

The Origin and Evolution of the Crisis in the Offshore-Plant Industry in South Korea: Goal Ambiguity and Governmental Politics*

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Abstract: The once-promising offshore-plant industry in South Korea is on the verge of collapse. There are both internal and external reasons for the sudden rise and fall of this now troubled industry. This study focuses on what went wrong within the South Korean government. It examines how the offshore-plant industrial policy has been implemented since its inception in 2012. Using a modified version of Matland's ambiguity-conflict matrix, this study explains the way in which the combination of policy goal ambiguity and organizational conflict between and within government agencies led to policy drift and failure. We find that offshore-plant industrial policy has undergone three different but related stages from symbolic to experimental to political implementation over the past five years. Varying degrees of goal ambiguity and organizational conflicts have resulted in these shifts, which in turn have resulted in the government missing opportunities to correct earlier policy errors in the next stages. This study explains the unique problems inherent in the offshore-plant industrial policy. At the same time, it reveals common problems prevalent in South Korea's government-led industrial policy: a lack of planning, deliberation, coordination, and collaboration within the government, let alone outside of it.

Keywords: offshore-plant industry, shipbuilding industry, policy goal ambiguity, governmental politics, ambiguity-conflict model

* This work was supported by a National Research Foundation of Korea grant funded by the Korean government (NRF-2014S1A3A2044630). Earlier versions of this study were presented at the September 2016 meeting of the Korean Association for Policy Studies held in Seoul and the November 2016 conference of the Korean Association for Governance Studies, also held in Seoul.

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Manuscript received February 10, 2017; out for review February 17, 2017; review completed March 22, 2017; accepted March 24, 2017.

The Korean Journal of Policy Studies, Vol. 32, No. 1 (2017), pp. 71-97.

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INTRODUCTION

“Offshore plant” refers to structures and facilities in a marine environment, mostly for the production and transmission of oil, gas, electricity, and other resources.¹ There are two main reasons many countries have shown their interest in this industry. First, the price of oil increased sharply as the demand for energy (particularly from China) grew and minable oil resources on land reached their limit.² Also, in the wake of the 2008 global financial crisis, the global shipbuilding industry entered a difficult period of downsizing driven by declining orders. Global shipbuilders thus began to turn their eyes to offshore plants as an alternative source of survival during hard times.

After leading countries such as Norway, France, and the United States began to enthusiastically pursue the offshore-plant industry, South Korea jumped on the bandwagon. The South Korean government decided to promote the industry as a lifesaver for its sluggish shipbuilding industry. The Ministry of Knowledge Economy (currently, the Ministry of Trade, Industry, and Energy) issued a press release in 2012 outlining the offshore-plant industry development strategy. The plan was based on the optimistic estimation that the total value of orders for offshore plants would reach US \$80 billion by the year 2020. In 2013, the Park Geun-hye government chose the industry as a “new growth engine” industry and announced a plan to invest a large sum of capital over the next five years.³

However, the industry did not grow as expected. The three major shipbuilding companies in Korea (Hyundai Heavy Industries, Daewoo Shipbuilding and Marine Engineering, and Samsung Heavy Industries) reported that 87.5% (US \$7 billion) of their net losses in 2015 (US \$8 billion) came from the offshore-plant sector (Donga

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1. In the global market, “offshore industry,” “offshore engineering,” and “offshore platform” are more commonly used to describe and analyze this industrial field. Nevertheless, we use the term “offshore plant” because it is the term used in the South Korean context. We further explain our use of this term in the fourth section of the paper.
 2. According to NASDAQ, the price of crude oil more than doubled between 2009 and 2012, rising from US \$42 to US \$100 (www.nasdaq.com/markets/crude-oil.aspx?timeframe=10y).
 3. The Park administration announced 13 new growth engine industries as a part of its creative economy program: wearable devices, autonomous vehicles, high speed-VTOL (vertical takeoff and landing) aircrafts, UAV (unmanned aerial vehicle) systems, offshore plants for extreme environments, advanced material process systems, public safety, health robots, high efficiency subminiature generation systems, low-loss DC (direct current) transmission and distribution systems, carbon materials (plastic-based core vehicle parts), advanced industrial nonferrous metals (titanium material), customized health care systems, nano-based biometric devices, and virtual training platforms.

Ilbo, 2016). Granted, many countries experienced stagnation in the offshore-plant industry in this period. However, South Korea's downturn was exceptional in terms of scale and magnitude. Apparently, it was caused by misinvestment as well as overinvestment.

Was it simply nothing more than a bad luck owing to an unfavorable global business cycle? Or was there something structural at work? The South Korean government has been known for selecting the best national champions. Why, then, did its reputation suffer so badly this time? What went wrong? For sure, the moral laxity of government bureaucrats and their being held captive by special interests are to be blamed.⁴ But there must be more fundamental causes for the policy failure, causes that can no doubt be traced to the way the policy was implemented by government agencies.

Little has been written about these puzzles. Extant studies of the offshore-plant industry in South Korea have focused on technical issues, paying little attention to the policy aspects that resulted in policy drift. This study aims to fill the gap by unraveling the underlying causes of the policy drift, focusing on policy goal ambiguity, on the one hand, and the politics between and within government agencies, on the other. By employing and modifying Matland's policy implementation theory and Allison's decision-making model, this study attempts to show that the South Korean government has repeatedly missed opportunities to correct policy errors, at first because of policy goal ambiguities and subsequently because of intense conflict within government agencies, particularly the Ministry of Trade, Industry and Energy (formerly, the Ministry of Knowledge Economy).

The remainder of this study proceeds as follows. Section 2 overviews the offshore-plant industry and reviews the existing literature and the research gap. Section 3 offers an analytical framework by critically combining Matland's ambiguity-conflict model and Allison's governmental politics model. This section presents four ideal types of policy implementation depending on the level of goal ambiguity and conflicts: symbolic, political, experimental, and administrative implementation. Section 4 finds that offshore-plant industrial policy has undergone three sequential stages: symbolic, experimental, and political policy implementation. This study finds that varying degrees of policy goal ambiguity and organizational conflicts prevalent in the policy implementation process have produced these shifts. Finally, section 5 summarizes the findings and draws policy implications.

