

International Cooperation to Build the APTERR for Food Security-A Delphi Study

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〈Abstract〉

This study is conducted to determine both the exogenous and endogenous motivations for the institutionalization of international cooperation by interviewing policymakers from East and South Asian countries to examine the motivation for institutionalizing intergovernmental cooperation. To this end, ten experts were recruited and a panel survey was conducted using the Delphi method. This study confirms when a crisis is seen as ① serious; ② within a government responsibility to solve; ③ recurrent; ④ internationally common; and ⑤ common solution, the institutionalization of international cooperation may occur. This can be called the '5+1 Condition Model.'

Thus, this study explains the logic of the institutionalization of international cooperation, which is shown in the '5+1 Condition Model.' This study narrows the focus on crises to food crises, a type of crisis that easily motivates a government to pursue institutional cooperation. A food crisis is usually serious, a government responsibility, and recurrent. Thus, a food crisis often meets the '5+1 Condition Model.' By analyzing the institutionalization process of the APTERR, this study demonstrates how a food crisis pushes governments toward the institutionalization of international cooperation based on the outlined in the '5+1 Condition Model.' This study is meaningful in providing primary data for international cooperation research.

Keywords: International cooperation, Delphi method, food crisis, APTERR, global crisis

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1. Introduction

In the era of COVID-19, international cooperation is one of the critical issues among the governments in the world, which includes a recent example of the COVID-19 Vaccine Global Access (COVAX) proposal (Emanuel, et al., 2020). However, cooperation requires neither altruism nor government – both of which are often in short supply at the international level (Dai, Snidal, and Sampson, 2010). International cooperation has been defined as the coordinated behavior of independent and possibly selfish actors that benefits them all (Taylor, 1976; Axelrod, 1981), the definition of which is general in both actors and issues. Moreover, international cooperation is not always a good thing, at least from the perspective of those excluded or targeted. For instance, international sanctions involve cooperation against target countries (Drezner, 1999).

International cooperation may also require an institution that can provide the needed information (Calvert, 1995). In addition, institutionalization is the process by which social processes, obligations, or actualities come to take on a rule-like status in social thought and action (Meyer and Rowan, 1977). Therefore, in this study, “institutionalization of international cooperation” is defined as a form of international cooperation that has achieved a significant extent of integrity in terms of formal and substantive aspects.

However, the question of “Why cooperate?” is often answered by pointing to two concrete benefits of international cooperation. First,

it may be due to the gains of minimizing the negative or maximizing the positive spillover effects (Haas, 1959) the actions of some countries have on others. Second, it is likely to be associated with the gains from the provision of global public goods. Ernst Haas (1959) expected a virtuous circle of functional integration. Haas expected that once a government experiences integrated governance, multinational enterprises relate their interests to the success of integrated governance, and labor union and other interests group who will benefit from integration will support the success of the integration; furthermore, when other interests group witnesses the benefits of the integration, they will demand more institutionalization of international cooperation in a wide area, and by doing so it will be the first step to an intensification of integration. This diffusion effect of serial cooperation and integration, the so-called “Spillover Effect”, is the optimistic expectation of Haas (1964). The spillover effect explains the history of institutionalization of international cooperation from the European Coal and Steel Community (ECSC) to the European Union (EU). When European governments integrated their policy to the ECSC, related industries and labor unions attributed their success to ECSC.

Institutionalization of the ECSC can be the comparative institution when analyzing the APTERR (ASEAN Plus Three Emergency Rice Reserve). Despite being cooperative for different fields, these two institutions have similarities. Firstly, both institutions were founded to overcome a recurrent crisis by managing a major resource. Secondly, both institutions limit sovereignty (policy independence). However, the ECSC and the APTERR have many differences in their impacts.

The ECSC was designed to regulate the coal and steel industry under a common market system. The ECSC has diverse policy measures, such as subsidy, fine, production quota, and price control. Thus, the ECSC's decisions have deeply affected European economies.

