

Community Dock: A New Policy Approach for Altering Institutions

Takayoshi KUSAGO¹, Makoto NISHIBE² (Two first authors with equal contribution)

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1. Introduction

Some social scientists have suggested that local residents in a community should become voluntary and active principals in the governance of their own community. In addition, they have recognized the necessity to transform the conventional view in which local governments are mainly responsible for local governance in communities into a ‘new public’ view in which inhabitants, corporations, nonprofit organizations and governments mutually collaborate to create local communities. Consequently, a number of local governments have tried to realize ‘community participation’ in town planning under comprehensive regional development. Some local governments are also trying to reflect the voices of local residents more in policy design and implementation of policy agendas such as vitalization of the local economy as well as in the improvement of educational, medical and welfare services.

The momentum of regional development by local residents as principals has thus been increasing; however, the momentum is still slow in that governments often draw up a general framework of regional development and town planning, which only partially reflects the voice of inhabitants. Therefore, local residents cannot yet easily promote town development. Even though local resident volunteers intend to introduce community currencies into their local communities, it is also vital that local residents willingly and positively participate in the administration and activities involved in community currencies.

In light of this situation, this article proposes a ‘community dock’ as a completely new policy-making instrument that local communities as principals can use to support autonomous and endogenous community development effectively. Here a community is

¹ Faculty of Sociology, Kansai University

² Graduate School of Economics and Business Administration, Hokkaido University

thought of as an association of not only local residents, but also as various kinds of non-profit organizations, businesses and local governments.

First, let us explain the origin of the words, ‘community dock’ (Nishibe 2006; Nishibe, Kusago 2010). We created the original term to be analogous to ‘human dock’, which is a translation from a Japanese term ‘Ningen Dokku’ meaning a periodic, normally annual, complete medical checkup for early diagnosis and self-awareness of lifestyle problems, because lifestyle-related diseases are widely observed in modern societies (Medical Excellence Japan 2011).

‘Community dock’ embodies a strategic and comprehensive method used by research groups when they conduct periodic surveys on the socioeconomic situations of a community and present these results to the community so that the community can promote their own worth and improvement in battling problems. Community dock is, on one hand, a method for a community to become a principal party in the integration and improvement of its own self-estimation and problems, and, on the other hand, a tool to assist in the formation of synthetic and voluntary community development.

Community dock was devised and proposed within a framework of evolutionist institutional design based on the concepts and ideas of evolutionary economics. Evolutionist institutional design provides a new socio-economic policy theory that will successfully guide a socio-economy to evolve in a more desirable direction intentionally by altering ‘outer institutions’ (monetary, educational, medical and welfare institutions etc., formed according to laws and regulations) as well as ‘inner institutions’ (social value, norm and motives widely shared by such community members as local residents, corporations, organizations and governments). Community dock is a practical policy instrument that enhances the effectiveness and validity of a given set of outer institutions by spontaneous change of inner institutions through self-evaluation and self-correction by community members. In this paper, ‘community dock’ will be discussed as a specific evaluation method with different characteristics gleaned from pre-existing policy methods (Nishibe, Kusago, 2010; Nishibe, Kusago, Hashimoto, and Kichiji, 2010). In this paper, we will discuss the concepts, needs, features, and implications of community dock and its methodology.

2. ‘Community Dock’: A Practical Method for Spontaneous Institution Altering Policy-making

‘Community dock’ adopts a completely new idea and method, so it is natural to ask such questions as how it has been conceptualized, what it aims to do, and who implements it and how. Here we will explain community dock by answering those questions.

2-1 What is Human Dock?

As explained above, we came up with the term and concept of ‘community dock’ based on our common experiences and knowledge of Japanese ‘human dock’ as annual medical checkups. Then, we need to firstly explain what is human dock.

In human dock, doctors make the best use of modern high-tech equipment and collect objective data regarding the condition of the body of examinees, and then analyze the data and judge the present health condition of the examinees. Doctors usually tell examinees the test results in an interview, and advise them how to maintain and improve their physical conditions in the future. Doctors often also provide motivation for the examinees to carry on with health management by themselves. For example, when doctors find the signs of metabolic syndrome such as hyperlipidemia and hyperglycemia from the test results, they urge their examinees to lose weight, eat properly, and exercise. The examinees are also sometimes sent to a nutritionist and a re-examination by the doctor is recommended after a certain period of time. If the doctor discovers serious trouble or illness from the test results, then they give the examinees prescriptions for medical or surgical treatments.

2-2 Human Dock and Community Dock: The Similarity between Them

There are two aspects to human dock. One aspect is that doctors provide a diagnostic method for early detection of serious illnesses such as certain cancers and heart disease that don’t necessarily show symptoms, and then they suggest various medical treatments. The second aspect of human dock is that examinees regularly check their own health and have a chance to change their unhealthful habits through a better lifestyle. When both aspects are combined, human dock is a complete medical checkup where doctors as medical experts give advice and medical care, if necessary, to examinees according to the test results based on the scientific analysis of objective data, while examinees refer to such data, coordinate their own physical conditions and

self-manage their own health.

