

A Study on Critical Points for Social Public Value Creation from Project and Program Management Viewpoint

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ABSTRACT

The social and public values, such as poverty alleviation and environmental conservation, are realized within and outside specific regions through the activities by various entities, such as private enterprises, governmental bodies and their affiliates, and non-governmental organizations. These values are created through the “collective impact” of several operations and projects. It is essential to interlink such activities by various entities and formulate a kind of “system” or “system of systems” with a hierarchy to create synergistic and sustainable value in society. It means that each element of the “system” would result from the operations and/or projects by private enterprises and governmental organizations and so on. Under the premise that the basic nature and principle of decision-making are different in private and public organizations, including the government, the contents of operations and projects that formulate a “system” should be well coordinated to get an impact that is positive, effective, and sustainable. However, when a government body intends to identify and solve social problems by creating value through the “collective impact,” it is not clear that what are the critical points of consideration to realize the value under such conditions. This study aims to identify these critical points by adapting the project and program management theory framework and comparative study of cases of the Official Development Assistance by Japan International Cooperation Agency in Socialist Republic of Vietnam. It becomes clear that among the elements such as situation of the target that values are created, technical and social aspect of the system, the last element especially the role and virtual authority of the government entity as program owner and manager is critical. And this study shows that this point can be strengthened to certain contents by careful preparation.

Keywords: Collective impact, system of systems, system, vicious and virtuous circle, Entity

1. INTRODUCTION

1.1. Objective of this Study

Previous research and an analysis of the case studies of official development assistance (ODA) have enabled the author to examine the program integration management framework for achieving sustainable public social value in partner countries through ODA. Here, “public social value” not only refers to the value created by specific individuals and companies, among others, but it also refers to the wider benefits emanating from a target area. These benefits include environmental conservation and health and poverty reduction and do not necessarily have commercial value.

This is based on the “Program and Project Management (P2M) Theory” [1] that emphasizes on sustaining and growing a “business” through a combination of operation and programs and projects, which can bring about change. Additionally, this study also proposes desirable management frameworks such as program integration management, profiling, strategy, architecture, platform, lifecycle, and value evaluation [2].

These examinations clarify that “public social value” is realized by the combination of activities that have the following structures:

- They are realized by “collective value,” which is the result of many projects and operations.
- These operation and projects are conducted by various stakeholder such as public, private sector and communities and so on. Among them, public sector (government entities) take a leading place.
- The projects and the operations form the “system” (the value realization and infrastructure systems) of the multilayered structure, and the synergy effect of those systems creates the “public social value.”

Additionally, it is important that these groups of “systems” do not become “stalemate” but have a virtuous circle and work in a sustainable manner. The authors also emphasized the need and role for ODA to input external resources, such as technology and funds, to the “critical path” of this system to realize the virtuous circle of the system. Putting things into perspective, ODA is an activity that aims to provide partial support to the realization of “public social value” created by a partner country, This implies that such “value creation structure” of public social value is not limited to any programs involving ODA, but it can also emanate from wider base of entities.

There is ambiguity on how to successfully realize the social public value with such a structure, that is, “how the system’s virtuous circle can be realized sustainably,” and clarity on this factor is critical, especially when profiling and architecting programs. The structure is consisted of individual activities with specific contents including new technologies and/or products introduction by various entities, and they formulate systems to create the social public value. When considering such value creation, it is necessary to design and develop, (1) contents of each activity including research and development (R&D), and (2) system structure.

In this study, we will not deal with the specific process or contents of R&D which is highly specific to each individual task and the method involved to perform the task. The necessity of R&D activities is not only limited to social public value, but also those by private enterprises. This area, R&D by enterprises is huge topic that many people have strong interest and there are so many researches related.

This study focuses on “social public program value,” that are realized through a common “system structure” in which all the elements of a programs and operations are interconnected with each other. From the viewpoint of management, I would like to clarify the important point (critical point) that can determine the efficacy of such a system.

1.2. Composition of this Study

In chapter 1, the objective and composition of this study are summarized.

In chapter 2, review of literature and previous studies are conducted on the subject.

In chapter 3, based on previous studies, a model on how a system or system group can realize public social value is presented, and factors of linkage failure of the system are

analyzed.

In Chapter 4, by adapting the concept “system-of-systems”, a model of the derived value realization and important points (critical Points) for sustainable value are developed and validated by another case.

In Chapter 5, we will summarize the conclusion of this research and discuss the topics for future research.

2. LITERATURE REVIEW AND PREVIOUS STUDY

“Public social value” is a broad concept, and there are enormous fields and prior research. Among them, I would like to review related prior research on the implementation of “programs” focused in this research and discuss the value realization through the management of such programs. First, we discuss the consideration of public social value in the Program and Project Management (P2M) theory, and subsequently present relevant theories for discussing ways of realizing value during the social innovation review. Furthermore, based on the importance of “the systems that realize value,” as presented in these studies, we review the general theory of “system of systems” concept to contribute to the discussion in the latter sections.

2.1. Program Management Theory (P2M Theory)

In relation to value creation of social public issues, various studies are conducted in the field of project and program management.

Regarding project and program management, the body of knowledge is developed by taking the opportunities of large-scale plants design and construction supervision. A representative example of these is the Project Management Body of Knowledge (PMBOK®) [3], which is used worldwide. In principle, PMBOK® has its scope up to the point of realizing the value designed as a project or program, but for the social public value, sustainable value realization after the implementation is important. As shown here, there are study areas that cannot be sufficiently covered by the PMBOK®.

In the P2M theory, the issue that can be addressed theoretically is analyzed using the “systems approach.” Additionally, the program and project management structure comprises management frameworks, and these frameworks are composed of management knowledge. These can be expressed by a figure called the “P2M tree” (see Fig. 1) [1].

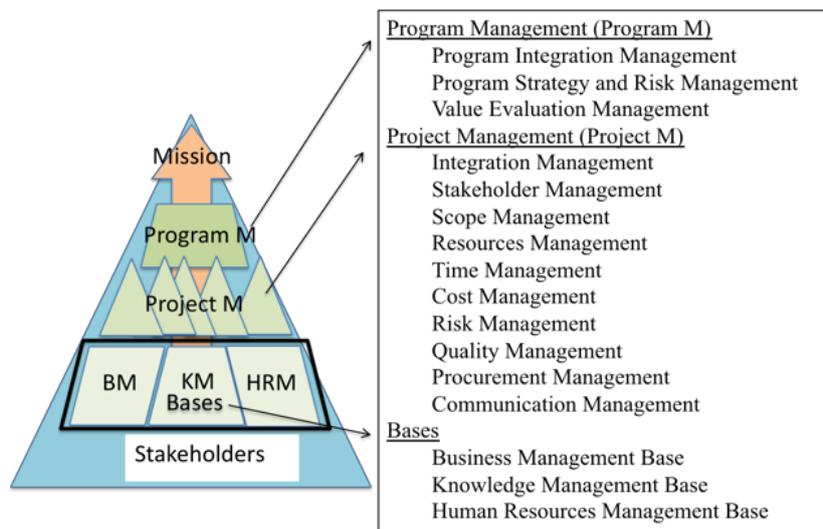


Fig. 1. Program and Project Management Structure of the P2M Theory [1]

In the P2M theory, the key concepts such as “project,” “program,” and “system” are defined below [1]. In principle, this study follows these definitions.

“Project”: A project comprises activities characterized by non-repetitive tasks and timelines for completion; this means that there is a mandated or agreed due date for completion.

“Program”: A program is a series of activities into which multiple component projects are systematically integrated to achieve superior objectives, such as the materialization of organizational strategies.

“System”: A system is something that systematically consists of several elements that performs certain functions as a whole.

