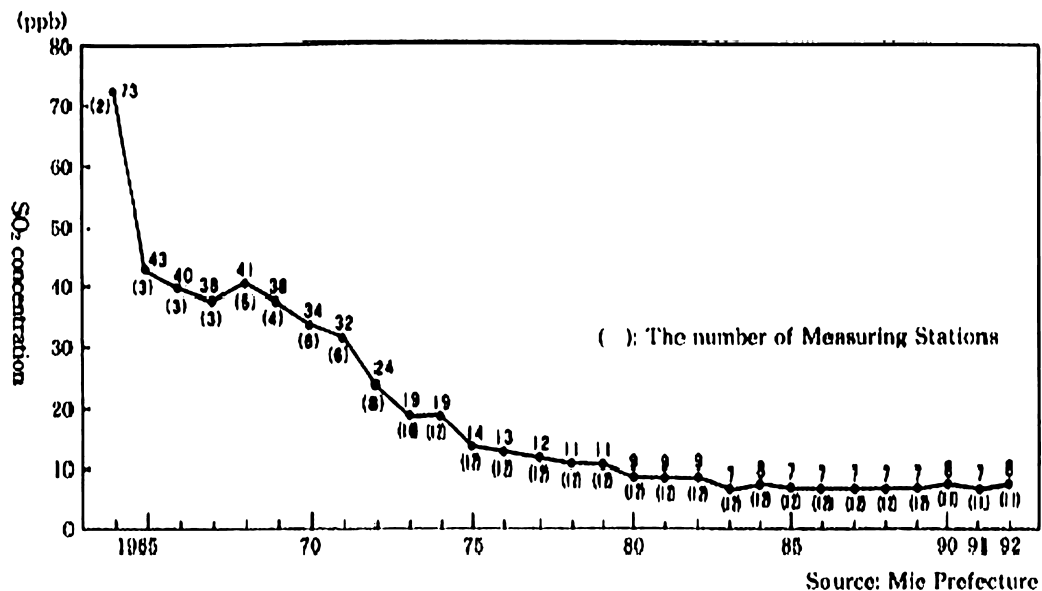


Figure 1 - Changes in SO₂ Average Concentration in Yokkaichi Area over the Years

4. Analysis of the Case: Lessons from Yokkaichi

The case of Yokkaichi city makes an interesting study of environmental policy implementation, and may give some lessons for the development literature. Governments were able to overcome the political, financial and institutional obstacles to reduce environmental pollution in Yokkaichi.

Several points can lead to important lessons. First, there was a strong role of local governments to address the problem through generation of information, regulation, voluntary agreements and subsidies. Second, civic society was very successful in questioning governments and companies, raising public awareness, organizing protests and going to court. Moreover, experts had a fundamental role in mediating conflicts of opinion by giving legitimacy to certain kinds of technical information. Third, there was a close collaboration between the different levels of government, and between governments and companies. This collaboration to find joint consensual solutions, such as making laws, carrying out projects and plans, was crucial to the gradual improvement of the environmental conditions. Finally, there was a large degree of flexibility and gradualism in the implementation

process. Governments could negotiate stringent standards with companies by giving them certain degree of flexibility in time to invest in changing production processes and pollution control. In the following parts, I will examine each of these points.

4.1. Role of Local and Central Governments

In many developing countries, power is concentrated in central governments to manage several aspects of the policy process (Manor 1999). Local governments have marginal roles in defining and implementing policy, especially environmental policy. On the other hand, the fashionable wave of decentralization in the development literature and practice of the last two decades has praised local governments as a panacea of many implementation problems of developing countries (Rondinelli 1981). Even, the neoclassical mainstream literature defends the role of local governments, when governments have to play an unquestionable role to correct, for example, market failures (Friedman 1963). So, “modern” States should be decentralized at all manners. This strong belief on local governments, which also match the politically correct ideology of power to local people and participation, hides some problems in practice. Many decentralized policies fail in developed and developing countries. The case of the Yokkaichi can show some lessons on that and help us to understand the role of local governments.

In the case of Yokkaichi, local governments, both prefectural and city governments, had a fundamental role in spurring change and implementing policy, but they did not act alone. They took advantage of the windows of opportunities (Lowi 1964) in several areas to get political support from the central government and establish their institutional capacity to deal with the pollution problem.

In the beginning of the pollution issue, both Mie prefecture and Yokkaichi city were in a difficult situation. They had fought hard politically at central government level to bring the petrochemical complex to Yokkaichi and authorize the site of the plants. They also had close relations with business leaders. The pollution control problem would lead local governments to change their relations with business and central governments.