There are two aspects that correspond to the idea of community dock as well. In one aspect, community dock is a systematic research method and a comprehensive approach for policy recommendations and evaluation in order to analyze the economic and social state of communities and report the results back to them as well as proposing new measures on the basis of such a report, where adopted policies are evaluated and modified. In the other aspect, community dock is also a practical technique for communities as principals to create spontaneous and endogenous town development. The principal parties in a community include local corporations, organizations and governments as well as local residents. Such parties become aware of a problem from the point of view of their own interests as well as from knowledge of the current state of the local socio-economy. Furthermore, if the principle parties in a community can form a collaboration team with external researchers and exchange their opinions on the future of the community, and share the problems in learning and consultation opportunities in seminars and workshops, it will be possible to encourage each party to self-correct their commitments and value consciousness to the entire community, forming a mutual trust and cooperative relationship, and, as a result, solve the problems of the community.

Accordingly, community dock can be seen as a policy instrument that incorporates within it both self-evaluation of the community as an object and self-alternation by the community as a subject. We should especially put emphasis on this two-sided character of community dock. It enables such principals of community as local residents, businesses, non-profit organizations and government to share in a vision of the desired future of the community, and to practically perform the design and evaluation of policies necessary to achieve such community.

In human dock, both doctors and examinees confirm problems in conversations based on diagnosis results, make a remedy plan and practice it. In community dock, collaboration teams consisting of researchers with expertise and the principals of the community are supposed to be formed in order to analyze, evaluate and diagnose the present conditions of the community, and share all the results. Consequently, they can recognize the gap between the present states and the future goals they aim at, confirm accomplishments and problems of the introduced remedy, and revise it to a better way, if necessary. Community dock is a technique for such external researchers to collaborate with, and support, the community, and it is a kind of the process evaluation technique of

the policy. In this respect, it is greatly different from the conventional evaluation technique that is solely for measuring costs and benefits of policy consequence from an external viewpoint (Fetterman 2001).

Here, let's explain in more detail why community dock is the process evaluation technique of the policy. The diagnosis report of human dock forms not only a motive to continue objective measurement and recording of data on body weight, percent of body fat, and blood pressure, but is also a motive for examinees to review their whole lifestyle including exercise, meals, luxury goods and sleep. In short, human dock might possibly bring about an alternation of lifestyle, transformation of health consciousness and sense of values.

If principals of a community knew the synthetic evaluation of the community through community dock, they might also become self-aware of a sense of belonging and value consciousness about their own community and, at the root, become self-aware of more basic social norms and value in order to recognize and evaluate problems of the community. In other words, such inner institutions of local agents as a sense of belonging, value consciousness, norm and ethics might transform themselves during the process and, if so, it would in turn change the properties and effects of such outer institutions as laws, accounting rules and currencies.

If it is made clear that the inner institutions that have changed in the process of community dock do not fit with outer institutions, new outer institutions must be called for so as to correspond to the new inner institutions, and such corrections or modifications of outer institutions are supposed to be sought for in media design. In this way, if outer institutions and inner institutions co-evolve with mutual determination and dynamic change in community dock, it would have a big impact on development processes and the direction of both regional economy and local community.

That is to say, community dock is conceived as an integrated and endogenous process evaluation technique for communities that consist of local inhabitants, companies, shoppers, nonprofits and governments. Community dock recognizes the local socio-economic conditions, while receiving advice and support based on the general diagnosis by the researchers to improve the present conditions through self-evaluation. Community dock is also an effective policy tool for the emergence of a new society along with the co-evolution of both outer and inner institutions. At present, to systemize 'community dock' as a comprehensive approach for community's

self-evaluation and self-improvement technique is required.

Table 1 summarizes two aspects of the similarity between human dock and community dock.

Table 1 Similarity of human dock and community dock

Human Dock	Community Dock
1) Diagnosis and treatment by doctors	1) Survey/analysis and policy proposal by researchers
2) Oral questions by doctors (dialogue between doctors and examinees) + self-check and self-correction by examinees →self-awareness and self-control	2) Report of the survey results by researchers (Collaborating workshop of researchers and communities) + self-check and self-correction by communities →self-awareness and self-control

2-3 Human Dock and Community Dock: The Difference between Them

Although human dock and community dock, as we have just seen, have two sides of similarity, there are significant differences between the two. In order to better understand the features of community dock, it is necessary to accurately recognize not only their commonality but also their heterogeneity. In particular, we need to pay adequate attention to the latter in order to successfully practice community dock.

In human dock, although aspects of self-check and self-correction of lifestyle by the examinee has come to be more emphasized in recent years, there is still a basic precondition that doctors as subject diagnose and treat diseases of patients as object. Accordingly, the subject-object relationship in medical practices and the objectivity of disease condition have not been questioned. Disease is thought of as ill states of mind and body of each patient that can be recognized and identified objectively by doctors' using scientific diagnostic techniques (visual, tactile, or chemical methods). Disease is a target to be erased or removed by using surgery or medication treatment techniques. The states and etiology of disease in patients are objective targets of diagnosis and treatment for physicians. Doctors as actors of medical practice diagnose and treat disease and disorder by making full use of physical and chemical treatment equipment, and taking responsibility for success or failure of their medical acts.