4. Daewoo Shipbuilding and Marine Engineering was found to have engaged in accounting fraud from 2012 to 2014 by reporting lower costs and overstating profits. The amount of the frauds is estimated to be US \$5.4 billion. The government-affiliated Korea Development Bank is also blamed for sitting on the sidelines (Bridge Economy, 2016).

LITERATURE REVIEW AND GAPS IN RESEARCH

In addition to extracting oil and gas deposits at sea, offshore plants have more recently been used for the development of alternative energy sources such as wind and tidal power generation. Compared to onshore or inland plants, the installation of offshore plants is very sensitive to geographic and hydrographic conditions such as distance to shoreline, water depth, wind speed, and waves and ocean currents and poses much greater technological and engineering challenges. Among others, Norway, France, the United States, and the United Kingdom are the leading countries in this field in terms of engineering, finance, human resources, and business. It is no coincidence that major offshore engineering companies such as Baker Hughes, Schlumberger, Enasco, and Seadrill are all from these countries (Technavio, 2014). The offshore-plant industry is a comprehensive sector that includes different engineering streams and stages such as feasibility studies and preliminary exploration, drilling and assessment, design, construction and production, procurement, installation, and commissioning, and marketing and maintenance.

By global standards, South Korea's major shipbuilding enterprises have been highly competitive and successful in the global market, particularly in the drillship construction field. From 2001 to 2006, South Korean shipbuilding companies sustained a steady growth in sales and negotiated the highest shipbuilding contracts in its history, totaling US \$22 billion in 2006 (Kyunghyang Biz, 2007). They accounted for about 40% of a global market share despite rapid growth by Chinese and Japanese competitors (Korea Economy TV, 2011). Along with other global players, however, South Korean companies faced a severe recession in the wake of the 2008 global financial crisis. Addressing various problems due to the shrinking shipbuilding market, declining prices, and overcapacity would require the industry as a whole to undertake restructuring and technological upgrading. Instead of this, however, South Korean firms chose a seemingly easier path: jumping into a new business venture, namely the offshore-plant industry.

Although there were initial concerns that South Korean firms were not only late-comers but also unprepared players in this high-tech, high risk (and high returns) field, their remarkable success in the shipbuilding industry silenced these concerns and bolstered the wishful thinking that the same success could be easily replicated in the offshore-plant business. The South Korean government too viewed the offshore-plant industry as a natural candidate for a lifeline to save the troubled shipbuilding industry. Obsessed with the new growth engine initiative, the then-Lee Myung-bak government (2008-2013) made the decision to funnel a huge amount of funds into this uncharted industry without much deliberation and calculation.

That was the beginning of an abrupt but huge failure. It was a classic example of a type 1 error, that is, acting when action was not warranted. Why did the South Korean government actively do something wrong, committing an error of commission? Was the government simply in the pocket of business lobbies? Why was no search and rescue effort undertaken after this wrong decision had been made?

The existing literature on the offshore-plant and shipbuilding industries in South Korea can be grouped into three categories. First, there are a number of studies on the engineering aspects of these industries. Hassink and Shin (2005) explore how South Korea became a world leader in shipbuilding industry, charting its beginnings in a heavy dependence on imports for main supplies to its emergence as an innovation cluster that includes universities and research institutes. Lee (2011) argues that South Korean shipbuilding companies have improved their productivity through the development of new methods of construction such as floating docks and mega blocs. In order to maintain global competitiveness, he suggests that the industry acquire the source technology of offshore plants and high-value shipbuilding construction technology. Lee and Lee (2011) investigate the role of augmented reality technology in operational stages of vessel and offshore-plant industries. Han (2013) analyzes the status of “information technology convergence” in shipbuilding and offshore-plant sectors. Kim and Hwang (2015) develop a marine information exchange protocol, KRS-DEX, designed to make sharing and reusing information in the process of building large vessels and offshore plants more efficient.

Second, several studies have addressed the issue of the industrial restructuring of related firms and industries. Yun and Heo (2000) consider the prospect of restructuring the South Korean shipbuilding industry. They conduct a trend analysis and argue that there is a strong possibility the industry will encounter a crisis because of its weak internal structure. Park (2016) argues that the offshore-plant industry is the main cause of the crisis in the shipbuilding industry and suggests a reform in labor unions. Cho (2016) analyzes the causes of crisis in shipbuilding and shipping industries from the perspective of corporate management, the market, government-run banks, and the government, and proposes a restructuring plan. This study contends that support for workers employed by subcontractors should be borne in mind during a period of downsizing and restructuring.

Third, some studies have used the offshore-plant industry as a case study for the government-led industrial policy. Exploring the topic as it pertains to domestic industrial policy, Park (2012) argues that a development plan for the offshore-plant service industry is needed that would provide for fund arrangements, the expansion of financial support, and professional manpower training. Park (2014) analyzes the current state of the offshore-plant industry in Gyeong-nam province, where all the major

South Korean shipbuilders are concentrated, and proposes technology improvement in front-end engineering and design and the localization of parts and services.

Meanwhile, Park (2013) conducts a comparative analysis of offshore-plant development industry in North America, Europe, Japan, and China. He examines various national strategies that are dependent on the contextual conditions of each country and stresses the necessity of creating a unique Korean growth model. For example, the United States concentrates on research in the polar region and its harsh environment, while China as a latecomer focuses on the development of techniques for building offshore structures. Park (2012) investigates China's offshore-plant industrial policy and outlines policy implications of long-term plans such as improvement in laws regulating industry and investment in R&D funds.

Although the existing studies cover various aspects of the offshore-plant industry, it by and large focuses on the engineering, operations, and maintenance of such plants. There are a handful of studies that approach the issue from an industrial policy perspective. However, most of them confine themselves to simple comparison between different countries or speculative policy proposals for future development. None has attempted to examine the decision-making processes that resulted in the offshore-plant industry being proposed as a means for overcoming the crisis of the shipbuilding industry or the conflicts and problems in the policy implementation process that eventually led to turmoil within the major South Korean shipbuilders.

This study aims to analyze the reasons behind the policy drift by focusing on the question of why the Ministry of Trade, Industry, and Energy repeatedly failed to act on opportunities to correct policy errors revealed and identified in the process of policy implementation. Matland's policy implementation theory is a useful analytical framework for our study because of our focus on the planning and implementation problem of the offshore-plant industry. Matland proposes policy ambiguity and conflict as the main independent variables that determine the outcome of the policy implementation stage.