On the other hand, the P2M theory, which is the program management theory originating in Japan, is a theory that focuses on value realization through the management of a “program” having “ambiguity,” “extensibility,” “complexity,” and “uncertainty.” It is a knowledge system, and its scope is suitable for realizing public social value because it includes value realization through the use and operation of developed products. The 3S model (scheme, system, service) forms the basic idea of P2M theory on value realization. This is a way of thinking that organizes the life cycle for value realization, realizes value by realizing the program as a “scheme model” for defining the project and as a “system model” for executing the project, and achieves the outcome of the project. It is the idea to divide into "Mode of service" mode. Nakamura et al. applied this to ODA, and organized the concept as shown in Table 1.

Table 1. The 3S-Model and its application to ODA [4] (Nakamura et al.)

Model	Description
Scheme Model	Create development policy and draw up the plan
System Model	Implement a concrete project to establish a total system under the developed plan
Service Model	Operate and maintain the total system for value realization

Furthermore, the author modeled the value realization process in the public social value that is contributed by the ODA, by using Nakamura’s consideration [5]. Basically, a project or program under consideration expands chronologically from the scheme model to system model to service model. Additionally, in public social programs, values are not created in society at the stage of the scheme and system models, but by implementing the system model. Figure 1 shows this in a basic diagram.

Adaptation of the P2M theory to the ODA program management framework and to other social public issues, such as environmental management and regional development in a region, in Japan are considered by various studies. (For example, see [6], [7], [8]) These results clarify the effectiveness of P2M theory for solving such issues. However, these studies focus on the individual management frameworks, such as platform management and profiling management. Additionally, the 3S model concept and the research questions discussed in this

study have not been examined in prior studies.

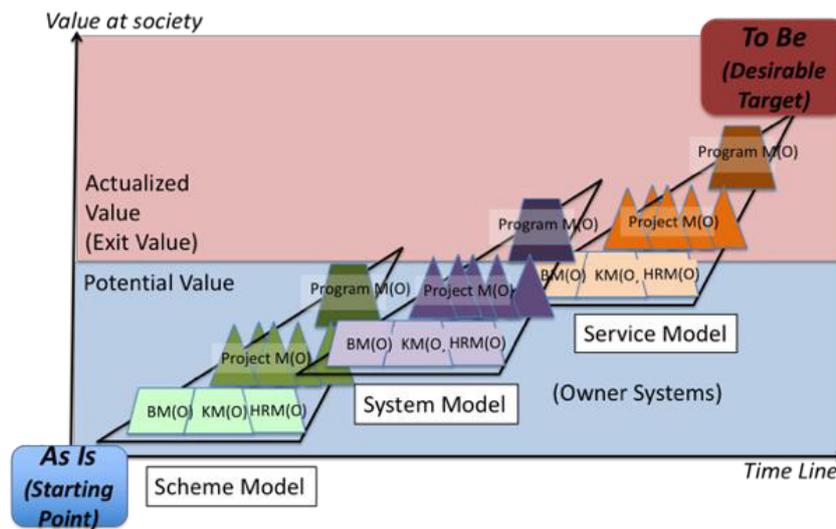


Fig. 2. 3S Model and Value Creation in Society [5]

2.2. Social Innovation

Concerning the value creation of social public issues, various studies are conducted in the field of “social innovation.” Although the approach is not similar to “program management,” this field also focuses on creating social public value in specific areas, communities, or technical subjects, that consist several stakeholders. Additionally, social innovation has evolved to focus on “systems” whose elements are interrelated with each other. The detailed ideas and concepts related to this study are as follows.

1) Collective Impact

John Kania and Mark Kramer [9] raised the concept of “collective impact” that explains the necessity of cross-sector coordination and accumulation of impacts developed by various individuals and/or organizations to achieve large-scale social changes, such as improvement of the U.S. public education system. Kania and Kramer classify the types of collaborations, such as (1) funder collaboratives, (2) public-private partnerships, (3) multi-stakeholder initiatives, (4) social sector networks and (5) collective impact initiatives. From this perspective, a lot of discussions are being raised (For example, see [10]). This concept gives us the insight about how the social public values are realized, and it can provide informative material for developing the program management framework.

2) System Leadership

In the area of “social innovation,” it is widely acknowledged that the concerned target of change and/or entities formulate a “system.” Peter Senge, Hal Hamilton, and John Kania [11] discussed the necessity of “system leadership” for facilitating complex social change, by quoting the accomplishment of late Mr. Nelson Mandela, previous President of South Africa. While the definitions of “system” remain ambiguous in the series of related discussions, all the definitions recognize that projects should involve various stakeholder activities and a “system leader” should have comprehensive points of view. This concept is considered a general concept, and hence it does not focus on a specific social program. Therefore, this concept does not directly answer the research question that is set in this study. However, this concept gives us the insight required to observe the target to realize value.

3) Plural Sector Approach

The necessity for collaboration among entities, such as the public sector, private sector, and non-governmental organizations, is the long-lasting issue facing the efficient and effective creation of social value. Henry Mintzberg [12] described the recent situation and necessity of such approach with the key words “Plural sector” to rebalance each role in society.

2.3. Previous Studies

By applying the aforementioned theories and study results, the authors conducted a series of studies on the program management framework of ODA and on ODA’s case studies (For example see [2], [5], [13]). Employing these studies, cases such as the rural agricultural development in the Lam Dong Province of the Socialist Republic of Vietnam, South Vietnam container port terminals development, waterworks development in Phnom Penh Capital of Cambodia, and other ODA projects conducted by the Japan International Cooperation Agency (JICA) are analyzed to clarify the problems and value creation structures. The summary of the results is as described below.

These results clarify the general system model for social public value creation. However, it is important to determine whether such a system model can work. Previous studies do not clarify the critical point that determines whether such a system can work.

1) Rural agricultural development in the Lam Dong Province of the Socialist Republic of Vietnam:

The Lam Dong Province, which is located in the central highland of Vietnam, has favorable climate and geographical conditions for commercial crop cultivation, such as vegetables, flowers, tea, and coffee beans. However, the values added to the agricultural products in the province do not match their high potential value. Under the framework of the “Japan – Vietnam Dialogue on Agriculture Cooperation” started in June 2014, the Lam Dong province was selected as the model province for food processing and product development. JICA was assigned to cooperate with the province for regional development through value addition to agricultural production. JICA and the Lam Dong Province Peoples’ Committee (LDPPC) conducted a study to analyze current problems and develop short- and middle-term future targets and projects proposals.

The study identified the problem of “veggie production,” and subsequently clarified that the problem emerged from various causes and it was composed of a multitiered structure. The base level consisted of common problems that were prevalent throughout the area, such as insufficient infrastructure development and limited land. The upper level consisted of specific problem domains concerning “veggie production,” such as finance, seedlings, market, technology, and human resources. Additionally, the specific problems under these five domains are not independent, and their relationship is not simply that of cause and effect but represents an interaction between diverse interrelated factors. This structure is shown in Fig 3 [5].

This problem structure, wherein the elements are at a stalemate owing to complicated factors, was insufficient for conducting project activities to tackle one specific element in this structure and thereby resolve the present problems. However, it was necessary to improve the

relationship among the elements, that is, the “systems.” To change the system, it is necessary to conduct various project activities in a coordinated manner; this is considered the “program approach.”