In community dock, on the other hand, even though researchers examine and analyze the current situations and problems of communities, they are not the main

actors who solve the problems of communities by using the examination results as doctors treat diseases. The principal parties of the community, rather than the researchers, should become subjects of problem solving. In order for the community to solve its own problems by itself, researchers should keep on being advisors and encouragers to play a role to assist and support the community, though they may be even proposers and consultants in some cases. If not, spontaneous initiative of local people cannot be brought about.

Of course, there are differences even in medicine, such as Western medicine and Oriental medicine. Whereas Western medicine conceives of disease as the objective target for physician' cognitive manipulation (diagnosis) and intervention (treatment), Oriental medicine teaches physicians, not to directly remove the pathogenesis and lesions of patients, but to activate the nervous and immune systems of patients by using such indirect and mediated techniques as chiropractic and acupuncture therapy as well as herbal medicine, aiming at provoking patients' potential self-healing power intrinsic in their own body and leading patients to a spontaneous cure.

Of the two aspects of human dock, the first aspect of early detection and treatment of disease has been stressed in Western medicine. It is because modern medicine still has a strong inclination to view disease and treatment in schematic understanding that a subject manipulates an object, which must stem from the fundamental dichotomy between subject and object in modern science. The reason why the second aspect of prevention and self-awareness has gradually been recognized might be that the way of thinking in Oriental medicine is now being adopted into Western medicine. Modern economics is similar to Western medicine in the sense that such conventional macroeconomic policies as fiscal and monetary policies mainly seek objective manipulation and treatment of disease and disorder of the macroeconomy. In such view of economic policies, as it were, the side of early detection and treatment is stressed and the side of prevention and change of lifestyle habit is neglected.

Community dock emphasizes that there is the second side as well as the first side. It is because social phenomena are more complex and uncertain than natural phenomena, and the separation between subject and object and the direct operation by subject of object has become more difficult in social situations. Western modern Rationalism has come into effect by basically ignoring problems of complexity and uncertainty. Therefore, its offshoot, Western medicine basically emphasizes early detection and

treatment of objective ailments. In contrast, community dock pays more attention to the complexity and uncertainty of social situations and regards such indirect and mediated techniques as disease prevention and change of lifestyle habit, i.e., evolutionary approaches. Community dock resembles human dock, but it is closer to Oriental medicine than Western medicine in this respect.

We can't thus assume in socio-economic issues, especially at the level of community, a subject-object relationship for the diagnosis and treatment of disease between doctors and patients and objectivity of clinical conditions as in Western medicine. Let's consider why.

While an examinee of human dock is an individual, that of community dock is a community. Even though an individual can mentally have a pluralistic self and fragmented identity, he/she has unique genes and organs and a boundary defined by a physical body so that he/she can be individually identified. In contrast, because community is a collective symbiotic ecosystem of a variety of individuals, groups and organizations, it would be more difficult to clearly define its components and boundary. In addition, a community is more affected by changes in external environments than an individual, and its components and boundary themselves alter according to such changes. Accordingly, it must be more difficult to define the constant identity of a community. In case of an individual, even though he/she dies by illness or emaciation, identity of genes and extensional boundary of the body will be at least maintained until then. Then, his/her objective existence and boundary can be identified. However, since a community contains not only subject-object relations between individuals but inter-subjective relations, boundaries and replicators of a community vary through the cognition and learning processes of individuals. Therefore, identifying communities is not so self-evident as identifying individuals.

Although individuals are composed of various organs when viewed physically, various organs don't have consciousness and independence, neither recognizing themselves nor external worlds. Relationships among individuals, organs and cells form a unitary tree-type structure with a single attribution. A community is composed of local residents as independent individuals in the region as well as various organizations as groups of individuals. Such individuals and organizations have independent will and purposes and can take independent actions. The relationships between communities and organizations or citizens are also hierarchical, but since citizens can belong to multiple

organizations and groups, they form a semi-lattice multi-hierarchical structure. This means that each individual and organization can view the community from a different angle and perspective depending on their positions and interests.

Due to differences in such attributes as age, gender, family structure, education, occupation, income, etc., individuals have different perspectives, motivation and involvement to the community. The same holds true for various organizations and groups. The difference of the attributes makes a difference in their motivation and perspective to the community. For example, shopping streets and the Chamber of Commerce and Industry will view the community through the perspective of the economy, particularly through business conditions, and sales and profits of commerce and industry. Fishing and agricultural cooperatives see a community from the point of view of fisheries and agriculture. Similarly, the Board of Education and schools would see community from education; the Welfare Council and non-profit volunteer organizations would see community from welfare care and volunteering; neighborhood associations see community from mutual help and such activities as snow removal, cleaning, and the town festival; elderly associations would see it in view of aged people, and women's associations from the perspective of women and mothers. In this way, communities are not so monolithic as individuals, and include more complex and diverse relations.