Many interest groups have understood the benefits of integrated governance. There were many businesses and unions which supported ECSC and its spillover. On the other hand, the APTERR is an emergency rice reserve that has an impact only in times of emergency. Usually, in ordinary situations, the rice market is not regulated by the APTERR. Most rice producers do not understand the impact of the APTERR and rice consumers do not care about the APTERR's decisions. The APTERR can demonstrate its impact and usefulness only when there is crisis. Therefore, the APTERR is not expected to spill over to other areas because no interest groups demand it. However, after several food crises recur and the APTERR shows its usefulness, the APTERR will be redesigned to cover more food items and food policies; when the impact is strong enough, a spillover effect can be expected.

The APTERR has remarkably achieved its mandate and still positively works to prevent rice speculation in the region. In less than a decade after its establishment, the excellent work of the APTERR has solidified the organization's position as a regional food reserve system in the international community. This study is conducted to determine both the exogenous and endogenous motivations for the institutionalization of international cooperation by interviewing expert panel to examine the motivation for institutionalizing intergovernmental cooperation.

2. Research Methodology

To achieve the aim of this study, ten experts were recruited and a panel survey was conducted using the Delphi method. It has been reported that the Delphi method is an iterative and anonymous process that aims to achieve consensus on a subject after multiple rounds of discussion with controlled feedback. The Delphi method has shown to be valid to gather experts' opinions on a specific problem (Van de Ven-Stevens, et al., 2015) and allows asynchronous interaction with the international expert panel. The experts could complete the surveys at their convenience. The anonymity feature of the Delphi method allowed for free communication without expert opinions being influenced by the reputation or expertise of others (Steurer, 2011).

1) Expert Panel

This study used the Delphi process to survey experts. Because the definition of 'an expert' is mostly subjective, the expert panel does not need to be a representative sample of any particular population. Baker (2006) concluded that researchers must strive for the 'best options' when choosing and defending the most appropriate expert panel (Baker, Lovell and Harris, 2006). This study invited 10 experts from the international food and agriculture sector to participate in the survey via e-mail that contained information about the study. The panel of experts who participated in the final round consisted of four

scholars (Ph.D. holders), two employees of state-owned enterprises on food trade with more than 10 years of experience, and four government officials who have more than two years of experience with food reserve policy and a minimum of 10 years of experience in government. Initially, we invited 12 experts and 10 experts (83.3%) participated in the Delphi process, all of whom completed all three surveys. <Table 1> presents the demographic characteristics of the experts who participated in the final round.

<Table 1> The Demographic Characteristics of Expert Panel

Expert No.	Age	Gender	Nationality	Career
1	51	Male	Thailand	Scholar
2	39	Female	Korea	Scholar
3	45	Male	Cambodia	Scholar
4	37	Female	Korea	Scholar
5	48	Male	Vietnam	Businessman
6	43	Male	Korea	Businessman
7	38	Female	Korea	Official
8	39	Male	Korea	Official
9	52	Male	The Philippines	Official
10	41	Female	Laos	Official

2) Research Instruments

(1) First Round: Open Questionnaire

In the first round, an open questionnaire was provided asking for personal information and opinions on international cooperation, considering the topic of this thesis - what motivates governments toward the institutionalization of international cooperation?

Question 1. What motivates international cooperation for food

security?

Question 2. To deal with Global Food Crisis, what is the role of the APTERR?

Question 3. Do you have any additional comments on this topic?

(2) Second and Third Round: Five-Point Likert Scale

In the second and third rounds, a series of surveys asked the participants to respond to 5-point Likert-type questions. Regarding Likert scales, there is a discrepancy regarding 1) how to properly use Likert scales; 2) what Likert scales are more suitable for research and Delphi processes (i.e., 3-point, 5-point, 7-point, or 9-point Likert scales); and 3) how to analyze the data obtained from Likert scales(Waiters, Kabouter, and Stillwater, 2010). The 5-point Likert scale is a unidimensional scaling method expressed as a statement with categories of choice. Researchers have suggested that the 5-point Likert scales have feasibility, reliability, and validity to capture an individual's opinions regarding a topic. The five categories of the scale are ① Strongly Disagree, ② Disagree, ③ Neither Agree nor Disagree, ④ Agree, ⑤ Strongly Agree.