ANALYTICAL FRAMEWORK

Matland's Ambiguity-Conflict Matrix

Matland (1995) offers a systematic categorization of four different types of policy implementation based on two key factors: the level of policy goal ambiguity and the level of conflict among interest groups (Seo & Koo, 2014).

Table 1. Matland's Ambiguity-Conflict Matrix

		Level of Conflict	
		Low	High
Level of Goal Ambiguity	Low	Administrative implementation	Political implementation
	High	Experimental implementation	Symbolic implementation

Source: Matland (1995).

In the process of administrative implementation, both goals and the means by which to achieve them are clearly defined. The implementation process is characterized as a hierarchical system in which rational decisions are made at the top and then conveyed to the bottom. Since the level of conflict is low, compliance can be easily secured by a normative mechanism.⁵ The low level of ambiguity leads to relatively stable and standardized implementation. However, administrative implementation does not always guarantee successful policy outcomes. Acquisition of resources needed for implementation determines whether the policy will succeed. Technical problems, such as a lack of resources and time, and misunderstanding in the process of communication can negatively affect the policy outcome.

Political implementation results from a state with a low level of policy goal ambiguity and a high level of conflict. Actors have a clearly defined set of policy goals and means but do not share common interests. It is difficult to elicit compliance from policy target groups and related actors through a normative mechanism. Instead, a power game among actors with different interests determines successful implementation. A more effective mechanism is either coercive (one participant possesses sufficient power to force his or her will on the other participants) or remunerative (one partici-

5. Matland draws on Etzioni (1961)'s scheme of eliciting compliance to explain different types of implementation process. Etzioni argues that there are three mechanisms that serve to secure compliance from an actor: normative, coercive, and remunerative. Normative mechanisms prevail when actors have mutually shared goals or when an actor demanding that a certain action be carried out has authority; in these cases, compliance is easily obtained. In cases in which actors refuse to comply with a request for action, however, a coercive mechanism can be deployed that impose restrictions or sanctions. Lastly, a remunerative mechanism seeks to ensure compliance by providing incentives to perform the demanded action.

pant has sufficient resources to negotiate an agreement with other participants whose cooperation is required) (Matland 1995, pp. 163-165).

In experimental implementation, the level of conflict is low, but the level of ambiguity is high. This type of implementation occurs when actors' preference for the proposed policy goals and means is vague or where the technology needed to achieve policy goal is uncertain.⁶ Since there is no sharp conflict of interests among actors, contextual conditions dominate the process. As Matland (1995, p. 166) notes, successful implementation among various outcomes will "depend heavily on the resources and actors present in the micro-implementing environment," which is "likely to vary strongly from site to site." A low level of conflict can also provide an opportunity for the government or policy makers to experiment and learn about the new policy. The learning experience from experimental implementation can be more important than a successful policy outcome itself.

Lastly, symbolic implementation occurs when high level of conflict is combined with high level of policy goal ambiguity. According to Matland (1995, p. 169), "Policies aimed at redistributing power or goods are the most obvious examples of programs that fall under this category." As in the case of political implementation, the power game among actors with different goals and interests affects the policy outcome in cases of symbolic implementation. However, since the level of ambiguity is higher in cases of symbolic implementation than in cases of political implementation, professionals, who can lay the groundwork for problem-solving actions, play an important role in symbolic implementation. Various interpretations of policy goals and means compete with each other, and actors with similar interpretations form a coalition. The strength of this coalition at the microlevel determines the implementation outcome (Matland, 1995; Chung et al., 2011).

In this model, "policy goal" refers to the desired outcome of a policy (Chung et al., 2011, p. 34). The ambiguity of policy goals falls into one or more of the following categories: (1) mission comprehension ambiguity, (2) directive ambiguity, (3) evaluative ambiguity, and (4) priority ambiguity.⁷ In the case of South Korea's offshore-plant

6. Matland uses Cohen, March, and Olsen (1972)'s garbage can model of organizational choice to elaborate the conditions of experimental implementation. Grounded in the idea of problematic preferences, uncertain technology, and fluid participation, the garbage can model has a bearing on experimental implementation in that both consider the policy process as unpredictable rather than clear and programmed. The garbage can model suggests that participants randomly dump diverse kinds of problems and solutions into the can and that outcomes are a function of the garbage mixed in it.

7. If there are competing or conflicting interpretations of a policy goal, mission-comprehension ambiguity is likely. Directive and evaluative ambiguities arise when guidelines for

industrial policy, there was a high degree of policy goal ambiguity for a long time. Mission comprehension ambiguity and priority ambiguity were particularly salient in the implementation process.

Matland offers a clear set of theoretical and conceptual foundations for the goal ambiguity elements of his model, but he fails to do the same for the conflict elements. More importantly, Matland's original approach principally assumes conflicts between private parties and interest groups rather than between and/or within public organizations. In the South Korean case, it was conflicts between and in public organizations that prevailed. Therefore, in the following section, we use the governmental politics decision-making approach to expand on the ambiguity-conflict model.

Governmental Politics and Interorganizational Conflict

Policy conflict occurs when the different and incompatible interests of actors collide in the process of policy decision making and implementation. These sorts of conflicts are pervasive; they are inevitable part of the policy-making process in government. Different government agencies and organizations not only pursue the goals of a government as a whole but also seek to maximize their own organizational interests. As Huntington (1960, p. 289) notes, policies are "the product of controversy, negotiation, and bargaining among different groups with different interests and perspectives." Conflicts thus have a place in decision making and policy change in the government system. Nevertheless, conflicts are often associated with waste of taxpayers' money and are thus deemed negative (Bak, 2015).

Organizational theory scholars suggest that conflicts occur for many reasons, including contradiction among goals, competition for scarce resources, miscommunication, status incongruence, difference in cultural values, and personal friction among employees (Oh & Kim, 2006). Among these reasons, interest-based conflicts are inherent in modern bureaucratic politics because different organizations have different organizational interests associated with their particular missions, mandates, and resources (Meier & Krause, 2003; Halperin & Clapp, 2006).

actions and evaluations are ambiguously defined. Priority ambiguity comes to the fore when policy actors are forced to pursue related but distinct policy goals. The level of goal ambiguity can be high in this case even if each goal has a clear objective and direction (Chun, 2004; Chun & Rainey, 2005). Policy goal ambiguity can result in a misunderstanding of the original legislation and ultimately leads to policy failure (Cohen, Timmons, & Fesko, 2005). This kind of ambiguity has been the main cause of conflicts at the implementation phase.