With regard to human dock, individuals stand in the passive position as an object of diagnosis and treatment at the side of early detection and treatment of disease. However, for disease prevention and habit reform, they need to have a spontaneous initiative to recognize the present states and change the ways of actions. In the case of community dock, as we have already seen, uncertainty in identification of a community and various and complex internal relations create bigger problems. Therefore, in community dock, early detection and treatment must become more difficult than in human dock. This is because the very definition and recognition for the health and illness of the community will differ depending on the interests and perspectives of every individual and organization constituting the community. As a result, in community dock, the side of reflection and self-awareness of the scope and conditions of the community, in other words, the side of self-recognition might become more important than in human dock. The community needs to play a more active role as a principal for recognizing and solving the problems in local communities.

Traditional macroeconomics have told us that the central government and the central bank should recognize economic issues such as unemployment of workers and bankruptcies of companies in depression and hyperinflation and bubble formation in the boom, and solve the problems by utilizing fiscal and monetary policies. Such policy view presumes that the central government and the central bank are analogous to 'doctors' who have the ability and responsibility to objectively diagnose pathology and disease concerning economic fluctuations and cure them. It also presupposes operability of the economy as an object and subject-object scheme that underlie modern science, including Western medicine. However, even though the central government and the central bank have continued to carry out all macroeconomic policies during the past 20 years after the collapse of the bubble economy in order for the Japanese economy to escape from recession and economic downturn, the Japanese economy is still stagnant for the long-term. It is high time that we get away from this modern rationalist policy view and introduce evolutionist policy concepts from the outset. Because it is difficult to presume that any subject like doctors can conduct an operational act of medical diagnosis and treatment in a socio-economy.

It is generally believed that, because both local governments such as prefectures and municipalities such as cities, towns and villages must consider local problems universally from a variety of viewpoints of economy, society, education, welfare and culture, the administrative organization in the communities should take main responsibility for solving local problems as principal actors of communities. It is also frequently claimed, based on such a view, that it is the administrative organizations that should solve problems such as the decline of regional economy, dissolution of the local community and budget deficit accumulation, and that these organizations should pursue the administrative responsibility for policy measures and their effects as solutions to problems of the community. However, problem recognition by the government does not necessarily fit the consciousness and sense of values of the local people. This is the reason why inhabitants'-based community development is strongly demanded.

The basic premise that "the principal for solving the problems of the community is government administration" must be re-examined because a community is constituted not only by local individuals, but also local organizations and groups that have joint responsibility, as a whole, to carry out a local solution to problems. Even if an administrative role is still big, the community is a principal actor with a viewpoint as to

community development.

In community dock, in order to know the present state of communities, researchers must study not only on objective statistics of the communities but also on subjective statistics obtained from questionnaire survey on satisfactions and opinions of local agents in the communities. The results of the study will be shared and reviewed in the local workshop. Therefore, not only governments and researchers but also local resident individuals and organizations must participate in identifying community's problems.

Once such a viewpoint is fixed, the role of the researchers in community dock and how this viewpoint corresponds to that of the doctors in human dock will become clearer. The researchers investigate and analyze the present conditions and problems of the community objectively, but should not straightforwardly propose what they think is a desirable policy agenda for the community based on the study results. The researchers need to encourage all of the local inhabitants, local governments, and other various organizations and groups constituting the community to successfully recognize heterogeneity contained in their motives and purposes in order to work out solutions to community problems so that they can strengthen mutual ties and trust to rebuild the community. The researchers are not main actors in the same way as doctors who diagnose and treat patients, although they should survey the present conditions of the community, give advice and suggestions based on the results, and provide appropriate support to the community so that it can unite and proceed toward self-healing.

Table 2 shows two different aspects between human dock and community dock.

Table 2 Heterogeneity of Human Dock and Community Dock

Human Dock	Community Dock
1) Subject-object relation between doctors and patients (examinees), unified and objective diagnosis and treatment of disease by doctors	1) Cooperative relation between researchers and communities, inter-subjective evaluations and solutions by researchers and communities
2) self-evidence and unity of patients as individuals → compatibility between early detection and treatment and prevention and improvement of habits	2) Multiplicity and complexity of community → difficulty of early detection and treatment, significance of activity in self-check and self-correction

2-4 Media Design and Community Dock in Evolutionist Institutional Design

Now we would like to explain what evolutionary institutional design (EID) is by introducing two basic concepts of evolutionary economics³, *replicators* and *interactors*, and what kind of new view of socio-economic policy as different from the conventional one EID proposes. By doing so, we clarify the aims and significance of EID. We also describe what media design and community dock are and finally the relation between them.

DNA is a complex-molecular structure that encodes biological information as the building blocks of life. Although each organism's DNA is unique, DNA differs from organism to organism and from species to species. In contrast, in socio-economic evolution replicators that characterize the property of each socioeconomic system are 'if-then' rules and interactors are causal agents such as individuals or organizations that recognize, decide and act according to their own replicators. From the viewpoint of each interactor such as an individual or organization, replicators, the rules that interactors obey, are divided into "external rules" (e.g. game rules, laws, customs, shared ethic codes and values consciousness) that exist outside of interactors and belong to a higher level of interactors and "internal rules" (e.g. game strategy, cognitive frame, psychological bias, behavioral routine, propensity and inclination) that belong to only the inside of interactors (Fig. 1, Nishibe 2010).