3) Data Collection

The Delphi technique was used for gathering data from ten experts. This study performed three Delphi rounds, conducted by e-mail for about a month from Nov. 1, 2020, to Feb. 28, 2021. Each Delphi-round was composed of data collection, data analysis, and controlled feedback. Questions in the first round of the Delphi

survey were purposefully broad and invited participation in the spirit of brainstorming. Thus, the first Delphi survey was conducted in an open questionnaire to derive unbiased opinions from the ten panel members of the study. The second Delphi round was conducted based on the results of the first questionnaire. The third Delphi round was also performed using the 5-point Likert scale based on the results of the second questionnaire. <Table 2> shows the research process using the Delphi method.

<Table 2> Research Process Using the Delphi Method

Round	Question Format	Question Content	Analysis Method
1 st round	Open questions	Expert panel member's views on international cooperation, institutionalization, and APTERR	Content analysis
2 nd round	Structured Likert 5-point scale type	Importance assessment for detail items in each area derived from content analysis	Calculation for Mean, Standard Deviation, Content Feasibility, CVR
3 rd round	Structured Likert 5-point scale type	Reassessment and feasibility assessment of the importance of each item	Calculation for Mean, Standard Deviation, Content Feasibility, CVR

4) Data Analysis

In principle, it is considered that consensus is well reached if the coefficient of variation of participating experts is greater than zero

and less than 0.5; an additional investigation is required if the value is greater than 0.5 and less than 0.8; additional investigation should be required if the value is greater than 0.8 (Dajani, Sincoff, and Talley, 1979). In all three rounds of this study, the coefficients of variation of all items were derived below 0.5, which means that experts have reached a very good agreement. Data analysis applied formula of the Content Validity Ratio (CVR) technique developed by Lawshe(1975). The CVR proposed by Lawshe is a linear transformation of a proportional level of agreement on how many 'experts' within a panel rate an item 'essential' calculated in the following way:

$$CVR = \frac{\text{Agree} - N/2}{N/2}$$

where CVR is the content validity ratio, 'Agree' represents the number of experts who gave answers '4-Agree' or '5-Strongly Agree' and N is the total number of panel members(Ayre, and Scally, 2014). The final evaluation to retain the item based on the CVR is depends on the number of panelists. <Table 3> reveals the guideline for the valid value of CVR for the evaluated item to be retained. In this study, the CVR should be higher than 0.62, since the number of panel members was 10(ibid.).

〈Table 3〉 Minimum Value of CVR, $p=.05$

Number of Panelists	Minimum Value
5	0.99
6	0.99
7	0.99
8	0.75
9	0.68
10	0.62
15	0.49
20	0.42
30	0.33

3. Results and Discussion

After conducting the three Delphi surveys presented in the research method, the following results were obtained.

1) First Delphi Round

After conducting the first Delphi survey of the expert panel, this study was able to obtain various answers for three questions. More than 50% of these questions answered by the panel are compiled in 〈Table 4〉. Based on this, the second Delphi survey questionnaire was created using the Likert 5-point scale, as noted in the research methods section.

〈Table 4〉 Panel's Key Answers to the First Delphi Survey

Question	Key Answer	Frequency (%)
Question 1. <i>What motivates the institutionalization of international cooperation for food security?</i>	The food crisis will lead to international cooperation	100
	Institutionalization of international cooperation is required to deal with food crisis.	80
	Food crisis creates a serious global crisis that requires international cooperation	70
Question 2. <i>To deal with Global Food Crisis, what is the role of APTERR?</i>	The APTERR is institutionalization of international cooperation body, which provides substantial help in resolving food crisis	80
	The APTERR is an international body for an institutionalization of international cooperation, which provides substantial aid in resolving the food crisis.	80
	International cooperation through the APTERR must be used to counter the food crisis.	70
	The APTERR will go a long way towards promoting international cooperation.	70
	The APTERR can be a solution to the global food crisis as well as the local food crisis.	60
	The APTERR is expected to move beyond the Food Crisis Resolution Agency to international cooperation organizations, such as the EU	60
Question 3. <i>Do you have any additional comments on this food crisis and the institutionalization of international cooperation?</i>	Food crisis is a problem that cannot be solved by each government.	80
	Food crises have existed in the past, and repeat themselves.	70
	Food crisis will emerge again in the future.	70

Source: Author of this paper created from the Delphi study.