How well the organizational conflicts that arise from agencies working at cross-purposes within the government are resolved also depends on a number of factors ranging from the skill and leadership of decision maker to interorganizational communication to third-party arbitration and coordination. Indeed, overriding individual interests and agendas and negotiating a successful resolution require quite a bit of managerial capacity, consultation, collaboration and pressure from both within and outside of the government that can override the individual interests and agendas (Bak, 2015).

Each group has its own interests and agendas, and no one is willing to give up on its own *raison d'être* in a competitive bureaucratic world such as that found in South Korea. If a policy conflict cannot be resolved by coordination between organizations for whom the policy is relevant, the organizations can appeal to a third party. In South Korea, however, policy coordination between organizations remains perfunctory owing to the power relationship that tends to subsist between them (Jeong, 2003, pp. 264-277). This lack of collaboration is exacerbated when there are no standardized procedures in place among the competing agencies.

According to Allison and Zelikow (1999)'s governmental politics model, government action is a result of a bargaining game rather than a rational choice or a standardized organizational output. The government is not a unitary decision maker in this model. Rather, many actors share power and participate in a political decision-making process. Without standardized procedures to follow, each actor tends to regard his or her own interest as legitimate and sacred.⁸

Participants and their relative power are thus key factors in determining outcomes in governmental politics (Campbell & Campbell, 2014). Power comes from both within and outside of the organization. Leadership, professionalism, position, organizational culture, and structure are internal sources of organizational power. Pressure or support from outside actors such as a legislative body, superior authority, trade unions,

8. Allison and Zelikow (1999) present three decision-making models: rational actor model, organizational behavior model, and governmental politics model. The first model assumes that humans are rational and that the government is a rational and unitary actor that chooses the best option among many alternatives. Policy decision making is the result of rational thinking and is thus consistent. The second model assumes that the government is not a unitary actor but a complex of "loosely allied organizations." Each organization has its own role and a "quasi-independent" status. Government decisions can thus be seen as the result of routinized procedures of suborganizations. In this case, suborganizations search for policy alternatives by following standard operating procedures. The third model assumes that the government is neither a unitary actor nor an assemblage of allied organizations. Instead, it is an assembly of many diverse players participating in a political game.

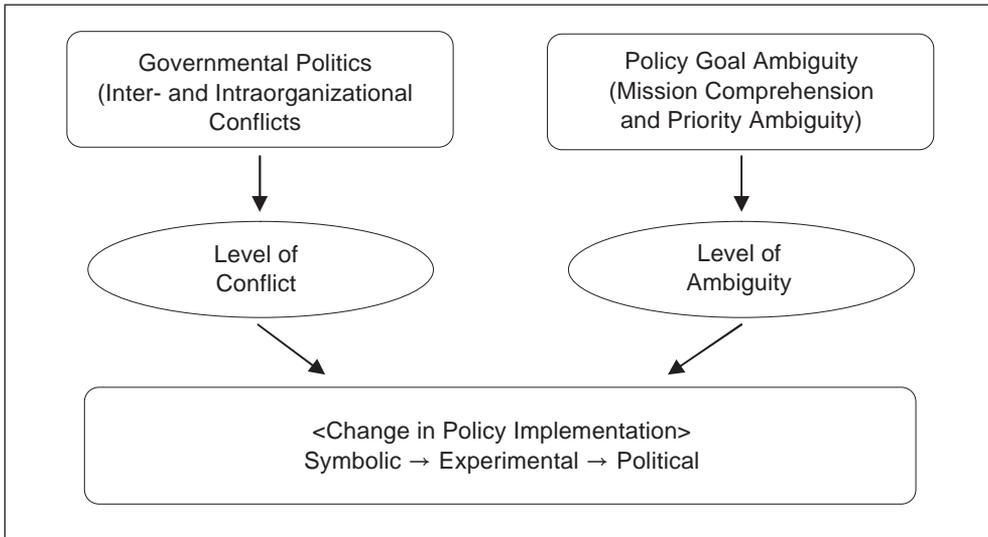
and international organizations are external sources of organizational power. Power consists of “bargaining advantages, skill and will in using bargaining advantages and other players’ perceptions of the first two ingredients” (Allison & Zelikow, 1999, p. 300).

In the case of South Korea’s offshore-plant industrial policy, conflict occurred between central government agencies—especially between the Ministry of Knowledge Economy (before 2013)/the Ministry of Trade, Industry, and Energy (after 2013) and the Ministry of Land, Transportation, and Maritime Affairs (before 2013)/the Ministry of Oceans and Fisheries (after 2013)—in its earlier phase and between the government and the private sector in its later phase, which also resulted in intraorganizational conflict within the Ministry of Trade, Industry, and Energy between the shipbuilding and plant division and the energy and resources policy division.⁹ The lack of a coordination mechanism within the ministry further aggravated intraorganizational politics, which in turn prevented the government as a whole from learning from its earlier mistakes and errors.

A Modified Framework

In line with Matland’s ambiguity-conflict model, this study argues that the combination of policy goal ambiguity among related government agencies and the conflict between and within them resulted in the policy failure. The failure manifested itself in the implementation process of offshore-plant policy. Among different types of goal ambiguity, mission comprehension ambiguity and priority ambiguity were conspicuous during the earlier policy phase but faded from view in the later phase. Battles between the Ministry of Knowledge Economy/Ministry of Trade, Industry, and Energy and the Ministry of Land, Transportation, and Maritime Affairs/Ministry of Oceans and Fisheries were waged in the earlier phase of policy process, which ended with the former’s victory. In the later phase, skirmishes occurred within the Ministry of Trade, Industry, and Energy, especially between the shipbuilding and plant division and the energy and resources policy division. These changes can be represented as shifts in the type of policy implementation from symbolic to experimental and then to political. This analytical framework is illustrated in figure 1.

9. This information has been collected from National Assembly records and interviews. We provide more detailed information in section 4.

Figure 1. Analytical Framework

A judgment as to the level of goal ambiguity and organizational conflict cannot be made using a quantitative approach. Therefore, this study adopts an in-depth case study approach. As Gerring (2004, p. 342) notes, a case study is “an intensive study of a single unit for the purpose of understanding a larger class of (similar) units.” A case study method is useful for providing a holistic and deep investigation of a single phenomenon. This study employs a contents analysis method to examine first and secondary sources and an open-ended interview approach to look into the underlying motivations and calculations of concerned parties that have affected the formation and implementation of the policy.