Fig. 1 shows a simplified evolutionary model of socioeconomy that contains nested structures composed of replicators and interactors. Interactors ij endowed with replicators ij signify individuals or organizations. They compose upper groups or organizations as interactors j . Interactors ij and interactors j of Fig. 1 correspond to the micro level and meso level, respectively, in Fig. 2.

Fig. 2 shows a diagram of Micro-Meso-Macro Loop in which the micro, meso and macro levels form double mutually determining loops. In Fig. 2, individuals or organizations on the micro level are depicted as interactors ij with replicators ij (internal rule) as in Fig. 1 and institutions on the meso level in Fig.2 are depicted as replicators j (external rule) shared by interactors ij as in Fig. 1.

³ Please refer to Hodgson (1988, 1993) and Nishibe et al. (2010) regarding basic ideas and concepts of evolutionary economics.

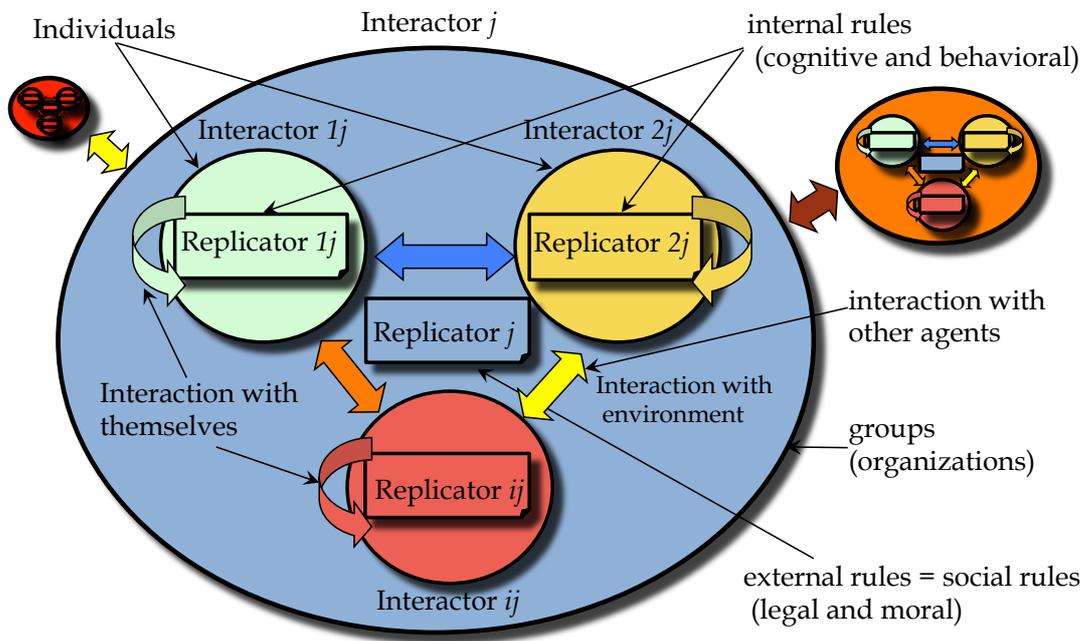


Fig. 1 Multilayered nested structures composed of replicators and interactors
 (Source: revised from Nishibe, etal. (eds.) (2010:80))

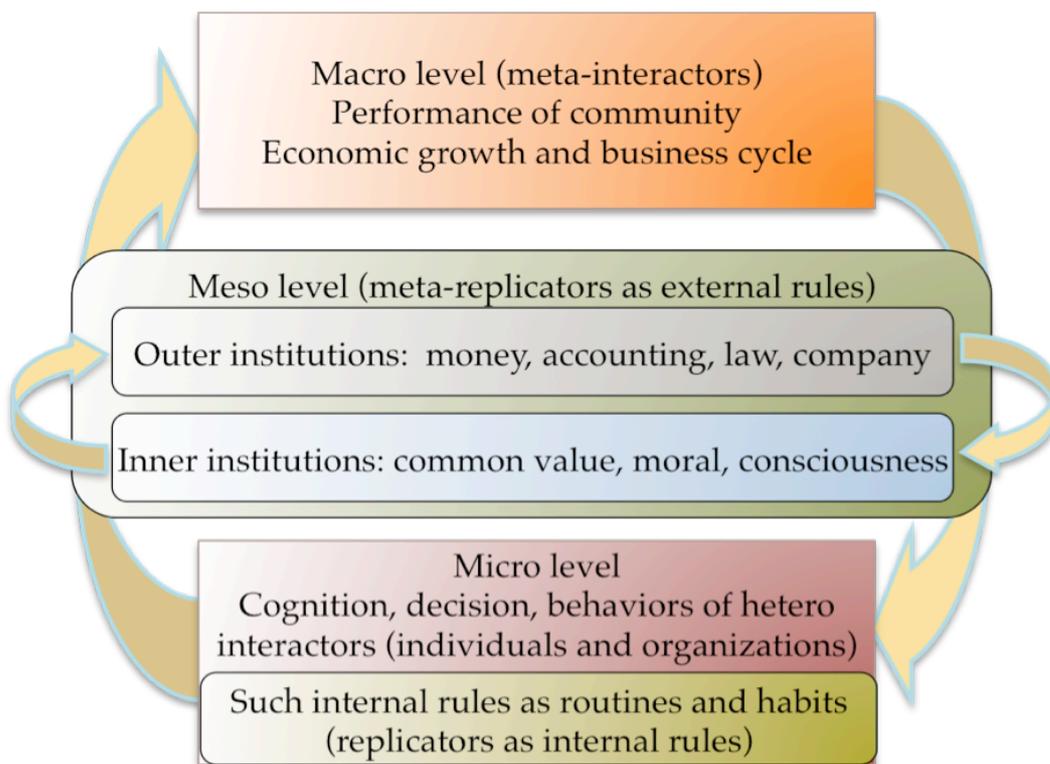


Fig. 2 Micro-Meso-Macro Loop (Source: Nishibe & Kusago (2012:15))