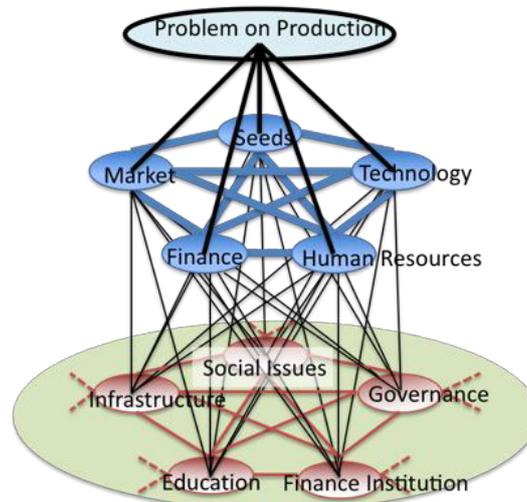


Fig. 3. Problem Structure Model of Veggie Production in the Lam Dong Province [5]

Another perspective is the value creation system. In the area of agriculture (veggie production), “production” activities alone do not create value. By focusing on the “technology” element mentioned in Fig. 3, the value creation system (food value chain) can be described as follows. The “value chain” concept was first developed by Michel E. Porter [14], and it is defined as the set of activities conducted by a firm operating in a specific industry to deliver valuable product or service to the market. This concept is further developed and adapted to agricultural activities, such as the “food value chain.” This chain is composed of a “system” that comprises various activities by an entity.

Production activities are performed using certain technologies; subsequently, it is followed by “processing,” “transportation” to the demand areas, “distribution,” “sales,” and “income (profit) generation.” Subsequently, activities concerning “marketing” and “planning and investment” are performed prior to the commencement of “production.” These elements are considered to formulate a “system” with a boundary and an external environment. This structure is described in Fig. 4.

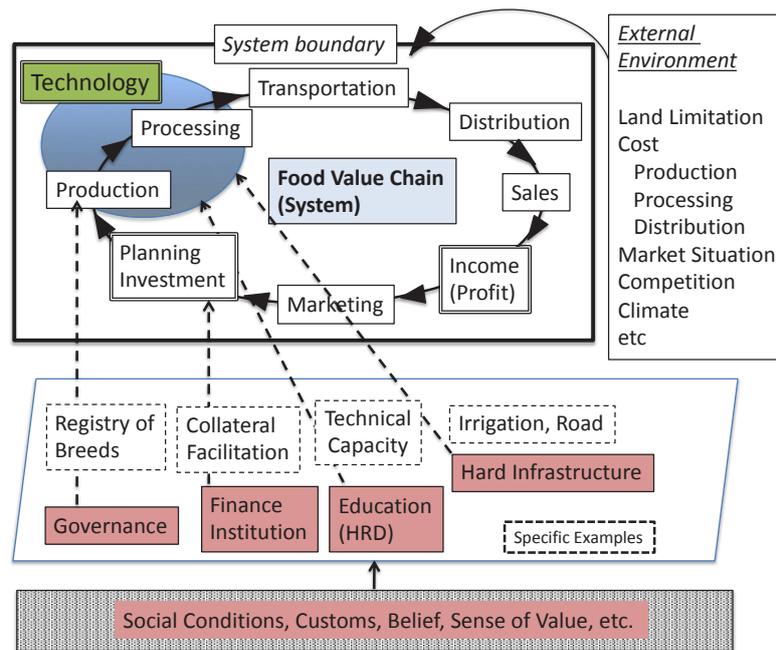


Fig. 4. Food Value Chain System Model of Veggie Production [2]

2) South Vietnam container port terminals development

South Vietnam, where Ho Chi Minh City (HCMC) is the center, faces several port related problems. In this area, the container port terminals are located in the riverside in HCMC that causes the following problems: (1) lack of deep-sea ports that can facilitate the operation of large freight vessels, (2) capacity limitation of existing ports, and (3) pollution and traffic congestion in HCMC caused by port operations. Since the 1990s, the Government of Vietnam (national government) developed plans to relocate the ports from HCMC to the Cai Mep–Thi Vai (CMTV) river in the Ba Ria–Vung Tau (BRVT) province, which is located 60 km southeast of HCMC. Additionally, the Prime Minister (PM) approved the detailed master plan for the southern port development and issued a decision in 2005 to the five ports in HCMC to move out of the city by 2010. JICA supported this plan by conducting a port development study in 2001–2002, providing an ODA loan of JPY 36.4 billion for the CMTV port complex and two supporting road development projects, and conducting a technical cooperation project for port operation capacity development.

These JICA-assisted projects were conducted successfully. However, the utilization ratio of container port terminals in CMTV was not very high [15]. This can be attributed to various factors. However, the three primary reasons for this issue are as follows [16]: (1) the ports in HCMC did not relocate as planned, (2) the supporting roads projects conducted by the Vietnamese entities were not developed as planned, and (3) the port terminals development in the CMTV area exceeded the actual demand.

This problematic situation can be described through Fig. 5, which focuses on the interrelationship of activities performed by various stakeholders within the framework of the “value creation system” and supporting system.

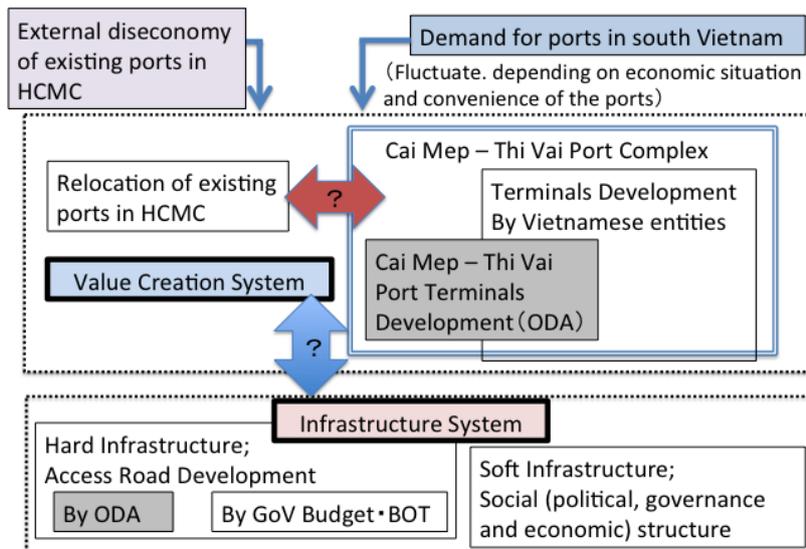


Fig. 5. Problem Structure of container ports in South Vietnam [13]

In this case, the dynamic behavior of stakeholders is the critical cause of the problem. The HCMC Peoples’ committee (HCMCPC), Ministry of Defense (MOD), and other stakeholders, including their affiliated state-owned enterprises (SOEs) and Joint Ventures (JVs), who may have faced the risk of losing their established interests in HCMC due to the port relocation, did not obey the PM’s decision. However, the BRVT PPC and the Ministry of Transport (MOT) set forward the decision. This situation can be described as Figure 6.

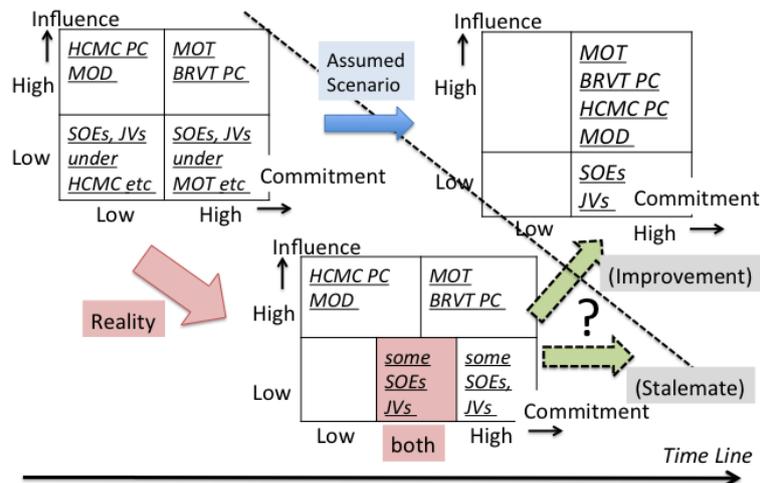


Fig. 6. Mapping dynamic stakeholders of container ports in South Vietnam [13]

3) Waterworks development

In many developing countries, the supply of stable and clean water is a critical issue, and JICA has conducted various projects to address this issue. A representative case is the waterworks development assistance provided in the Phnom Penh Capital of the kingdom of Cambodia, as part of JICA’s contributions to rebuild the Cambodia that was ravaged by civil war. From the perspectives of the “value creation system” and its sustainable operation, the activities of waterworks bureaus can be described as in Fig. 7.