We have thoroughly reviewed press releases and National Assembly records of relevant departments such as the Ministry of Trade, Industry, and Energy and the Ministry of Oceans and Fisheries and have critically examined secondary sources, particularly from independent think tanks. In addition, we conducted in-depth interviews with academic and business experts who have been involved in the policy process, either directly or indirectly. Interviews were conducted with each interviewee on three separate occasions. A current general manager of Daewoo Shipbuilding and Marine Engineering and a deputy general manager in the Korea Offshore and Shipbuilding Association provided especially valuable insiders’ information and knowledge.

RESULTS OF ANALYSIS

The implementation process of offshore-plant policy in South Korea can be divided into three related but different stages: symbolic, experimental, and political.

The First Stage (before March 2013): Symbolic Implementation

The first stage unfolded in the period prior to March 2013 when the Park Geun-hye government undertook a governmental reorganization. As President Park promised during her election campaign, the new government restored the Ministry of Oceans and Fisheries and the Ministry of Trade, Industry, and Energy replaced the Ministry of Knowledge Economy. During the first period, the levels of ambiguity and conflict were both high.

High Level of Ambiguity

The policy goal was ambiguous at best when the South Korean government first launched its offshore-plant industrial policy in 2008. Among the four dimensions of goal ambiguity, mission comprehension ambiguity was the salient feature during this period. The government's decision to launch an offshore-plant industrial policy was not made carefully; it did not take into account the serious problems associated with this enterprise or carry out a thorough analysis of market environments. Rather, the decision was improvised and made in a rush in an effort to respond to President Lee Myung-bak's push for government agencies to suggest policy ideas for his pet initiative, the new growth engine initiative. Under a growing political pressure, the Ministry of Knowledge Economy noticed that some advanced maritime industrial countries such as the United States, Norway, and the Netherlands were investing heavily in the offshore-plant industry. Without engaging in any serious background checks or investigation, it decided to join the bandwagon on offshore-plant projects. It was an extension of the agency's old mantra: "Launch first, fix later."¹⁰

10. According to two business experts who were interviewed, the government recklessly decided to promote the offshore plant industry under the mistaken notion of that this was the way to revive the flagging shipbuilding industry. One of these experts pointed out that if the government had thoroughly analyzed the Japanese case, it would have been more cautious. Japan had entered the offshore plant industry in the 1980s and then pulled out of the market (interviews with a current employee of Daewoo Shipbuilding and Marine Engineering, December 17, 2016, and a Korea Offshore and Shipbuilding Association staff member, February 28, 2017).

The offshore plant was a relatively new technology and thus inherently highly risky. The South Korean government had little understanding of either the technology itself or its costs and benefits. The Ministry of Knowledge Economy did not have clear answer for how to implement the policy smoothly, nor did it even possess an overall understanding of the policy.¹¹ Nevertheless, it pronounced that “South Korea pursues the leading position in the offshore-plant industry based on the leading capacity of its shipbuilding industry” in a May 8, 2012, press release.

This overshooting was mainly a result of ignorance about the technological and strategic differences between the shipbuilding and offshore-plant industries. First, the size of the businesses is different. While the shipbuilding business is mainly about construction, the offshore-plant business encompasses comprehensive processes including EPCI (engineering, procurement, construction, and installation) and EPCICD (engineering, procurement, construction, installation, commissioning, and decommissioning). In the past, different engineering companies carried out each stage of the manufacturing process. Today, in contrast, most projects are completed on a turnkey basis, whereby a product is supplied in a condition ready for immediate use and operation.

Another issue is that the offshore-plant business is more site dependent than shipbuilding industries in that location has strong influence on the design of offshore plant. The depth of water, the extent of wind power, and the flow of water should be considered when constructing offshore structures. For example, fixed type installations such as jacket structures, concrete gravity platforms, and jackup platforms can be built only in a shallow sea, typically in water with a depth of 150 meters.¹²

Intentionally or not, the South Korean government mistakenly considered the offshore-plant industry to be the next industrial champion in the global market. It vigorously invested in almost every type of offshore engineering industry. Its ambitious but ambiguous policy goals sharply contrasted with the clear set of targets aimed at by the Singaporean government and the effective strategies it adopted to hit them. Singapore sought to capitalize on its geographical advantages and technical strengths by specializing in specific fields such as FPSO (floating production, storage, and offloading) and jackup rigs. According to the Singapore Economic Development Board, in 2012, the

11. According to a record from the 313th National Assembly, a member of the Knowledge Economy committee, Lee Jin-bok, pointed out that the Ministry of Knowledge Economy assigned only four staff members to the team related to shipbuilding and the offshore plant business. This understaffing problem shows that the government failed to grasp not only the business itself but also the importance of the business.

12. Other factors such as the effect of a change in oil prices and the difficulty in customization also differentiate the offshore plant business from simple shipbuilding (College of Engineering, Seoul National University, 2015).

city-state was the largest manufacturer of jackup rigs and had 70% of the global market share for the conversion of floating production units (Singapore Economic Development Board, 2017).¹³

The Ministry of Knowledge Economy was in charge of offshore-plant industrial policy. Within the agency, the automobile and shipbuilding division was given the mandate to design and implement the new industrial policy. However, the shipbuilding business was traditionally considered as secondary to the automobile industry within the division, and the offshore-plant industry trailed behind it.¹⁴ It was not until President Park Geun-hye came into office that the shipbuilding and plant division was created within the Ministry of Trade, Industry, and Energy with a mandate to exclusively supervise shipbuilding and offshore-plant businesses. This more specific mandate to oversee shipbuilding and the offshore-plant industry did not mean that the agency now had a clear set of policy goals and industrial targets, however. Rather, it was an abrupt declaration that it was in charge of the offshore-plant industry and a denial of the competing jurisdictional claim by the Ministry of Oceans and Fisheries.¹⁵

High Level of Conflict

During this period, a high level of interorganizational conflict affected the way in which the government's policy to promote the offshore-plant industry was implemented. There are many actors in the offshore-plant industrial policy process.¹⁶ We

13. More specifically, Singapore entered these two fields by converting existing businesses, while South Korea built new businesses. We appreciate one of the anonymous reviewers for bringing this issue to our attention.