As long as interactors ij continue to belong to interactors j at a higher level (meta-level), it should follow not only replicators ij (internal rule) but also replicators j (external rule) when they recognize, decide and act. If rules on two levels collide, interactors ij should give priority to outer institutions (external rules), i.e. replicators on the meso level. On the contrary, once interactor ij on the micro level gives priority to following replicators ij (internal rules), interactor ij no longer belongs to interactor j of the meso level. For example, employees of a company must follow the rules of the company. Otherwise, they would be dismissed.

In addition, any interactor on the meso level in Fig.2 corresponds to interactor j with replicator j in Fig.1. Replicator j as institutions on the meso level is the external rule for interactor ij and the internal rule for interactor j simultaneously. Replicator j is the outer institution or the inner institution depending on the different properties of rules as mentioned above. Both inner and outer institutions form self-reinforcing loops, making them more stable. Once heterogeneous agents as interactors on the micro or meso level recognize, decide and act according to different external rules and internal rules, their interactions will show a certain performance, order and patterns of interactors (e.g. national or community system) on the macro level. Heterogeneous interactors on the micro or meso level observe the performance, order and patterns of interactors on the macro level as a change of external environment and adjust their own behaviors. Accordingly, micro agents (interactors with replicators) and macro systems (meta-interactors with meta-replicators) form mutual deterministic loops mediated by meso institutions. Through repetition of such dynamic processes, various institutions form mutually complimentary or substitute relationships. Those institutions emerge, compete, coexist and become extinct with their rise and fall. We refer to such dynamic and evolutionary systems as “institutional ecosystems” because these systems are similar to biological ecosystems that evolve with a variety of species preserved (Nishibe 2010; Hashimoto, Nishibe 2012).

Here, let us look at ways of policy-making by using the two kinds of institutions –outer and inner institutions– just described. The first type of socio-economic policy is called “institution unaltered” since it realizes policy effects by changing parameters or variables in rules with given institutions unchanged, and the second type is called “institution altered” since it realizes policy effects by changing certain rules in institutions. Therefore, we can classify policies into four categories along two axes of

outer institution and inner institution (Fig. 3).