(1) Key Answers to Question 1

All ten experts suggested that a food crisis would lead to the institutionalization of international cooperation. In particular, eight experts explicitly mentioned that the institutionalization of international cooperation would be needed to cope with a food crisis. Additionally, seven experts said that a food crisis could create a serious global crisis that would require the institutionalization of international cooperation. However, there was an expert who expressed a negative view of the institutionalization of international cooperation. However, this panel member seems to be worried that newly institutionalized international cooperation may create an organization without ownership and responsibility:

“Relatively, it does not work so well. Because ‘institutionalized cooperation’ means a new co-working framework that belongs to neither of the national parties, any party cannot admit it as their institution. This phenomenon arises where the in-charge persons do not consider the workability of the institution from the view of comprehensive market approach.”(Expert 1)

(2) Key Answers to Question 2

Experts’ main comments are as follows: the APTERR is institutionalization of international cooperation body, which provides substantial help in resolving food crisis (80%); the APTERR is an international body for the institutionalization of international cooperation, which provides substantial aid in resolving the food crisis (80%); International cooperation through the APTERR must be used to counter a food crisis (70%); the APTERR will go a long way

towards promoting international cooperation (70%); the APTERR can be a solution to global food crises as well as local food crises (60%); the APTERR is expected to move beyond the Food Crisis Resolution Agency to international cooperation organizations, such as the EU (60%). According to their answers, experts mostly agreed on the need to establish the APTERR. However, there were different views on the role of the APTERR or its future status:

“I acknowledge the need for an organization like the APTERR to deal with a potential global food crisis. But I doubt whether the APTERR will function properly or survive in the future. I’m not sure if the APTERR will be an organization like the EU” (Expert 3)

(3) Key Answers to Question 3

This study required expert panel members to have a variety of topic-related opinions for brainstorming, which are as follows: A food crisis is a problem that cannot be solved by each government (80%); Food crises have existed in the past, and repeat themselves (70%); Food crisis will emerge again in the future (70%). Based on these answers, the second Delphi survey was conducted.

2) Second Delphi Round

The expert panel achieved consensus on accepting 10 items - 4 topics on international cooperation for food crisis and 6 topics on institutionalization, the APTERR, and its role. In this study, the CVR should be higher than 0.62, since the number of panel members is 10 (Lawshe, 1975). On this basis, the following agreement in

opinions of the panel members can be adopted in this study: Food crises have existed in the past and repeat themselves. They will recurrent again in the future (CVR=1,0); The APTERR is an international body for the institutionalization of international cooperation, which provides substantial aid in resolving a food crisis (CVR=0,8); the APTERR will go a long way towards promoting international cooperation (CVR=0,8). Thus, this study confirmed that experts agreed that a food crisis could reoccur and the institutionalization of international cooperation was necessary. Furthermore, experts also reached the conclusion that the institutionalization of international cooperation through solutions like the APTERR would benefit governments.

However, indicators with values of 0,62 and below were rejected and removed from the final questionnaire: the APTERR is institutionalization of international cooperation body, which provides substantial help in resolving food crisis (CVR=0,2); the APTERR will go a long way towards promoting international cooperation (CVR=0,4); the APTERR can be a solution to the global food crisis as well as the local food crisis (CVR=0,4) ; the APTERR is expected to be developed beyond the food crisis resolution agency to larger and multipurpose international cooperation organizations, such as the EU (CVR=0,2).

In conclusion, experts in round 2 agreed that international cooperation is needed in times of a food crisis and the institutionalization of international cooperation through a mechanism such as APTERR is helpful, but they are negative about the role of the APTERR in the case of a global food crisis or the potential for it

to develop into an institutionalized organization such as the EU. Therefore, this study asked experts again why APTERR will not likely evolve into an institutionalized organization like the EU as an open-ended feedback question. These are some answers that were given:

“The fact that the price of rice is not stable also brings a crisis in the rice industry in the long run. In order to resolve the food crisis, we need a cooperative organization that can stabilize rice prices as well as relief functions in case of food crisis, but the APTERR has yet to play such a role.”(Expert 2).

“There will be no transfer of control of the rice industry to the APTERR by each member of the APTERR. The governments will not allow the APTERR to intervene in their rice industry policies.”(Expert 5).

“China is participating in the APTERR, but it is questionable whether China, which should focus on the supply of rice to 1.5 billion people, will be able to support other countries in the event of a food crisis.”(Expert 7).