14. For instance, the human resources dedicated to shipbuilding industrial policy were only one-third of those afforded to automobile industrial policy (interview with a professor in the Department of Naval Architecture and Ocean Engineering, Seoul National University, November 9, 2016).

15. The high level of policy goal ambiguity was also caused by the high level of ambiguity in policy tools. For instance, the Ministry of Knowledge Economy emphasized R&D to promote the process industry related to offshore plants, while the Ministry of Oceans and Fisheries focused on related service industries. Both ministries belatedly realized that the global barrier was much higher than they expected. Neither agency had a clear set of goals nor tools to achieve them.

16. Government agencies include the Ministry of Trade, Industry, and Energy, the Ministry of Oceans and Fisheries, the Ministry of Strategy and Finance, the Korea Development Bank, the Export-Import Bank of Korea, and local governments (Geoje, Busan, and Hadong). Private companies were also important: shipbuilding industries, the Korea Offshore and Shipbuilding Association, and the Korea Shipowners' Association.

focus here on governmental organizations, and in particular on the conflict between the Ministry of Knowledge Economy (before 2013)/ Ministry of Trade, Industry, and Energy (after 2013) and the Ministry of Land, Transportation, and Maritime Affairs (before 2013)/the Ministry of Oceans and Fisheries (after 2013) as well as the intra-organizational conflicts within these ministries, especially the Ministry of Trade, Industry, and Energy.

The offshore-plant industry emerged as a promising business that could provide South Korea's troubled shipbuilders with a lifeline in the face of global recession. President Lee, who placed the highest priority on economic growth, welcomed such a new business opportunity, regardless of the risk posed by such a newly emerging high-tech industry. The president's attention and interest fueled governmental competition and turf war among related agencies. When an organization secures jurisdiction over an area, positive effects such as enhancement of the organization's prestige, expansion of the scale of the organization, an increase in flexibility with respect to manpower, and an increase in the tax revenue or budget are expected. Thus, both the Ministry of Knowledge Economy and the Ministry of Land, Transportation, and Maritime Affairs had an eye on the offshore-plant industry, and this led to a brief but severe jurisdictional conflict.

The jurisdictional conflict is best illustrated by how the Ministry of Knowledge Economy reacted to a piece of legislation that required the Ministry of Land, Transportation, and Maritime Affairs to divide the marine territory and development division into the marine territory division and the marine new growth development division. The legislation contained a clause to the effect that the marine new growth development division would have jurisdiction over the development of maritime equipment and offshore plants. Since the Ministry of Knowledge Economy already had an engineering plant division that was in charge of the offshore-plant industry, it strongly opposed this clause. The Ministry of Land, Transportation, and Maritime Affairs also refused to hand over its marine-related responsibilities to the Ministry of Knowledge Economy and the conflict between the two ministries went from bad to worse.

When the Lee Myung-bak administration was replaced by the Park Geun-hye administration in early 2013, the interorganizational conflict became more severe. The second round was fought between two newly established ministries: the Ministry of Trade, Industry, and Energy and the Ministry of Oceans and Fisheries, who strongly disagreed with each other on the question of which agency should have jurisdiction over the offshore-plant industry.¹⁷ The Ministry of Oceans and Fisheries insisted that it

17. An informed academic interviewee pointed out that the turf war between the Ministry of Trade, Industry, and Energy and the Ministry of Oceans and Fisheries over who should

could strengthen its function by taking charge of the offshore-plant industry. But the Ministry of Trade, Industry, and Energy refused to surrender the industry because it viewed it as a key element of its industry promotion plans. It became a matter of which agency had more power and influence.

The National Assembly Records reveal the high level of conflict between the two ministries. Members of the Knowledge Economy Committee who favored the transfer of control of the business to the Ministry of Oceans and Fisheries emphasized that it made more sense for it to have oversight of the industry, since it was in charge of the development of marine resources and energy.¹⁸ Those who opposed such a transfer pointed to the connection between policies related to offshore plants and policies associated with energy development during a period of rising energy prices.

This conflict over the question of who should have jurisdiction of the offshore-plant industry continued, and the lack of a coordination mechanism within the government meant that policy implementation stalled out.

Summary

According to the analytical framework of this study, the first stage can be classified as a symbolic implementation phase. South Korea's offshore-plant industrial policy emerged amid a high level of policy goal ambiguity and a high level of interorganizational conflict. Since the goal of offshore-plant industrial policy was not clearly defined, different interpretations among different actors were inevitable. Even central government agencies did not agree. While the Ministry of Knowledge Economy (before 2013)/the Ministry of Trade, Industry, and Energy (after 2013) focused more on engineering aspects and saw this policy as connected to the technology industry, the Ministry of Land, Transportation, and Maritime Affairs (before 2013)/the Ministry of Oceans and Fisheries (after 2013) focused more on offshore part and viewed this policy as associated with the maritime service industry. Uncoordinated claims eventually led to jurisdictional conflicts.

Even worse, the high level of goal ambiguity led the policy implementation process in the wrong direction. Since offshore plants are technology-intensive in nature,

have jurisdiction over the offshore plant industry dates back to the Roh Moo-hyun administration. The Ministry of Oceans and Fisheries insisted that it had jurisdiction just because it is a marine-related agency (interview with a professor in the Department of Naval Architecture and Ocean Engineering, Seoul National University, November 9, 2016).

18. The Knowledge Economy Committee meeting was held on February 5, 2013, and the agenda was a legislative bill of the Government Organization Act proposed by Lee Han-gu.

mobilizing additional resources for R&D was essential for successful policy implementation. However, as noted, the government as a whole did not know much about the industry itself. In fact, the government reduced the budget earmarked for R&D.¹⁹

Even when a policy is ambiguously defined, conflict can arise if the symbolic meaning of policy goals matters to certain actors.²⁰ In the case of offshore-plant industrial policy, the fact that the offshore plant industry is connected to general maritime affairs was important to the Ministry of Land, Transportation, and Maritime Affairs / Ministry of Oceans and Fisheries and whether it had jurisdiction or not directly affected its organizational identity.