The feature of this figure is that it shows related elements (activities) that formulate the layer systems. The water supply system layer is one of the layers comprising activities

ranging from water intake to distribution and service provision. The other layers in the water supply system are the virtuous or vicious circle system, fare receipts, and the external conditions influencing the system.

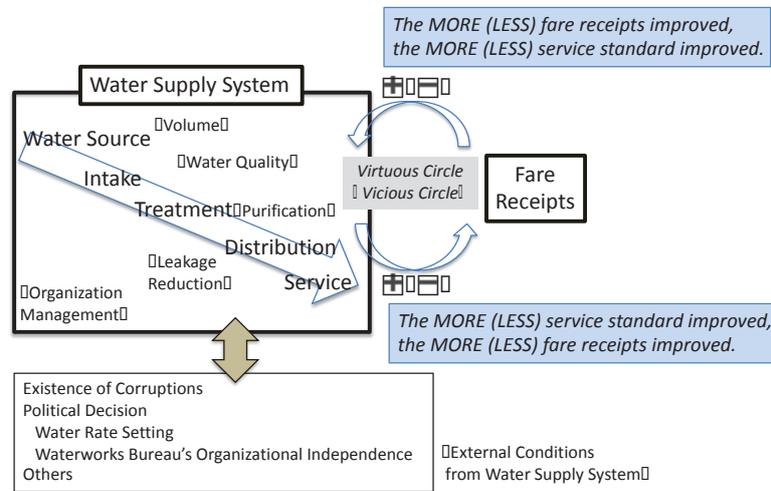


Fig. 7. Water Supply System(s) [2]

2.4. Program profiling and architecture

In section 2.1, the general framework of program management and the steps involved in value creation are summarized. Additionally, the description in section 2.2 reveals the need for conducting several projects involving various stakeholders for realizing public social value. Additionally, the case studies in section 2.3 clarify that public social values are realized through the combination of “value creation system” and “infrastructure system;” these systems are composed of several projects by various stakeholders. And as there are exiting operations by various stakeholders, the program or project(s) intended to realize public social value need to be profiled and designed under this condition.

By summarizing these results, the value realization model can be described as in Fig. 8. This understanding facilitated the formulation of the following question: what are the critical points that contribute toward the formulation of the necessary and workable projects that facilitate sustainable operation of social value creation “system”? In other words, what are the important points that allow such systems contribute toward the formation of a virtuous circle? This question has still not been answered.

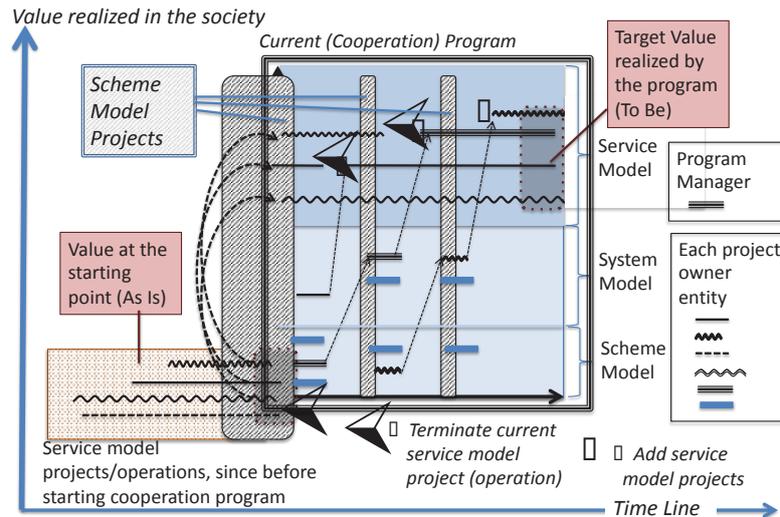


Fig. 8. Value realization model for addressing social issues [13]

3. ANALYSIS OF SOCIAL VALUE CREATION SYSTEMS

In this chapter, comparative case studies are conducted by adapting the framework summarized in chapter 2. Additionally, by including a perspective on the role of each stakeholder, three cases already studied in the previous chapter are further examined.

In chapter 2, three cases are analyzed, and each value creation structure composed of the systems are described. It can be argued that these three cases have both common and different system structures. In the previous chapter, the value creation structures are fitted to different scenarios in different manners to achieve the desired outcome. In this section, the common points are extracted by conducting a comparative case study.

3.1. Multilayered Systems to create value

As shown in Chapter 2, social value is realized by the accumulation of the results of many projects and operations. In section 2.2, it is called “collective impacts.” The cases in section 2.3 revealed the need for various activities, such as projects and operations, for realizing e value.

In the case of agriculture, the elements such as “production” and “processing” represent the accumulation of activities, and each of them can be called a project or an operation. The activities concerning these projects or operations are interlinked to formulate a “system.” Although the case on container port terminal operation represents a larger scale, the essence of the structure is the same as that of the agriculture case. The operation can be divided into various interlinked projects and/or operations and formulated as a “system.” This exemplified through the waterworks case. For example, the construction and operation of a water treatment plant is a big project, and this project is linked to another large-scale water distribution network project’s(s) operation(s).

Another feature of a layer is the existence of an “infrastructure system.” In each case, to allow effective working of direct value creation activities, certain infrastructures, such as laws and regulations (governance), organizational and human capacities (institutions, economic capacity, and human resources capacity), and supporting hard infrastructures, are necessary. For example, container port terminals cannot operate well without proper access to roads that provide connectivity to the terminals. Without proper regulations (for example, water quality standards and adequate fare settings), hardware (for example, pipes and plants), and technical level of the bureau and its staff, waterworks system cannot be operated.

The layer system is shown in Figure 9.

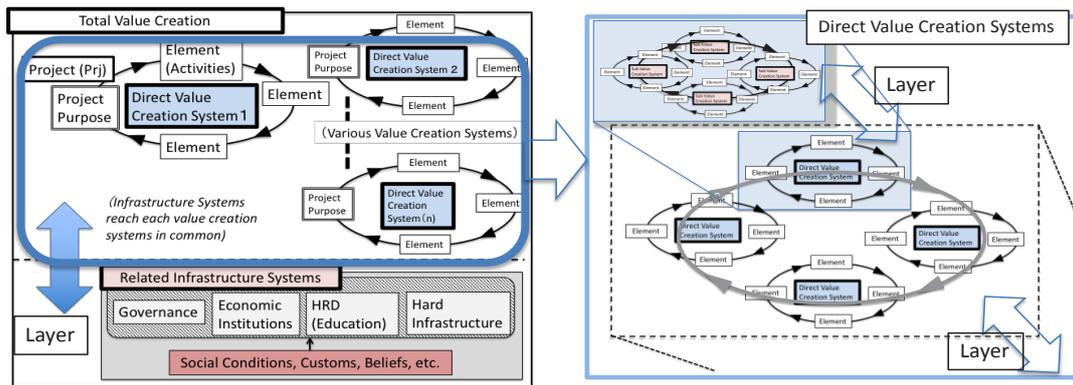


Fig. 9. Layered systems to realize social public values

3.2. External conditions and their contents

As mentioned in section 3.1., the total value creation structure can be divided into direct value creation system(s) which create value to the target and infrastructure system(s) that support direct value creation. The consideration of the interlinked activities as a “system” introduces a boundary that distinguishes the internal aspects of the system from the external aspects. From the viewpoint of the direct value creation system, the target for whom the value is created exists outside of the system; however, a mutual relationship can be seen between the external target and the system.