“The European Coal and Steel Community has taken over much of the initiative in industrial policy from governments in Europe and has the authority to stabilize prices. As a result, many companies and coal unions in Western Europe were forced to be affected by the European Coal and Steel Community. The European Coal and Steel Community, which has gained such a strong voice, was able to develop into the EU. But the APTERR has no significant impact on its member states' companies in the process of producing, consuming or selling rice, and farmers rely more on their governments to subsidize rice production than the APTERR, so we cannot expect a 'spillover effect' from the APTERR.”(Expert 10).

To summarize, experts mentioned that the APTERR is not yet institutionalized enough to affect food policies in member countries. Therefore, this study evaluates the conditions under which the institutionalization of international cooperation related to the food crisis emerges, focusing on the views of experts derived from this round. Based on this, the third Delphi survey was conducted, which asks experts what conditions are needed for governments to have institutionalization of international cooperation if a food crisis repeats in the future.

〈Table 5〉 Questions of the Second Delphi Survey

Question	Mean	SD*	CVR**
Q 1. Food crises have existed in the past, and repeat themselves. They will recurrent again in the future.	5.0	0	1.0
Q 2. The food crisis creates a serious global crisis.	3.9	0.54	0.6
Q 3. The food crisis is a problem that cannot be solved by government units. The food crisis calls for international cooperation	3.7	0.97	0.6
Q 4. Institutionalization of international cooperation is required to deal with food crisis.	3.6	0.84	0.6
Q 5. The APTERR is institutionalization of international cooperation body, which provides substantial help in resolving food crisis	3.5	0.95	0.2
Q 6. The APTERR is an international body for an institutionalization of international cooperation, which provides substantial aid in resolving the food crisis.	4.1	0.57	0.8
Q 7. International cooperation through the APTERR must be used to counter the food crisis.	4.0	0.82	0.6

Q 8.	The APTERR will go a long way towards promoting international cooperation.	4.0	0.47	0.8
Q 9.	The APTERR can be a solution to the global food crisis as well as the local food crisis.	3.8	0.63	0.4
Q 10.	The APTERR is expected to be developed beyond the food crisis resolution agency to larger and multipurpose international cooperation organizations, such as the EU?	3.6	0.84	0.2

SD*: Standard Deviation, CVR**: Content Validity Ratio

3) Third Delphi Round

There are certain types of crises that motivate a government toward institutionalization of international cooperation; they are serious, regarded as a government responsibility, recurrent, internationally common, and holding an internationally common solution. Then, a government is motivated toward the institutionalization of international cooperation under a crisis which meets these conditions. Furthermore, when there are regionally shared mutual interests, there will be institutionalization of regional cooperation.

The third-round survey included the items that achieved consensus in both the first and second Delphi rounds. After the third Delphi round the expert panel reached consensus on accepting these statements; In the food and agriculture sector, crises are the major determinants to push a government toward the institutionalization of international cooperation; however, not all crises can lead to such outcomes (CVR=1.0); In the food and agriculture sector, international cooperation occurs when a crisis should be viewed as “serious” (CVR=1.0); In the food and agriculture sector, international

cooperation occurs when a crisis should be viewed as “within a government responsibility” (CVR=1.0); In the food and agriculture sector, international cooperation occurs when a crisis should be viewed as “recurrent” (CVR=1.0); In the food and agriculture sector, international cooperation occurs when a crisis should be viewed as “internationally common” (CVR=1.0); In the food and agriculture sector, institutionalization of international cooperation occurs when a crisis should be viewed as “having an internationally common solution” (CVR=1.0); In the food and agriculture sector, the institutionalization of international cooperation occurs only when these five conditions (crisis that is serious, within a government responsibility, recurrent, internationally common, having internationally common solution) are met (CVR=0.8).

〈Table 6〉 shows that the panel agreed to all the conditions for institutionalization of international cooperation to take place during the food crisis. However, the statement “all five conditions must be satisfied for cooperation between countries” failed to reach a unanimous consensus among the expert panels, though the value was significant (CVR = 0.8).