The fact that the policy was called “offshore-plant industrial policy” shows the importance of power relations during this period. The term ‘offshore plant’ is rarely used in the global business world, since a “plant” is a term for a facility where end products are made. “Offshore platform,” “offshore engineering,” or “offshore business” are terms more commonly used. The terminology used in South Korea indicates that both private companies and the government got on board with this seemingly lucrative industry without having much understanding of it (Sisapress, 2016). Another reason the term “offshore plant” was used in South Korea was the strong influence of inland plants. Inland industries were also hit by global recession and thus wanted to have a hand in the new business.

According to Matland (1995, p. 168), symbolic implementation occurs in cases of “confirming new goals, reaffirming a commitment to old goals, or emphasizing important values and principles.” The South Korean government impetuously initiated and implemented offshore-plant industrial policy in order to confirm a new goal: the promotion of the offshore plant industry as a measure for salvaging the shipbuilding industry. Another important feature of symbolic implementation was revealed as related actors formed different coalitions based on their differing interpretations of policy goals and means. The attempt of the inland plant industry to influence its offshore counterpart can be seen in this regard.

19. The strategic planning team in the Ministry of Knowledge Economy proposed a total R&D budget of US \$14.5 million for fiscal year 2012, but it was eventually cut to US \$3 million (Money Today, 2011).

20. Generally, a high level of policy ambiguity leads to a low level of conflict—no conflict of interests among actors can arise if the policy goal is unclear. Thus, policy makers sometimes use ambiguity to elicit more compliance.

The Second Stage (from March 2013 to March 2015): Experimental Implementation

The second stage started in March 2013, when President Park undertook a governmental reorganization, and lasted until March 2015, when the political and economic scandal surrounding Daewoo Shipbuilding and Marine Engineering surfaced in the South Korean media. Interorganizational conflict subsided, but the level of policy goal ambiguity remained high.

High Level of Ambiguity

Both the Lee and Park administrations announced the offshore-plant industrial policy development plans, the former on May 9, 2012, and the latter on November 19, 2013. However, the goals and targets of offshore-plant industrial policy remained ambiguous at best. Although there was a gap of a year and a half between these two plans and the business environment surrounding the shipbuilding industry changed dramatically during this period, the overall frame of the second government plan was virtually the same as that of the first plan, indicating that no efforts had been made to delve more deeply into how to approach the new industry.²¹

The Singaporean case illustrates the point. Instead of insisting on sticking to the same development plan, Singapore quickly adapted its policy to the new environment created by the global economic crisis. For instance, the Singaporean government placed the highest priority on providing safety nets for marine and offshore engineering companies so that they would be able to stay in business during the troubling financial times (Singapore Ministry of Trade and Industry, 2016). The government introduced an internationalization finance scheme and secured a bridging loan in order to facilitate marine and offshore engineering companies' access to working capital and financing.

The South Korean government did not force the big 3 shipbuilding companies to take preventive measures to guard against financial risk.²² Competing for more and larger contracts, the big 3 accepted "heavy tail" contracts, under the terms of which

21. Both plans proposed development strategies such as localization of related materials and tools, the securing of skilled engineers, and the development of an industrial ecosystem infrastructure.

22. An informed business expert pointed out that the South Korean government hardly analyzed the risk that shipbuilding companies faced. The government focused on the promotion of the industry while ignoring risk management (interview with a current employee of Daewoo Shipbuilding and Marine Engineering, December 17, 2016).

foreign buyers make a larger payment later in the building process. The South Korean government was blinded by rosy prospects as the contract orders peaked in 2012 and 2013 (Asia Economy, 2016). Although winning contract bids looks like a success, heavy tail contracts are subject to debt surges if not properly managed. The South Korean government had little understanding of the financial risk involved and in fact encouraged such deals so as to maximize South Korea's market share in the global market. It was a double-edged sword.

During this period, priority ambiguity as well as mission comprehension ambiguity emerged. In general, governments implement various policies within a budget. Governments should set priorities depending on the importance and timeliness of policies. In the case of offshore-plant industrial policy, the South Korean government was not consistent in carrying out the policy. For example, according to Kim Han-pyo, a national assemblyman, the government reduced the budget for the offshore-plant industrial policy in the name of equity with other (inland) industries. As a result, the offshore-plant industrial policy began to drift.

Low Level of Conflict

With the governmental reorganization in March 2013, the interorganizational conflict between the Ministry of Trade, Industry, and Energy and the Ministry of Oceans and Fisheries was formally resolved. Although these agencies divided ocean-related policies where appropriate, the former was designated the principal government agency in charge of offshore-plant industrial policy. It focused more on the production of resources such as petroleum and gas, while the Ministry of Oceans and Fisheries concentrated more on technology development, especially in maritime resources. As a part of their cooperation, the ministries also decided to establish a joint response system for the offshore plant industry (Money Today, 2013).

A meeting chaired by trade and industry minister Yoon Sang-jik at which pending issues related to the shipbuilding and offshore plant industry were discussed also reflected a lull in conflict and a joint effort at mending fences.²³ Putting the catch phrase "turn crisis into opportunity through cooperation and innovation" into action, Minister Yoon officially promised to cooperate with related organizations such as the Ministry of Oceans and Fisheries and the Ministry of Employment and Labor in the development of the offshore plant industry.

23. The meeting was held on August 13, 2014, and the Ministry of Trade, Industry, and Energy issued a press release summarizing the proceedings.

Summary

The combination of a high level of policy goal ambiguity and a low level of conflict is likely to lead to experimental implementation. As predicted by the conceptual framework of this study, contextual conditions determine the specific implementation process.

During the second stage, intergovernmental conflicts were settled. However, the Ministry of Trade, Industry, and Energy was overly optimistic about the prospects for the new industry and thus repeatedly ignored early warnings from the market. For instance, major industrial think tanks such as the Korea Institute for Industrial Economics and Trade and the Hyundai Research Institute reported gloomy prospects for the offshore plant industry.²⁴ Nevertheless, the Ministry of Trade, Industry, and Energy did not take adequate measures; instead, it continued promoting its ambiguous policy lines. The government still had a poor understanding of the policy and because it sought to fund inland industries equally, it failed to mobilize enough financial resources.

Nevertheless, although the overall development plan was similar to that of the former period, the government did recognize that the lack of professional manpower was the biggest problem facing the offshore plant industry, and it adopted various measures to address this problem, including the expansion of training programs, the provision of academic support, and the collaboration with foreign universities. As Matland (1995) argues, in the experimental implementation phase, ambiguity should be seen as an opportunity to develop new means and goals, and the policy itself should function as the catalyst for developing new technology. This process of implementation can be seen as an educational venture that contributes to reducing the level of policy ambiguity.