In the case of waterworks development in the Phnom Penh Capital, the target for created value is customers, who are the residents and workers of the city. These people will pay water fare to the waterworks bureau if they receive good services, and, the bureau can invest this income on hardware or software to improve its services.

Similar value creation is observed in the case of agriculture development. By selling agricultural products in the market, producers can get income from the consumers, and this income can be invested for the next cycle and for bringing about improvements. The creation of added value by the producers would satisfy both the consumers and producers and lead to the realization of a sustainable virtuous circle.

Value creation in the case of port development is also the same. The customers of the CMTV port terminal will pay fares if they consume the desired services at the terminal. However, in this case, excessive supply of cargo terminal service in the CMTV area and comparative disadvantages of terminals in HCMC led to a decline in demand for services in the CMTV ports.

This structure can be described through Fig. 10.

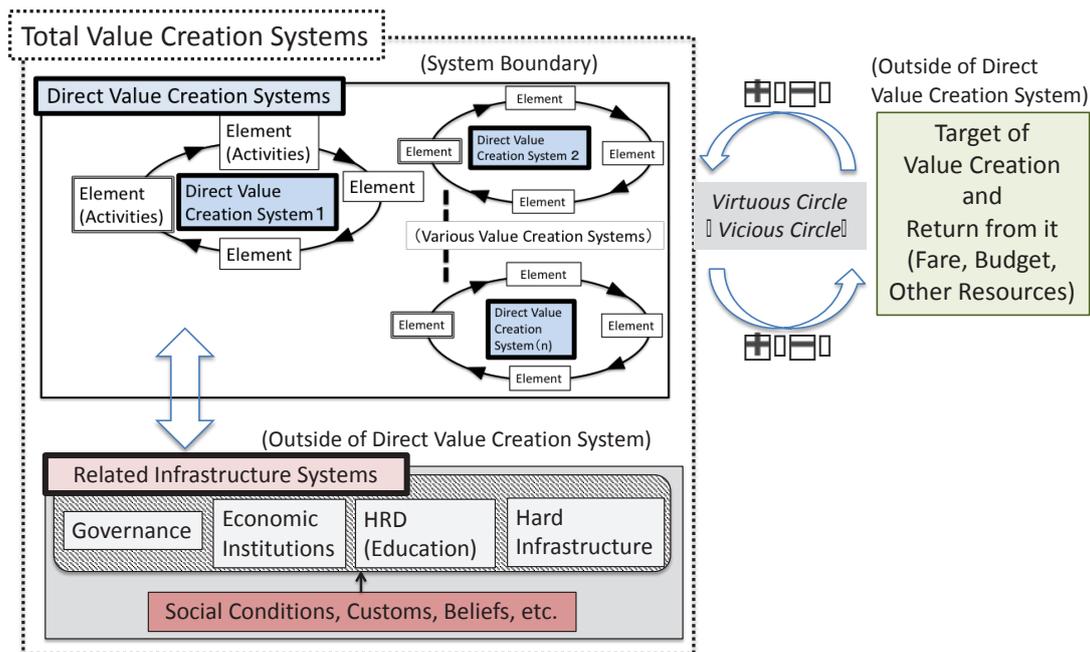


Fig. 10. Virtuous (Vicious) circle between value creation system(s) and its target

3.3. Factors responsible for linkage failure in the system

When focusing on the direct value creation system(s), the conditions that determine whether the system works are classified. The value creation system is designed in a manner that it contributes toward value creation. It implies that if all the activities that are conducted, that is, the elements of the system, are designed and linked to their successive activities continuously, then the system will create value. In other words, if the elements (activities) are not linked effectively, then the system would fail to work and create value.

There are situations or reasons that do not allow the elements (activities) to connect effectively. The first situation or reason is that one element (activities) CANNOT be linked with the next element, and the second reason is that one element (activities) DOES NOT get linked with the next element. The latter reason can be described as WILL NOT reach.

In the first situation, the entity that conducts the activities has the willingness to link one element with the next element, but cannot link because of the lack of resources, such as monetary resources—budgets or desired profits—and technical resources—human resources and requisite hardware. In this case, if there is a failure in establishing this linkage, then the total system would fail to formulate virtuous circle and get trapped in a stalemate (deadlock) situation.

In this case, the critical point is whether the entity, which does not have enough resources, can exceed the “threshold” of making the virtuous cycle work. It is believed that one element is not always the critical point as the elements of the systems are interlinked. In this context, the failure to establish a virtuous circle can be attributed to the influence of each element has over the other. From this viewpoint, the critical question is how to provide the necessary “resources” to the entity that perform the activities?

The situation wherein necessary resources cannot be secured can be as attributed to the low capacity of the entity to conduct the activity to secure the resource; this is because the amount and contents of resources are important elements that represent the “capacity” of a person or an organization. The capacity factor is very common, and the role of ODA is to contribute toward developing such a capacity. The items that must be strengthened are

technical, financial, and institutional capacity, including human resources development. Even though the entities’ technical or institutional capacity are sufficient, they cannot act without proper income or budget. Additionally, if the situation is not as per the design due to some reason, the entity that conducts the activity cannot receive enough resources (such as income from the sales). This would keep the system from working effectively.

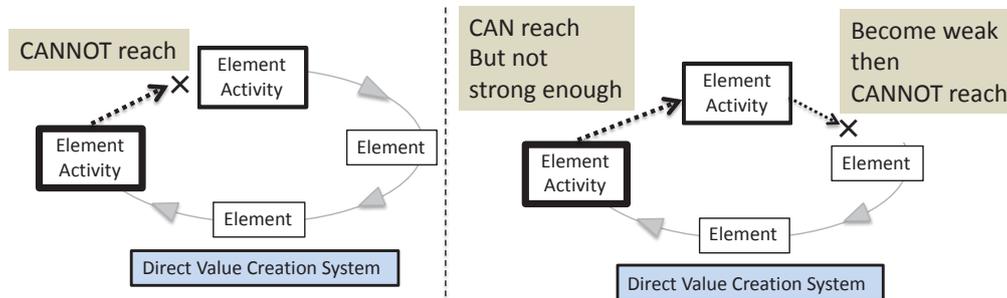


Fig. 11. Failure to establish virtuous circle of system by failing to link (1)

Another type of situation was observed in the case of South Vietnam container terminal development. As shown in Fig. 6., some of the important stakeholders did not follow the design of the systems that was set by the decision of the PM, and refused to move to the CMTV port from HCMC. Therefore, the total system did not work well, as described in section 3.1. This case shows the necessity of focusing on the roles, capacities, and decisions of each stakeholder who formulate the value creation system.

From this viewpoint, the issue of the “entities’ willingness,” how the entity who are part of the system make decision or how to let them follow the total design, is the critical point.

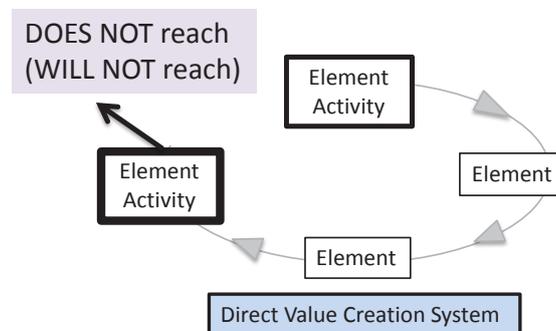


Fig. 12. Failure to establish virtuous circle of system by failing to link (2)

3.4. Primary factors responsible for linkage failure in the system

This section discusses why such direct situations occur? The answer can be divided into two domains. One is the technical or technological aspect, and the other is the social aspect. It is inevitable to care for the social context of the related area when attempting to create value in the society; this is depicted as “social conditions, customs, and beliefs” in the “infrastructure” part of the Fig. 10.