〈Table 6〉 Questions of the Third Delphi Survey

Questions	Mean	SD	CVR
Q1. In food and agriculture sector, crises are the major determinants that can push a government toward institutionalization of international cooperation; however, not all crises can lead to such outcomes.	4,7	0,48	1,0
Q2. In food and agriculture sector, institutionalization of international cooperation occurs when a crisis should be viewed as 'serious'	4,7	0,48	1,0
Q3. In food and agriculture sector, institutionalization of international cooperation occurs when a crisis should be viewed as 'within a government responsibility'	4,3	0,48	1,0
Q4. In food and agriculture sector, institutionalization of international cooperation occurs when a crisis should be viewed as 'recurrent'	4,5	0,53	1,0
Q5. In food and agriculture sector, institutionalization of international cooperation occurs when a crisis should be viewed as 'internationally common'	4,5	0,53	1,0
Q6. In food and agriculture sector, institutionalization of international cooperation occurs when a crisis should be viewed as 'having internationally common solution'	4,2	0,42	1,0
Q7. In food and agriculture sector, institutionalization of international cooperation occurs only when these five conditions are met.	4,0	0,47	0,8

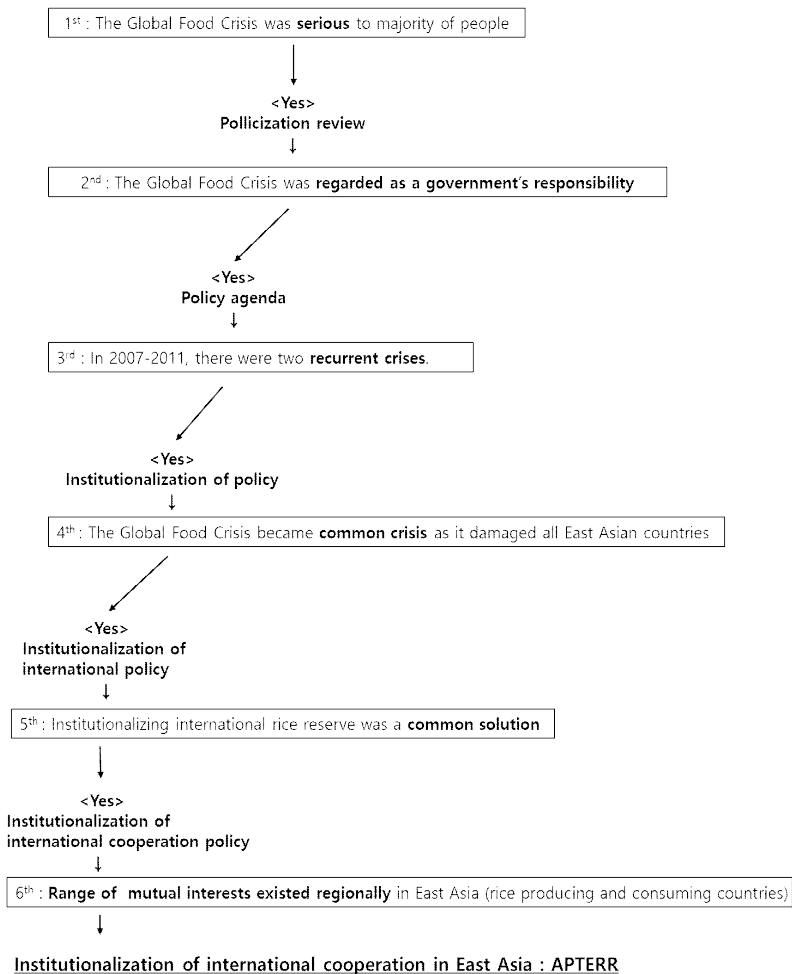
SD*: Standard Deviation, CVR**: Content Validity Ratio

4) The APTERR in the '5+1' Condition Model

In general, a crisis usually triggers the urgency of international

institutional cooperation. Crises come in different forms: intra-state crises between and among different groups within a state (e.g. civil/ethnic strife, religious conflicts, crime, high unemployment); inter-state crises between two or more countries (e.g., a violent conflict over maritime entitlements or territorial disputes, economic tensions leading to trade war), and trans-state crises (e.g., natural disasters, pandemics, human trafficking, terrorism, and financial crisis).