The Third Stage (from March 2015 to February 2017): Political Implementation

This period ranges from March 2015, the time when news of problems at Daewoo Shipbuilding and Marine Engineering broke, to February 2017. On July 15, 2015, the Financial Supervisory Service (FSS) undertook a review of the Daewoo Shipbuilding and Marine Engineering's accounting transparency and found that Daewoo did not record the accrued debts resulting from the company's venture into offshore plant development. During this period, a low level of ambiguity prevailed, as the policy goal

24. According to a 2014 prospects issued by the Korea Institute for Industrial Economics on November 28, 2013, the shipbuilding industry was expected to experience a 10% decline in production in 2014. The Hyundai Research Institute also announced that the shipbuilding industry would be positioned at the bottom during the 2014 recession period.

became considerably clearer. However, the level of conflict intensified, as there were serious divisions within the Ministry of Trade, Industry, and Energy.

Low Level of Ambiguity

Offshore-plant industrial policy was finally clearly articulated, as mission comprehension ambiguity and priority ambiguity dissipated. Aside from the Ministry of Trade, Industry, and Energy and the Ministry of Oceans and Fisheries, relevant governmental organizations began to understand the necessity and importance of this policy.

As a part of its efforts to improve the offshore plant industry, the South Korean government developed a global standardization plan. During the preceding five years, it had been pointed out that the key to offshore plant industrial development lay in the localization of parts and components and global standardization. Since there was no specific standard for the examination and evaluation system, offshore plant industries had no choice but to accept customers' frequent requests for design changes and unilateral rescission of contracts. In response, the Ministry of Trade, Industry, and Energy held a meeting to establish global standardization for offshore plants.²⁵ In this meeting, the current status of standardization was reported and a comprehensive plan for shipbuilding and offshore plant standardization was presented.

The government also developed an exit strategy. According to an interview with a business expert, the government recognized the limits of the South Korean offshore plant industry and decided to give up on the development of high technology and to instead spend the R&D budget on assembly productivity improvement.

In conclusion, the government tried to home in on the problems with the offshore plant industry and to provide more fundamental solutions. Such governmental efforts reveal a relatively low level of goal ambiguity.

High Level of Conflict

While policy goals were clarified during this period, the conflict within the Ministry of Trade, Industry, and Energy intensified. As one of the biggest government agencies, it oversees a variety of areas, including industry, technology, trade, investment, energy, and resources and thus has many divisions. The turf war among different divisions within an agency is inevitable. Within the agency, the bureaucratic conflict between "industry development" and "management of energy resources" has persisted

25. The Ministry of Trade, Industry, and Energy issued a press release summarizing the proceedings of the meeting on December 4, 2015.

(Aju News, 2016).

The ascendancy of the shipbuilding and plant division within the agency has been represented as a Cinderella story. As compared to existing divisions, it enjoyed freedom in terms of human and financial resources.²⁶ When news of the accounting fraud at Daewoo Shipbuilding and Marine Engineering broke, other divisions, especially the energy and resources policy division, exploited the financial scandal, using it as an opportunity to blame the shipbuilding and plant division and to regain ground. In this process, intraorganizational conflict became severe and negatively affected the implementation of the policy.

Summary

As a result, the process of policy implementation became truly political. Because the level of ambiguity was low, it might have been expected that the implementation process would go smoothly, as all the actors seemed to understand what they needed to do to develop the offshore plant industry as well as what the industry was. However, severe intraorganizational conflict gave rise to a political power game within the Ministry of Trade, Industry, and Energy and had a major impact on the implementation outcomes. As Matland (1995) notes, an important principle in political implementation is that implementation outcomes are decided by power relations.

Had the operating divisions within the Ministry of Trade, Industry, and Energy been less focused on guarding their own territory and seeking new ground, they may have seen the warning signs and responded more effectively to the looming catastrophe that eventually greeted the offshore plant industry in South Korea. Even though the policy goal was quite clear, due to the high degree of intraorganizational conflicts and power games, the South Korean government did not detect policy errors and therefore missed the opportunity to correct them. The outcome was policy drift and a huge financial scandal.

26. According to a business expert, the situation changed dramatically after the shipbuilding and offshore plant industries and the automobile industry were combined in the transportation division. At that time, the contribution of automobile industry to the domestic economy was huge. The shipbuilding and offshore plant industry was therefore sidelined within the bureaucratic hierarchy (interview with a Korea Offshore and Shipbuilding Association staff member, February 28, 2017).

CONCLUSION AND POLICY IMPLICATIONS

This study has examined transformations in the implementation process of the offshore-plant industrial policy in South Korea and unraveled how and why the South Korean government missed the opportunities to correct earlier policy errors.

South Korea's offshore-plant industrial policy has undergone three different but related stages from symbolic to experimental to political implementation since its introduction in 2012. For South Koreans in both the public and private sectors, the offshore-plant industry was practically new despite their great success in the shipbuilding industry. Nevertheless, they ventured in this unknown world. Inevitably, policy goals and targets were ambiguous at best. Over time, the policy goal ambiguity was mitigated through learning, but it turned out to be too late.

Changes in the level of organizational conflict contrasted with changes in policy ambiguity. The jurisdictional conflict between central government agencies negatively affected the implementation outcomes in the early period. After a short lull in conflict, intraorganizational conflict within the Ministry of Trade, Industry, and Energy emerged, preventing the policy from being implemented smoothly.

In conclusion, the combination of policy goal ambiguity and organizational conflict between and within government agencies caused the policy drift. For sure, the moral laxity of government bureaucrats and their being held captive by special interests are to be blamed for the crisis in the offshore-plant industry, but the fundamental explanation for this crisis lies in the policy process itself, represented by ambiguous policy goals and governmental conflicts within and between central agencies. Bureaucratic culture and practices dwarfed bureaucratic professionalism and policy entrepreneurship. The consequence was ambiguous policy goal orientation. The lack of leadership and coordination mechanisms led to excessive competition between government agencies and divisional offices. Maybe the case of offshore-plant industrial policy is very specific and cannot be generalized without the risk of oversimplification. Notwithstanding, the story of offshore-plant industrial policy reflects the degradation of the South Korean bureaucracy that was once praised for its effectiveness and targeted approach.

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