In many parts of Japan in the 1950s and 1960s, the problem of industrial pollution grew and local population started to raise their voices in many industrial regions (Barret and Therivel 1991). Central government did not take effective action in the beginning. Actually, the central government had close relations with companies and was reluctant in taking any measure afraid of hurting the growing economy. Powerful local governments, like Osaka and Tokyo, had the strength to take the lead to establish their own regulations to curb industrial pollution still in 1950s, but smaller prefectures did not have much political cloth to deal with big national conglomerates, such as Mitsubishi.

As the situation got critical in the beginning of the 1960s, the congress under pressure from some local politicians and public opinion decided to pass the Smoke and Soot Regulation Law in 1962. This law designated a list of regions of the country as priority places for reduce industrial pollution. Yokkaichi was not included in the first list. However, Mie prefecture and officials in Yokkaichi under pressure from their constituency saw the law as an opportunity to gain political and financial support to cope with the local pollution problem. So, they urged the inclusion of Yokkaichi on the list, which was done after an expert team investigate the case and recognize the seriousness of the problem. In 1967, another law came along, the Basic Law for Environmental Pollution Control. In this case, the prime minister appointed Yokkaichi as a priority region for establishing a plan to control the pollution. These actions of the local governments brought much political support and financial resources from the central government to help to curb the industrial pollution problem, without affecting the good relationship between local governments, and business interests and central governments.

At the same time as national laws were being established, Mie Prefecture and Yokkaichi city created their institutional capacity to manage environmental and health problems. Both established pollution control boards to advise the government on environmental problems. Mie set up the Environmental Pollution Control Department in 1963, which as one of the first prefectural environmental agencies in Japan, even prior to the national environmental agency in 1971 (ICETT 1994). Mie also enacted its own environmental regulation to reinforce and complement national laws, such as the pollution control ordinance of 1968. In 1964, the municipal government of Yokkaichi city established the Pollution Control Department in the Division of Public Sanitation and Hygiene.

There were also several joint actions between governments. Both Yokkaichi and Mie set up an Air Pollution Prevention Council in 1962. In the case of inclusion of Yokkaichi in the priority region for the 1962 law, both local governments (city and prefecture) were important to persuade the central government to include Yokkaichi. In the process of implementation of the national laws of 1962 and 1967 mentioned above, the central government supported political and financial local implementation. This joint action happened in other cases, such as the interaction for technical support and advice between local governments and the Industrial Pollution Research Group, created by in 1959 by the MITI.

What the lessons to the development literature? The Yokkaichi case shows that local governments were fundamental to policy change and implementation, but they did not act alone. They were able to connect to central policies to get political and financial support, at the same time they created their own legal and organizational capacity to manage change and implement policies effectively. Most likely, local governments alone would not be able to manage change in Yokkaichi, because they had to deal

with powerful business interests and ministries. At the same time, central governments were flexible to negotiate changes in their policies to match the needs of local governments, such as in the case of the inclusion of Yokkaichi as priority region in the law of 1962. It was also important to coordinate change at the local level and give political and financial support to local governments.

Many policy makers see Japan as a successful case of decentralization to curb environmental problems by local governments. They tend to claim that the problem of local governments in developing countries to follow the Japanese experience is the lack of technical and institutional capacity, so they ask for training or other initiatives for capacity building (Cruz et al. 1998). However, decentralization cannot be thought as discrete change to give all power and responsibility to local governments, and give training and resources to them in order to gain implementation capacity, or, on the other hand, centralize because local governments did not have the capacity. Both local and central governments have fundamental role in policy implementation at local level. Even in a process of change driven by local governments, there is an important role of central governments in supplying political, financial and institutional support, even technical capacity. Local governments have different capacities to implement policies, so each case is a different case. Local governments can play different roles, and each role needs some complementation of the central government. Thus the problem could be to find a role for the central government in policy implementation at the local level.

There is also a need to find a proper role for local government, or more adequately, find the role among many possible roles. This could mean that local governments could play diverse roles, depending on their institutional capacity. Many local governments, such as Osaka and Tokyo in the case of Japan, have political power and strong institutional capacity to implement environmental policies. Others, such as Mie and Yokkaichi, have more limited power and resources. Therefore, they probably need different kinds of support from and interactions with the central government.

In sum, the role of local governments can be many and the role of central governments can be many as well. The challenge is to find a proper role to both, depending on the situation.