A single international crisis usually results in short-term cooperation between and among countries until such is solved. However, a recurrent crisis is more likely to trigger greater institutionalization of cooperation. According to the results of this study, institutionalization of international cooperation such as the APTERR can occur as follows; first, the Global Food Crisis was serious to majority of people; second, the Global Food Crisis was regarded as a government's responsibility; third, there were two recurrent crises from 2007 to 2011; fourth, the Global Food Crisis became a common crisis as it damaged all East Asian countries; fifth, institutionalization of international rice reserve was a common solution. As a result of the above process, institutionalization of international cooperation in East Asia occurred, which was the APTERR(Figure 1).



〈Figure 1〉 The APTERR in the '5+1 Condition Model'

Source: Author of this paper created

In most cases, crises are the real determinants that can force nation-states to pursue international cooperation; however, not all crises can lead to such outcomes. Only those crises that can meet

the five conditions can result in international cooperation. Such a crisis should be seen as ① serious; ② within a government responsibility to solve; ③ recurrent; ④ internationally common; and ⑤ common solution. Finally, institutionalization of international cooperation can occur. This can be called the '5+1 Condition Model.'

5) Discussion

The Global Food Crisis of 2007-2011 was a crisis. It was different from previous cases of local food shortages, which could be compensated for by the international trade of rice. During the Global Food Crisis, the rice shortage became a matter of survival, especially for urban, low-income populations. As the East Asian urban population has increased in recent decades, the soaring food prices were incredibly damaging. The fear of starvation prevailed in a low-income residential area in Southeast Asian megacities like Jakarta and Manila (Dawe, 2012). When the majority of the population is affected by a crisis, it is a serious crisis. In this situation, all affected governments tried to find a solution to minimize the impact of the crisis.

The Global Food Crisis was regarded as a government responsibility. Even before the crisis of 2007-2011, some government agencies directly supplied low-priced rice to their people, as there is usually a limit on buying this cheaper rice; this kind of dual-price rice exists in the Philippines, Indonesia, Cambodia, and Vietnam. Furthermore, most East Asian governments have the regulatory and political means to control the price of rice. Subsidies and regulations

of the rice market are common policy measures in East Asia. Specifically, domestic speculation and resale of rice are strictly banned in the Philippines, Vietnam, Indonesia, and Malaysia. Even in Japan, rice futures trading has been banned since 1936.

Maintaining a stable rice supply was seen as a government responsibility even before the Global Food Crisis in 2007. As they already had significant experience in food-related policymaking prior to the crisis, and all affected governments were striving to find a solution to the Global Food Crisis, they were pushed into the policy-making process, as the food crisis opened a policy window.

The Global Food Crisis entails double shocks in the global food market. The first shock was in December 2007, and the next one was in December 2010. Namely, there were two recurrent rice crises that needed internal cooperation. If there was only one food crisis at this time, some governments might not have agreed to build a firm institution like the APTERR. However, because of the recurrent nature of food crisis, East Asian governments agreed on building the institutionalization of international cooperation. To prevent and minimize the damage from the next food crisis, the governments determined it would be better to prepare institutionalized policies, rather than one-time policy measures.

In East Asia, the Global Food Crisis was internationally common. No country was free from the crisis. Since the price of these rice-substitute products increased together with the price of rice, even developed countries like Japan, China, and South Korea suffered from high food prices. Northeast Asian governments had enough reason to institutionalize international cooperation.

East Asian governments could easily conceptualize an international rice reserve because they already effectively used the rice reserve policies to stabilize domestic rice markets. Even before the Global Food Crisis, all of the East Asian governments already managed national rice reserves under government control. Therefore, it was easy to understand how a substantial regional rice reserve could effectively mitigate the causes of soaring rice prices by releasing rice reserves.

Furthermore, not only the actual release of rice but also the promise of releasing rice in times of crisis can prevent a food shortage crisis. In short, a regional rice reserve is an effective common solution for a food crisis. This meant there was an effective case for the institutionalization of international cooperation.

Finally, the solution for the crisis could provide mutual interests for the nations involved. Therefore, the food crisis of 2010-2011 in the ASEAN countries satisfied all the '5+1 conditions of the crisis-based model', implying that the institutionalization of international cooperation would occur. The APTERR Agreement was ratified by each of the ASEAN+3 governments and came into effect in July 2012, demonstrating the validity and cogency of the '5+1 Condition Model' (Toyoda and Suwunnamek, 2009).