(1) Failure of system design from a technical perspective

One of the apparent reasons for failure is the lack of appropriate contents that formulate the system. If the contents of the activity are not satisfactory, then the system will fail to work. For example, when new technology is introduced for agricultural production or

processing and if it does not work as expected, then the element will not produce the expected output with the designed input. This will not allow the element to establish a link with the next element. In many cases, this is the main point of consideration, and many stakeholders try their best to develop or introduce new technologies or products. The problem of short supply of necessary resources can also contribute to the failure. This is because if the element of the system that gets income from outside the system does not work as expected, then there would be a lack of availability of planned resources in terms of income, and this would lead to a shortage.

Although the importance of this point is recognized, as mentioned in section 1.1, this does not fall under the direct purview of this study, and hence is not discussed further.

(2) Failure of system design from a social perspective

Despite designing the system properly from a technical aspect and hence expecting it to work as per the design, there have been cases wherein specific elements do not work as designed. This issue was observed in the case of South Vietnam ports development, mentioned in section 2.3 (2). In this case, it is important to question “for whom” is the system designed? As observed in the case, the new port operation system design in South Vietnam was good for the region as a whole, but it may not have been good for specific entities (such as HCMCPC and MOD) who already have privilege in existing ports in HCMC. It was apparent that these entities sought their own interests, and their behavior obstructed the development of the new port system. This is the miscalculation of designing the system from a social aspect.

In the port development case, “the PM’s decision” was formally issued under the initiative by the Ministry of Transport and under the name of the Vice Prime Minister (VPM). There were follow-ups after the decision was passed. However, HCMCPC and MOD did not follow them. The reason lies in the social context of the country. In Vietnam, owing to numerous “PM Decisions,” it becomes difficult for the PM to keep a track of all such decisions. Therefore, the follow-up activities are done by VPM or the Ministry in charge. In this case, the MOT was responsible for the follow-ups. However, in Vietnam’s political organizational structure, the secretary of HCMC Communist Party and the Minister of Defense are much powerful than the VPM and Minister of Transport (See Figure 13 [15], and 16].)

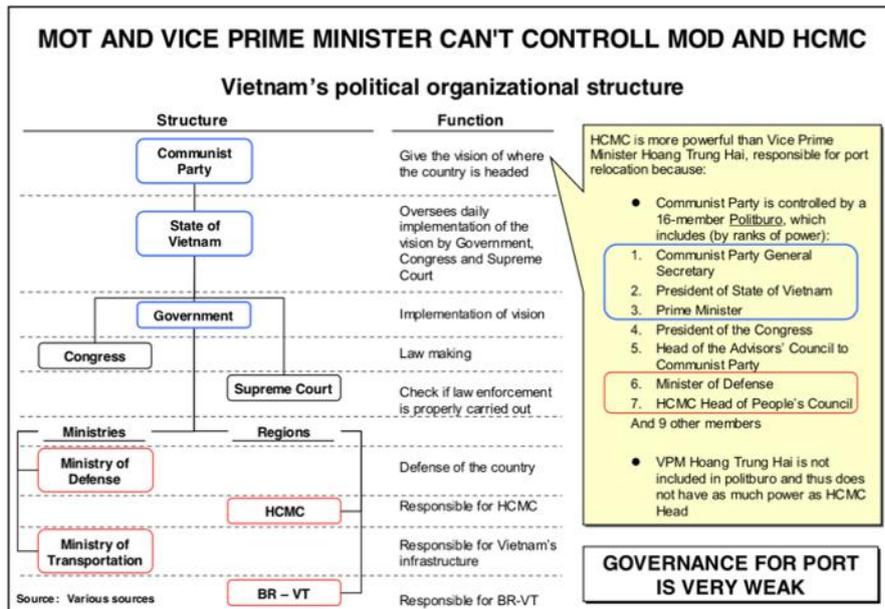


Fig. 13. Vietnam's political organizational structure [15]

Therefore, these entities did not follow such instructions. This is a typical case that reveals the need for considering and if possible refining social conditions or beliefs.

These two aforementioned perspectives are interlinked, and situation changes dynamically by the behavior of entities concerned and the external environment; the case shown in Fig. 6 serves as the typical example. As shown here, the complexity faced by the social value creation system is dynamic in nature; it comprises elements such as technical aspects; social aspects, including the behavior and decision making of stakeholders; and external environment.

4. MANAGING SOCIAL VALUE CREATION

4.1. System component of social value

The consideration in Chapter 3 clarifies that social value creation can be realized through the accumulation of outputs by various layered systems. The structure is shown in Fig. 14. Additionally, the most important point is whether the value creation systems (direct value creation), with the support from infrastructure systems, will work as expected.

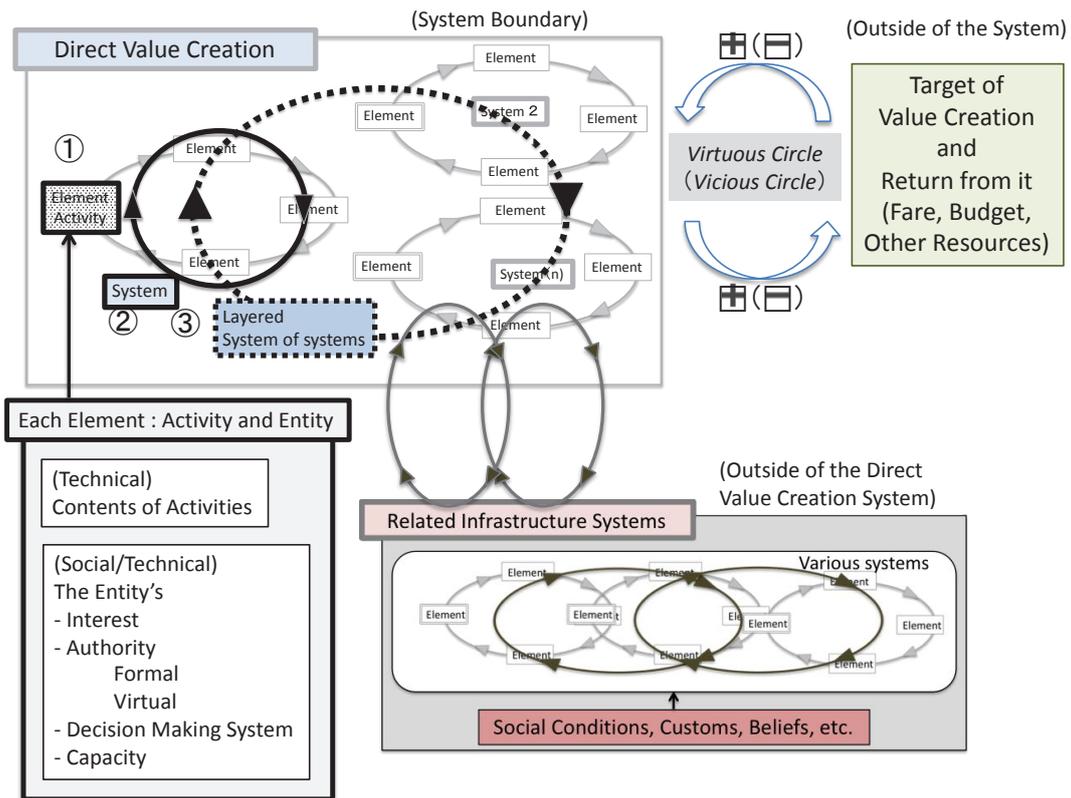


Fig. 14. Component of systems for social public value

The “Direct Value Creation” part comprises layers of systems; it is depicted in Fig. 14 as a model that has levels ranging from level ① to ③. In order to ensure that these systems can work as expected, it is necessary to provide requisite resources such as fares, sales, or budget as the return of value created by the society, which is outside of the system. At the same time, each system element, which comprises the activity of each entity, should work as designed to create value. These two factors share a mutual relationship. If the system(s) is designed adequately, if each element works as planned, then values created by each entity can receive returns and continue working (virtuous circle). However, if the elements do not work as planned, then the values will not be realized and the elements would fail to receive a return and would fail to work effectively (vicious circle).