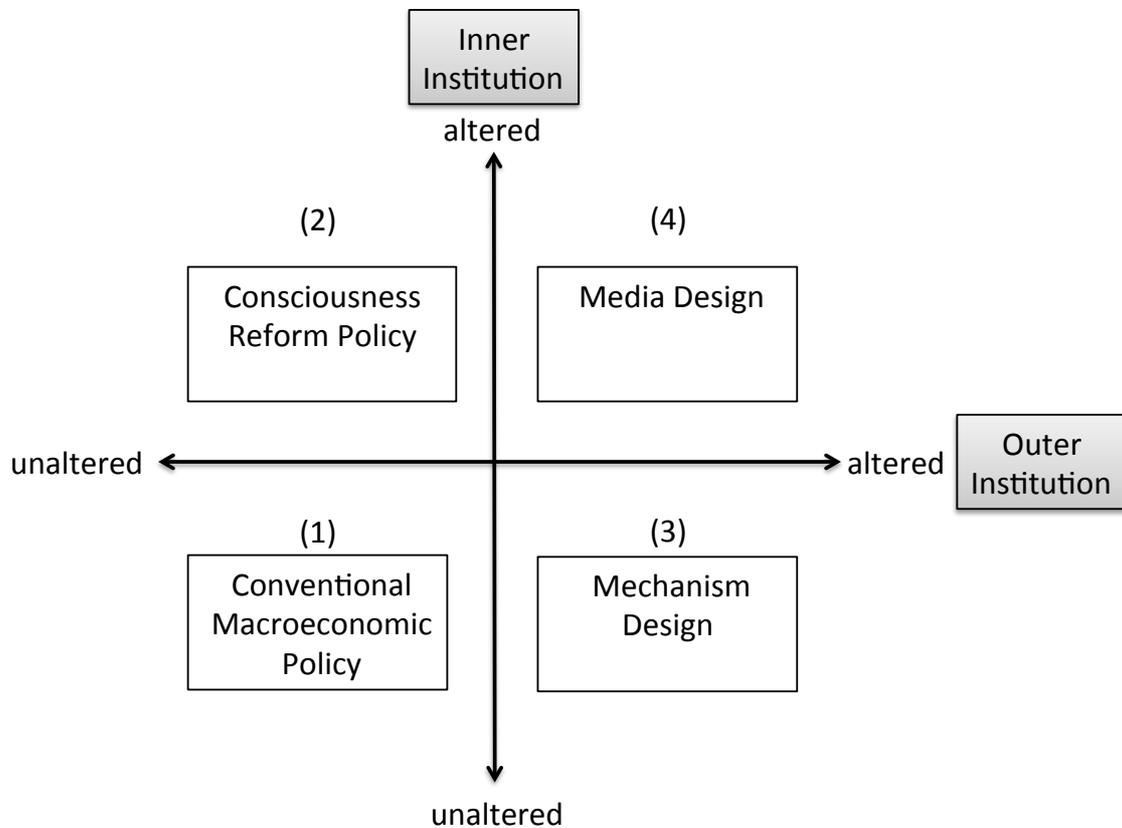


Fig. 3 Classification of policies into 4 categories in Evolutionary Economics (Source: Nishibe (2010:249))

Fig. 3, Case (1) indicates such conventional macroeconomic policies such as fiscal and financial policies that aim at the performance of certain desirable socio-economic conditions (e.g. a boom, economic growth and economic equality) by adjusting macro parameters (e.g. public spending, prime interest rates and money supply). This case shows policy with both outer and inner institutions unchanged. Case 2), the second case shows a certain type of consciousness reform policy by altering inner institutions, not outer institutions, on the meso level. For instance, ethical consumption, social investment and corporate social responsibility are conceived as this category. This type of policy was occasionally used in Japan in publicity campaigns for growth-oriented public awareness by introducing income doubling plans for rapid economic growth during 1955-1965 as well as an adjustment of peak utilities for electric power use by spreading propaganda for power-saving consciousness during suspension of all nuclear

power plants after the Tsunami disasters in 2012. Case 3) corresponds to a policy that tries to change the behavior of the economic system by altering outer institutions without altering inner institutions, presupposing the optimization decision of agents. This case represents competition policy and "mechanism design" in applied microeconomics. Case 4) is "media design" as an application of "evolutionist institutional design". This is the type of policy that targets the realization of more desirable social consequences by altering outer institutions, especially altering the design of platform institutions (media). Since the outer institutions determine fundamental ways of cognition and behavior for all agents, and they are being utilized as frames of reference to form inner institutions, any attempt to change outer institutions will usually involve alternation of inner institutions, leading to a change in universal rules for agents to recognize, decide and act upon rather than individual adaptive behaviors. Conventional theories of economic policy only deal with 1) macroeconomic policy and 3) mechanism design, but these do not consider any change of inner institutions. However, the evolutionary approach for socio-economic policy can include other possible cases with alteration of inner institutions, such as in 2) consciousness reform and in 4) media design whose potential significance has not been fully understood to date.

In this way, evolutionist institutional design is a new approach for policy-making that attempts to indirectly control boundary and performance of systems and induce agents to alter such behavioral rules as morals, motivation, and value consciousness by appropriately designing rules of outer platform institutions that basically regulate the behaviors of evolutionary systems.

Fig.4 shows the nested structure of evolutionist institutional design that media design and community dock form. While media design is located on the upper level within evolutionist institutional design, community dock is located on the lower level. Media design and community dock are practical policy instruments by evolutionist institutional design approach.

The relationship of these two methods can be understood more concretely in the case of community currency. First, media design is set up by volunteer initiators to be the initial design of such platform institutions as community currency. System design of community currencies may vary depending on the present situations and the purposes to be achieved in the policy, and can be changed while observing the implementation

results. By using community currency as instrumental media, in contrast to the top-down policy by the central government, it is possible to develop a wide variety of bottom-up theories and policies to fit different local situations with the initiatives of local governments, chambers of commerce and industry, and nonprofit organizations. The practical technique for such community development is "community dock". For example, community dock uses factual information on the circulation of community currency and its participants' transactions as well as other knowledge obtained in a questionnaire survey so that the community can accomplish self-evaluation of its own present state and perform self-alternation by making use of the results for setting a target for improvement. Community dock is thus not only a policy making tool but also a social experimental program.