4.2. The Role of Civil Society

Many governments in developing countries tend to interact little with the civil society, as well as being unaccountable to their actions. In order to cope with these problems, policymakers have suggested increasing participation. As a result, the role of participation in project implementation in development literature has grown in the last two decades (Rietbergen-McCracken 1996; Paul 1992).

Organized civil society played an important role in policy implementation during the whole process of

environmental improvement in many places of Japan (Fujikura 2001), including Yokkaichi. As the first signs of contamination arose in the region, organizations of civil society demanded change. For example, fishermen got organized and complained in the first time smelling fish appeared in Ise Bay. They pressed the local government to compensate their losses in income and got compensated. As the pollution got worse in Yokkaichi, protests of civil society became stronger and more organized. Community organizations got mobilized all over the city to fight the effects of pollution on health, especially when the test of the second complex started in 1963. Many of those organizations were built on the town community associations from the pre-war times.

The protests were usually indirect through the community organizations and negotiated with local authorities, as many residents had links with the polluting companies in the complex. Another way to give indirect voice to community groups was their participation in the several councils to study the problems and give advice to politicians. Governments also responded to victims' demands. Local governments provided compensation for the losses in fish, established free health care to the victims and passed new legislation to protect those rights.

Direct protests increased as the cases of the Yokkaichi asthma become more evident. This happened through protests on the streets and media, as well as in the courts. Residents of Yokkaichi went to courts to ask for compensation due to material losses and health problems. Plaintiffs won the case in July 24, 1972. This victory was important to press for more changes on companies and governments, as court decisions were in many other cases in Japan (Kato 2004). New laws came along to compensate victims of environmental problems such as the Pollution Victims Relief Law of 1970 and the Pollution and Health damage Compensation Law of 1974.

Another important point about the participation of civil society is the role of experts. Specialists were important in several ways, from providing public information to deciding about standards and policies. Yokkaichi City and Mie Prefecture established several groups of experts to monitor the situation and research environmental issues in the region, such as the Promotion Council on Water Pollution Prevention and the Pollution Control Board. The experts were key to clarify technical points and provide information and raise awareness among the population and policymakers. For example, after the release of the interim report of the Pollution Control Board, the Federation of Shiohama Town Community Association demanded the local government to implement some actions to control and mitigate pollution problems, such as providing medical examination for the victims, introducing new environmental regulations and asking the support from the central government. The Mie government implemented those actions promptly. In other situations, experts even gave the verdict for some policy disputes. When Yokkaichi was excluded as a priority area from the Smoke and Soot Regulation

Law in 1962, local governments appealed and the city was included later. The inclusion was decided based on a recommendation of an investigative team (the Kurokawa Team).

Yokkaichi case gives some insights on the role of civil society and participation on policy implementation. Participation can help to make policy implementation more effective, but the way the participation happens is fundamental to get the results. Under influence of the donors, policymakers in developing countries have stressed participation through strengthening the role of non-governmental organizations (NGOs) or building community associations, and as a prescriptive consequence governments would be more responsive. However, this has failed in many instances. First, the reason is that many of those organizations in developing countries have no legitimacy in civil society or were built from scratch, so they do not have articulation within society to listen and respond to their demands. In Yokkaichi, civil society organizations developed on the existing structures for other purposes, as the town community associations from the pre-war times. This helped to spam the reaction of the civil society against the increasing pollution, as the town community associations were organized in the whole city. Second, participation and civil society organizations in developing countries have difficult times to make governments responsive. In our case in Yokkaichi, even though local governments were reluctant to take actions against pollution in the beginning, they become more responsive when protests arise, and in some cases were threatened by the risk of losing elections, as progressive governments were winning elections in some important local governments in Japan (Fujikura 2001). Once governments under pressure decided to take action against pollution, they were able to implement policies effectively to respond to the concerns of the population because of the previous relation with the organized civil society in the town community associations (*jichi-kai*), which are present in basically every district. Historically, those community associations were well-connected to local legislative power and local governments. This facilitated the responsiveness of local governments to civil society protests, by compensating pollution victims and enacting new laws. For example, in 1963, when the Daikyowa Petrochemical plant under construction made noises while testing the boiler safety valve, the town community association of Takahama appealed immediately to the Yokkaichi City Council, and the Pollution Control Board ordered the plant to install a silencer to stop the noise (ICETT 1994). Moreover, the typical western model of NGO is not common in Japan. The formalization and mobilization of those models of independent NGOs is very difficult in Japan (Schreurs 2002). Most of the movements of civil society are based on existing structures of neighborhood associations and class movements (labor unions etc.). Finally, expert teams play a key role in policy processes in Japan. In general, experts, such as university professors or scientists, have great credibility among all parts in Japan, including government officials, civil society and business people. These parts tend to call experts to analyze policy problems and follow their recommendations in the decision-making process.