As shown in Figure 14., value creation system and their target are interrelated. And situations of the target such as its needs, demand, capacity and so on are also under dynamic change. If the situations change drastically, value creation systems designed for earlier target situation may not work well.

4.2. Analysis of social public value creation with the Concept “System-of-Systems”

In section 2.1, a system is a systematic composition of several elements that performs certain functions collectively, this is considered the state of things. The Fig. 14 presents the static cross-section of the dynamic social public state of things; it comprises a lot of systems by various entities in the layered structure. This figure presents a detailed breakdown of the “value at the starting point” of Fig. 8, which contains both operations and projects.

Such numerous systems can be classified by introducing the idea of “system-of-systems.” Mailer [17] defined “system-of-systems” as “an assemblage of components which individually may be regarded as systems, and which possesses two additional properties such as ‘operational independence of the components’ and ‘managerial independence of the

components’.” Miler established a clear distinction between the “system-of-systems” and “system and subsystems” by adding the explanation that “a system composed of complex subsystems that do not have both operational and managerial independence is not a ‘system-of-systems,’ ‘no matter the complexity of the subsystems’.” Mailer added three characteristics such as “geographical distribution,” “evolutionary development process,” and “emergent behavior.”

The US Department of Defense [18] classified the system-of-systems into four types as shown in Table 1.

Table 2. Four types of system of systems [18]

Types	Definition
Directed	Directed SoS(System of Systems) are those in which the SoS is <u>engineered and managed to fulfill specific purposes. It is centrally managed during long-term operations to continue to fulfill those specific purposes</u> as well as any new ones that the system owners might wish to address. The component systems maintain an ability to operate independently, but <u>their normal operational mode is subordinated to the centrally managed purpose.</u>
Acknowledged	Acknowledged SoS have <u>recognized objectives, a designated manager, and resources for the SoS</u> ; however, the constituent systems retain their independent ownership, objectives, funding, development, and sustainment approaches. Changes in the systems are based on cooperative agreements between the SoS and the system.
Collaborative	In collaborative SoS, the component systems interact more or less voluntarily to fulfill the <u>agreed-upon central purposes.</u>
Virtual	Virtual SoS lacks a central management authority and a centrally agreed-upon purpose for the system of systems. Large-scale behavior emerges—and may be desirable—but this type of SoS relies upon relatively invisible, self-organizing mechanisms to maintain it.

Notes. Underlines are added by author

It is considered generally that the “systems” described in Fig. 14 should have “operational independence” and “managerial independence” as they are operated by various stakeholders. Therefore, the components of system meant for creating social value should considered “system-of-systems.”

The important point of the idea of “system-of-systems” is that it implies not only the classification of the relationship among systems but also the management perspective on the concept of “system” in order to achieve specific purposes by emphasizing the role of “system owner.”

4.3. Critical points for managing program to add value to the social public “System-of-systems”

Concerning the social value, it is generally understood that the targets formulate the “system-of-systems” with various stakeholders or entities. For this target, the projects and/or programs are conducted. It means that new systems are created by adding resources and/or existing systems are revised or deleted to create additional values. Additionally, the new programs, among others, should be designed (profiled and architected) in a technically and

socially sound manner. Theoretically and ideally, when all the elements, except the “target of value creation” (outside of direct value creation systems), are regarded as one program, it implies that the program related activities are under the control of a “Program Owner” or “Program Manager.” Under such ideal conditions, the appropriateness of the technical design of the program would only matter. However, in reality, there are many stakeholders (entities) who act for their own system; in such a case, it becomes difficult for a single entity, like “Program Manager,” to manage all the systems. The target of social value creation, which is the real society, consists of numerous systems factors and systems. Hence, the idea managing all the related factors appears unrealistic in this case.

The important points are how far and how effectively the intended program(s) or project(s) can affect the current status quo comprising numerous stakeholders, and whether they can contribute toward the creation of target value. What is important here is to enable the target “system-of-systems” to be ideally of the “directed,” “acknowledged,” or at least the “collaborative” type.

As referred in section 4.1, concerning the situation of target, dynamic change may occur not only by external conditions but also by the effect of the program. The value creation system (system-pf-systems) and the target are interrelated and formulate virtuous (or vicious) circle. Thus, when designing the social public value creation, it is understood that the situation of the target of program is moving part.

From technical aspect, there are many factors concerning the design of the program(s). The factors include the contents and quantity of resources inputted. For example, if the R&D efforts were succeeded and new technology introduced through the program is attractive enough, then program may work and change current problematic situation, then contribute toward the creation of the virtuous circle. If the amount of resources inputted, such as financial resources, is well balanced to change current situation, then the program may work and create the target value. If the related stakeholders intend to reap benefits out of these elements, then they must enable the targeted systems to work naturally, similar to market mechanism. And whether contents and quantity of resources inputted can be successfully or not is also moving part of the program.

From social aspect, concerning the social public value creation system (system-of-systems), conflicts of interest would occur in many cases by the nature that there are so many stakeholders. This is the third moving part when designing and implementing the program.

It is almost impossible to satisfy all the stakeholders’ interests in one time. In such cases, administrative or political decision-making would be necessary, and it would be critical to determine whether such decisions can be realized. The rationality of the decision is essential, similar to above mentioned technical reason, but this is not enough. This is because it is not rational for the entities who suffer losses at least in the short-term. Therefore, it is necessary for the program owner to have both institutional and virtual authorities make other important stakeholders follow the decision. In other words, the determination of whether the program owner can exercise enough influence over other stakeholders is critical for successful social value creation. From this perspective, three cases that are introduced and examined in this study are analyzed, as shown in Table 2. Especially in developing countries, administrative functions are divided vertically seriously in general, then making it difficult for all the important stakeholders to follow the program owner. Care should be taken while inputting resources for such targets.

Table 3. Comparison of three cases about authority of the program owner

Program	Program Owner (PO)	Important Stakeholders (SHs), Actors	Influence of PO over important SHs	Types of SoS
Phnom Penh City Waterworks Development	Director General of PPWSA	Departments under PPWSA and their staff	☉ The SHs are directly under the supervision of the PO	Directed
Lam Dong (LD) Province Agricultural Development	Secretary of LD Province Communist Party (CP)	Departments under LD PPC, under instruction of the CP. Groups under LD CP and private enterprises	○ Key SHs are directly under the supervision of PO, and others are under the influence of PO	Acknowledged
South Vietnam Container Port Development	Minister of Transport	BRVT PPC HCMC PPC MOD	× Formally PO can influence SHs. But, in reality, PO cannot exercise influence.	(Virtual)

As summarized here, there are mainly three moving parts when designing and implementing social public value creation program, such as target situation, technical contents of the program and social aspect of program. And these three elements are interrelated.

From the point of view of designing the program and its management, such as profiling, strategy, architecting, platform management and so on, for the program owner or manager, target situation and technical contents are out of control in the sense. The target situation is partly or mostly affected by external conditions and environment that cannot be controlled by the program owner. To control target situation has limitation and whether R&D activities or can be successful or adequacy of introduced technology cannot be secured fully and certain risks remain. Whether R&D is successful or not cannot be guaranteed by their nature.

Compared with these two elements, relatively social aspects element can be highly probable by the selection of target and, careful preparation and operations. Through such preparation, to establish role and authority of “Program owner and manager” virtually is very effective and important. This structure is described as Figure 15.