In this study, the second Delphi surveyed experts' opinion on the question, 'APTERR is expected to be developed beyond the food crisis resolution agency to larger and multipurpose international cooperation organizations, such as the EU?' Experts answered on the negative (CVR=0.2). Although the responses are from international food and agriculture experts who hopes larger international food and

agriculture cooperation, they cannot expect the APTERR's spill over to the larger and multipurpose international organization.

As shown in the results of this study, the '5+1 Condition Model' can be accepted by expert panels from the international food and agriculture sector. In other words, the '5+1 Condition Model' explains the institutionalization of international cooperation in food and agriculture. As this study was conducted specifically among officials related to the food and agriculture sector, it cannot be considered to be a general model for all types of crises in all sectors; however, for the food and agriculture sector, it provides quite useful results.

According to the '5+1 Condition Model', the institutionalization of international cooperation is not a primary policy option of a government because governments prefer policy independence and autonomy. However, when there is a certain type of crisis, a government can be motivated toward institutional cooperation. In the '5+1 Condition Model', the type of crisis that motivates a government toward the institutionalization of international cooperation is serious, regarded as a government responsibility, recurrent, internationally common, and can be addressed through an internationally common solution. The form of institutionalization of international cooperation is explained primarily through the existence of mutual interests. When there are regionally shared mutual interests, there will be institutionalization of regional cooperation.

4. Conclusion

This study is conducted to examine the motivation for institutionalizing intergovernmental cooperation. To achieve the aim of this study, ten experts were recruited and a panel survey was conducted using the Delphi method. This study explains the logic of institutionalization of international cooperation. A government that faces a crisis may choose the institutionalization of international cooperation even though institutional cooperation limits the governments' policy independence. This logic is modeled in the '5+1 Conditions Model'. This study narrows the focus on crises to food crises, a type of crisis that easily motivates a government to pursue institutional cooperation. A food crisis is usually serious, a government responsibility, and recurrent. Thus, a food crisis often meets the '5+1 Conditions Model'. In particular, the Global Food Crisis in 2007-2011 motivated the establishment of the ASEAN Plus Three Emergency Rice Reserve. By analyzing the institutionalization process of APTERR, this study explains with a concrete example how a food crisis pushes governments toward the institutionalization of international cooperation based on the outlined in the '5+1 Conditions Model'.

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〈국문초록〉

아세안+3 비상 쌀 비축제도(APTERR) 구축을 위한 국제협력: 델파이 연구

김 건 민

본 연구는 정부간 협력을 제도화하는 동기를 살펴보기 위해 시행되었는데, 특히 동아시아 및 남아시아 국가들의 정책 입안자들을 인터뷰함으로써 국제 협력의 제도화에 대한 외생적 및 내생적 동기를 모두 확인하고자 하였다. 이를 위해 관련 전문가 패널 10명을 선정하고 3차례의 델파이 연구를 실시했다. 본 연구는 ① 심각한 위기로서, ② 정부 책임하에 해결가능하고, ③ 재발되며, ④ 국제적으로 공통적인 위기이자, ⑤ 공통된 해결책이 있는 위기는 제도화된 국제 협력이 나타날 수 있다는 것을 확인하였다. 이는 '5+1 조건 모델'이라고 할 수 있다.

본 연구는 이와 같이 '5+1 조건 모델'을 도출하여 제도화된 국제 협력에 대한 이론을 설명하고, APTERR의 사례를 중심으로 제도화된 국제협력 과정을 살펴본다. 본 연구는 각국 정부가 제도적 협력 동기를 쉽게 갖게 되는 유형의 위기인 식량위기 문제로 논점을 좁혀 접근하였다. 식량 위기는 대개 심각하고, 정부의 책임이며, 재발하는 특성을 지니고 있다. 따라서, 식량 위기는 종종 '5+1 조건 모델'을 충족한다. 본 연구는 이와 같이 APTERR의 제도화 과정을 '5+1 조건 모델' 사용하여 각국 정부로 하여금 식량위기에 대하여 제도화된 국제 협력에 이르게 되는 과정을 분석한다. 본 연구는 이와 같이 조건이 갖춰진 위기가 도래하면 제도화된 국

제협력이 발생됨을 확인하였으며, 이는 국제협력 연구에 기초자료를 제공하는 의의를 갖는다.

주제어: 국제협력, 델파이 연구, 식량위기, APTERR, 글로벌 위기

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