Therefore, the lessons from Yokkaichi show that participation did not happen from scratch. It gives results when civil society organizations have some existing structure to articulate demands and responses within society, such as existing associations and processes of decision making, such as the role of the experts to mediate conflicts. Also, government responsiveness is strengthened when there are existing connections between government and civil society organizations, so demands can flow smoothly.

4.3 Collaboration between Government and Industries

Recently, the development literature and practice has stressed the importance of public-private collaboration for implementing policies. Now, it is fashionable public-private partnership (PPP) in many governments, such as the recently enacted PPP regulation in Brazil (Ministério do Planejamento 2005). There are many reasons for that. First, many States shrunk in its capacity to invest in infrastructure and other projects, due to strict fiscal policies. Second, there is a belief that private companies can be more efficient than governments to implement certain tasks, so this could make policy implementation more efficient.

Collaboration between private and public sector in Japan is well-known. Throughout the process of development of the country after the Second Great War, one of the explanations for the success of Japan's economic development was the close relation between businessmen, especially large corporations, and the State, represented by bureaucrats and politicians.

Yokkaichi was not an exception. Companies and central and local governments had close relations and many common projects for the development of the petrochemical complex. When, environmental problems came up in the end of 1950s, there was an initial resistance from the companies. Environmental improvement would imply the need of heavy investments in pollution control equipment and technology development. Companies had close contacts in the central government, and local governments could do little. As the protests increased over the country and the Smoke and Soot Regulation Law was enacted in 1962, companies in Yokkaichi had no alternative, but comply.

The first joint action between companies and governments was in the kind of environmental regulation that was established. Besides the many command-and-control (enforcement of environmental standards, etc.), some laws came up to facilitate the implementation of pollution control by the companies, such as the financing of equipment at low interest rates. Examples of those laws are the Environmental Pollution Control Service Corporation Law of 1965 and the Special Pollution Finance Law of 1971. Therefore, governments used the typical stick-and-carrot approach to make companies improve environmental standards.

Moreover, governments and companies jointly development technological and policy alternatives. The improvement was gradual and negotiated. First, companies installed taller smokestacks in their plants. This dispersed the pollutants and decreased the concentration nearby the plant. Companies moved to change their fuel to use cleaner options, and then adopted end-of-pipe control, such as effluent treatment plants and desulphurization and denitrification equipment.

For the construction of the third industrial complex in Yokkaichi, environmental issues were already in the agenda. Planners added to the planning discussions concerns about cleaner technologies and other measures to avoid the problems of the first and second complexes. One of these measures was the public-private cooperation to the construction of a greenbelt to isolate the plants from the city. Companies and government also collaborated in joint projects such as the construction of wastewater treatment plant completed in 1969.

In Japan, the most well-know partnership in the environmental area was the “voluntary” agreements between companies and local governments in order to reduce environmental pollution (Tsutsumi 2001). These agreements were voluntary in the sense that companies agreed to reduce pollution below legal standards, but with a tacit agreement from the local government that legal standards would not be raised. The degree and timeline of reduction is negotiated between companies and public officials. More than thirty thousand of those voluntary agreements were signed in Japan until 1994 (Tsutsumi 2001), including many in Yokkaichi.

The case of Yokkaichi is typical in Japan regarding public-private relation for development programs and environmental management. The Japanese experience may be difficult to be translated to other contexts. Many of the practices described above may lead to widespread corruption and mismanagement in developing countries, as it has happened in some cases in Japan. However, Yokkaichi can give few lessons to the development literature and practice. First, the Japanese bureaucracy is used to public-private partnership. They learned through a long historical process. For many years, public policies were implemented with the participation of private groups. The public-private partnership has a balance mechanism with the consensual approach of Japanese decision-making system, both public and private. Decisions take time and involve many people, what may have limited bribing because more people know about what is going on. Bureaucracy also had links with community associations, which is another balance as community leaders always knew how public-private partnership was conducted. Second, the governments always treated business in a carrot-and-stick fashion, giving subsidies but asking results, such as the case of environmental improvements, or with the tacit agreement that it would not pass new environmental legislation. Public-private solutions to environmental management in Japan include gradualism in the results and measures. Companies

normally were given time to adapt, and the results determined the continuation of the subsidies or support.

4.4. Gradualism and Flexibility

One thing that is little discussed in the development literature is the way policies are adjusted to lead to good implementation results.