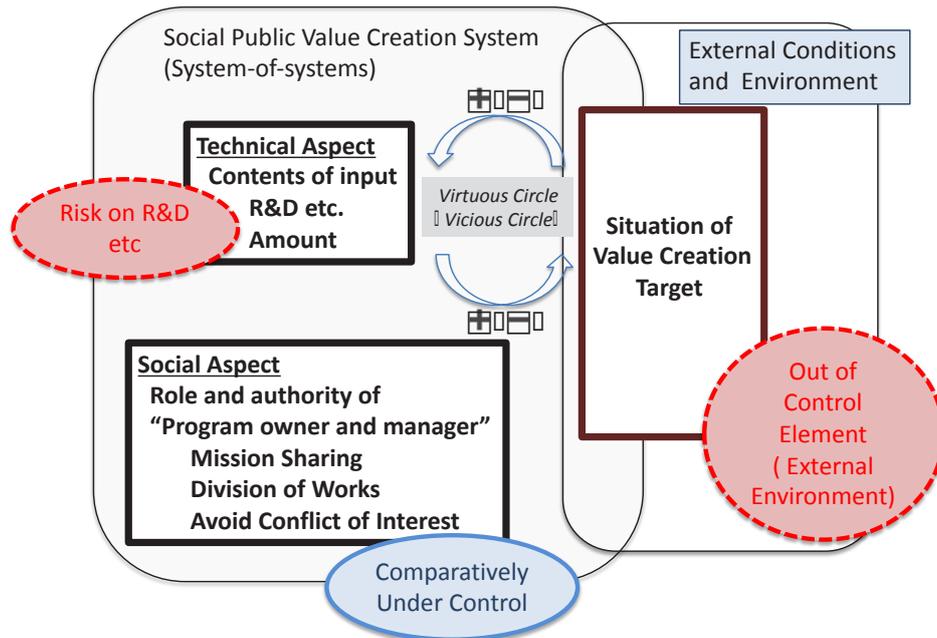


Fig. 15. Composition of social public value creation and their uncertainty

In social public value creation, to try to hedge the risks derived “uncertainty” of each element is an avoidable and critical. The effort directly links to degree of success of the intention. Therefore, it is considered that to try to fix the social aspect, especially the role and virtual authority of program owner, as much as possible is quite critical for successful sustainable social public value creation. It should be pointed out that if it is difficult to secure the role and authority, to abandon the establishment of new program needs to be considered.

4.4. Validation analysis through inter-provincial coordination mechanism in water quality management in Vietnam

In this section, validation is conducted by taking the case of inter-provincial coordination mechanism in water quality management in Vietnam.

(1) Outline of the case

In Vietnam, there are some rivers which run across provincial borders and the water related issues such as environmental management (water quality), water utilization (quantity) and flood control, often register conflicts between upper and lower basins. To improve water related situation of such river, many related projects to secure water quality at the basin are necessary and well-managed efficiently implementation of these projects is imperative. For the contribution, JICA has started a technical cooperation project in Vietnam in 2015. For JICA this is a technical cooperation project, however, related projects by Vietnamese side need to be conducted. These projects need to be well coordinated as a program under the program owner and manager.

(2) Mission profiling with concentration to priority area

In Vietnam, different ministries are in charge of water related issue. The law of water resource management which was issued in 2012, and according to the law, water environmental management issues are taken care by Ministry of Natural Resources and Environment (MONRE), water utilization issues are taken care by Ministry of Agriculture and Rural Development (MARD) and Ministry of Trade and Industry (MOIT), and flood

control is taken care by MARD, MOIT and MONRE.

The integrated management of all water related issues are ideal, however in Vietnam, it was foreseen that the coordination among three Ministries was quite difficult. Therefore, as the first step, Vietnamese side and JICA agreed to focus on water quality issues as first step, then main counterpart was fixed as MONRE. This decision was done mainly by social condition.

The project consists of two parts. The technical part aims for establishing water quality monitoring and information sharing mechanisms by introducing Japanese know-hows and technologies. And social and administrative part aims to set up a feasible formal coordination mechanism among stakeholders.

(3) Relationship among provinces, MONRE and JICA

The water quality issue in each river basins cannot be solved by MONRE. The close collaboration between MONRE and provinces and among provinces are needed. In the scope of JICA contribution, one of the model rivers are Dong Nai river which runs several provinces of south Vietnam, including HCMC. As the entity which conducts specific projects are mostly provinces not MONRE, proper understanding and cooperation from provinces are absolutely imperative.

At preparation stage, when the program was under designing, MONRE and JICA visited all the provinces and saw the top leaders of the provinces to ask for their cooperation including securing the current budget after JICA contributions terminated. As such provinces themselves found it necessary to tackle with this issue, and thanks to careful explanation and persuasion in advance, this program could get good understandings by the provinces. With this process, it is considered that MONRE could acquire certain role and virtual authority as the program owner and manager.

(4) Current progress of JICA contribution and validation of chapter 4 contents

Current progress of JICA contribution project is as expected and concrete positive results are realized. In the Dong Nai river basin, formal coordination mechanism among eight provinces and one city (HCMC) was approved [19], and this is commendable results. And MONRE still keeps the authority and role of the program owner and manager.

As described, although this project contains a lot of difficult points, the progress is quite well. It is partly thanks to the efforts of experts who are in charge of technical part of this project which introduce new technology to Vietnam. And in addition to that, social coordination efforts started from the mission profiling stage and continuing mutual communication and collaborations enable the success.

By this case study, the contents stated from section 4.1 to 4.3 is validated.

5. CONCLUSION AND FUTURE TOPICS

This study focuses on attempts to create social public value which is realized by the combination of activities with the features such as (1) realized by collective value of many projects and operations, (2) existence of various stakeholders and lead by government entities, and (3) the projects and operations form layered systems.

But there are unclear points on how the system's virtuous circle can be realized sustainably, especially when profiling and architecting programs which are consisted of a number of projects. Among the elements related to this question, this study does not deal with the specific process or contents of R&D and focuses on common "system structure" to realize

“social public program value.” And from the viewpoint of management, the important point (critical point) that can determine the efficacy of such a system is studied.

At first, review of literature and related previous studies, especially using P2M theory and its frameworks such as “3S-model” including three case studies are conducted then, general social public value creation structure was summarized.

Based on the results, further precise examination of the three cases are conducted and detailed model of multilayered Systems to create value including the relationship between value creation systems and their target, failure patterns of establishing virtuous circle. By these results, value creation target as external conditions for value creation systems, technical aspect and social aspect of the value creation systems are highlighted.

In chapter 4, the system structure of the target of social public value creation is further studied with the concept “system-of-systems.” By introducing this concept, classification of “system-of-systems” such as “Directed”, “Acknowledged”, “Collaborative” and “Virtual” is introduced and the difference among these types are found in management elements. As the critical points to determine the efficacy of such a system, “situation of value creation target”, “technical aspect of the program” and “social aspect of the program” are introduced. Although it is difficult to control the former two elements by their nature, “social aspect of the program” in particular the role and authority of program owner can be properly designed and prepared. Therefore, the most critical point to determine the efficacy of such program is in the social aspect, especially the role and authority of the government entity as program owner and manager. This result is validated by a case other than the three cases studied previously.

This topic has many areas to be considered. In this study, mainly the role and behavior of governmental entities are studied, however those by private sector are not studied. It is considered that private sector plays significant role to realize social public value. It is obvious when examining the agriculture development case. The private enterprises formulate “value chain” as Porter mentioned and a lot of discussion including “business eco-systems” exist.

The relationship among government sector, private sector and communities or non-government sector when creating social public value and its management framework need further clarification and development. These are the future topics to be tackled.

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