In Yokkaichi, and other similar cases in Japan, policies were implemented gradually and had some flexibility to adapt to demands of the stakeholders. Local governments had some flexibility to make national regulations stricter. In the 1960s and 1970s, prefecture and municipal governments enacted their own environmental regulations such as the Mie Prefecture's Pollution Control Ordinance in 1967, which included controls for quality of air, water, odors, noise and vibration. In the regulation of the polluting companies, local governments changed standards constantly. Sometimes strict standards were introduced, but reduced afterwards because companies needed time to adapt. In other situations standards were increased gradually, according to a scheduled negotiation between regulators and companies. Regulations also changed the regulating scope. For example, the regulations on sulfur dioxide were limiting discharges of plants, but as many plants were established in a certain area pollution increased, so Mie Prefecture introduced the Pollution Control Ordinance in 1971 to limit discharges of sulfur dioxide in a certain region as well (a kind of bobble limit).

The voluntary agreements mentioned above allowed companies much flexibility to pursue their own way to improve environmental quality. The agreements loosened some of the standards, but had the companies' commitment to improve environmental quality along the years when the standards were raised gradually. An example is the way companies dealt with air pollution in Yokkaichi. First they increased the size of smokestacks, then changed to less polluting fuel and finally introduced desulphurization and denitrification equipments. Many of those solutions needed time to be developed and adapted. At the same time, companies looked for cleaner technologies to use in their future plants.

Local governments also created policies to respond to public demands gradually. They first established ad hoc responses and then introduced policies. For example, in the case of victim compensations, governments paid for the fish losses and gave free treatment in the beginning. The policy was consolidated with the national and local laws established afterwards, such as the aforementioned the Pollution Victims Relief Law of 1970 and Pollution and Health damage Compensation Law of 1974.

Flexibility and gradualism can explain partially the success in the implementation of some policies. This gave policymakers time and opportunities to adapt solutions in an environment with much

uncertainty. At the time of the environmental demands came on the companies, there were not many established and tested environmental management tools and technologies. Companies were given flexible standards and some subsidies to invest in cleaner technologies, but had to show improvements over time.

In many cases in developing countries, policies are introduced with little space to a flexible implementation. Generally policies are introduced as a package, as a kind of recipe from donors or consultants. However, the process of adapting in policy implementation is not an easy task. Governments need to have the institutional capacity to adjust policies as the situation demands, as well as have the proper contexts to accept the adaptation as an usual matter. In Japan, the institutional capacity was built over time based on the traditional way of the processes of consensual decision-making in the organizations and in public policies. This way is also valid in the implementation exactly because policy is one whole process, and not separated between policy-making and implementation. The own process of policy decision and design may leave a space for flexibility in the implementation. During the implementation, state officials and stakeholders have the possibility of changing policies, such as in the case of voluntary agreements and regulations set for pollution standards.

Therefore, flexibility and gradualism are key to explain policy results in Yokkaichi and Japan in general. However, this was valid to Japan as a result of the context of consensual decision-making and the strong link between policy-making and implementation. In developing countries, it is difficult to introduce those characteristics, especially because many policies come as package from outside with little flexibility to try to avoid errors, mismanagement and corruption (Puppim de Oliveira 2005). Since its conception, policy making and implementation are separated and policy implementation inflexible. This inflexibility blocks the necessary adaptation of the policies to the context and inhibits the creation of a local institutional capacity to make policy implementation gradual and flexible.

5. Final Notes

The development literature has searched for ways to improve policy processes in developing countries. One important, and often forgotten, issue in the literature is policy implementation. Policymakers and academics tend to prioritize policymaking and regard implementation as automatic after decisions are made. They also divide the policy process into stages, such as policy conception, policy design, implementation, and evaluation. However, implementation has been key to explain the success of policies and is overlooked by policymakers in the policy process, exactly because they separate policymaking and implementation, and prioritize the former.

Implementation of environmental policies has had political, financial and institutional obstacles in developing countries (Puppim de Oliveira 2002). The literature has suggested many issues to improve policy process. These issues include decentralization, participation and public-private cooperation.

The case of Yokkaichi has shown some lessons to analyze those issues in policy implementation, particularly environmental policies. Parts of the literature in academia and practice have portrayed the debates in a simplistic way, highlighting the need of decentralization, participation and public-private partnership. Even though those issues may be important to improve policy process in implementation, they are often posed without understanding the details of the process. The analysis of the case in this article points for some possible misunderstandings.

Notes

- 1 Pollution prevention avoids the environmental problems before they come up. Pollution control combat the problem after it is generated.

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