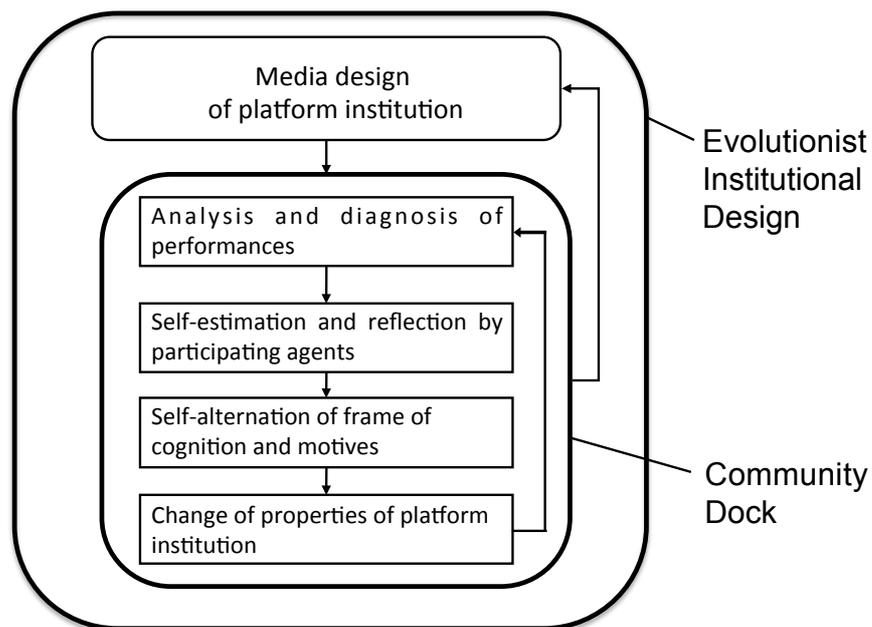


Fig. 4 Evolutionist Institutional Design: A Nested structure of Media Design and Community Dock (Source: Nishibe 2006a)

In Fig. 4, the procedures of evolutionist institutional design are schematized, and the implementation process of community dock and media design proceeds as follows:

- 1) First, policymakers such as local governments, chambers of commerce and industry,

and nonprofit organizations design platform institutions (outer institutions) on the meso level that they consider able to realize the desired socio-economic prospects [Media design I].

2) While micro agents such as local people, companies and local governments that make up the community make daily life and do social and business activities under the newly introduced or reformed outer institution researchers analyze and diagnose the institution's performance on the macro level from the aggregate result of making a living and social and business activities [Community dock I].

3) Based on the aggregate results in 2), the community consisting of local residents, businesses, organizations, nonprofits and government performs a self-evaluation and self-correction regarding the current state of the community. [Community dock II].

4) Through this process, the inner institutions (cognitive frame, motivation and value consciousness) for local agents changes. [Change of inner institutions]

5) Consequently, the effects and characteristics of given outer institutions also change. Under the same outer institutions, local agents iterate the above process from 1) to 5). In this way, community dock will make a loop between the following three levels: acts by agents (on the micro level) , institutions (on the meso level) and performance (on the macro level). [Change in the characteristics and effects of given outer institutions]

6) While such loop processes are repeated many times, various pieces of information as knowledge and experiences accumulated in the community feed back to the level of the design of the platform institutions (such as community currencies), and a fine-tuning of some of the rules of the current institutions takes place. Once such knowledge and experience exceeds a certain threshold, re-design of the platform institution is performed, resulting in overall changes in the rules [Media design II].

The above process is repeated under the new system. In this way, when media design and community dock are performed in evolutionist institutional design, they are combined into a nested structure as shown in Fig. 4. (Nishibe, Kusago 2010; Nishibe, Kusago, Hashimoto, Kichiji 2010).

3. Needs for Community Dock: Its Significance from a Vantage Point of the Local Residential Community

After the World War II, the Marshall plan or the European Recovery Program,

ERP, was used by America in order to prevent the spread of Soviet Communism. In Europe, the Marshall Plan helped the recovery of these many European nations and even Japan recovered in ten years after the end of the War. Economic assistance to European developing countries was based on economic growth models that provided capital and technology. (Nurkse 1953; Hirshman 1958; Lewis 1955) The goal of the ERP was a high level of standard living backed by income growth, enabling people to purchase more goods and services.

Applied development policies can be categorized into economic growth policy, economic distributional policy, basic human needs policy, economic structural policy, and pro-poor economic policy. Over time, the policies gradually shifted from key factors for economic growth to those for quality of life such as education and health.

However, the foundation of these development policies had not changed much, which relies on the notion of individual utility as given or unchanged. In the case of policy evaluation, economic indicators represented by GDP, per capita income and economic income gap data are utilized to measure the outcome of economic and social policies.

Economic growth is generally pursued for a better life through employment, higher income, better public services, and some believe, a happier life. Higher GDP can ensure the effectiveness of social and economic policies. Successful economic development of the post-war Japan, which motivated the World Bank to write about the East Asian Miracle (World Bank 1993), was considered an economic model for developing countries. From 1948 to 2005, in Japan, the GDP consistently increased and Japan was able to improve people's quality of life by expanding provisions of education and health services. However, examining Japanese people's life satisfaction data, the trend of GDP growth shows a very different path from the expectation. The People's Life Preference Survey, started in 1978, and conducted every three-years by the cabinet office of Japan, asked the same life satisfaction questions. According to this data, the level of people's life satisfaction reached its highest level in 1984 and, since then, it has declined until 2005 (Kusago 2007). Easterlin's Happiness-Income Paradox (Easterlin 1974) derived from the Japanese data, implies that the economic growth approach, assuming the conventional institutional framework and economic development model, may not bring about a realization of higher life satisfaction and/or well-being. (Fig.5)

Recently, different approaches have emerged, which aims at improving people's

living conditions. One such approach is the capability approach (Sen 1992) proposed by Amartya K. Sen, a Nobel Prize-winning economist. This approach is based on the human development concept⁴ and values the key elements of people’s well-being, which includes economic, educational, health and other social factors. It has received considerable attention from policymaker.

The human development concept has received global support since 1990. The goal of this approach is the improvement of each and everyone’s capability set or freedom of choice as a key to improving people’s well-being in a comprehensive manner.

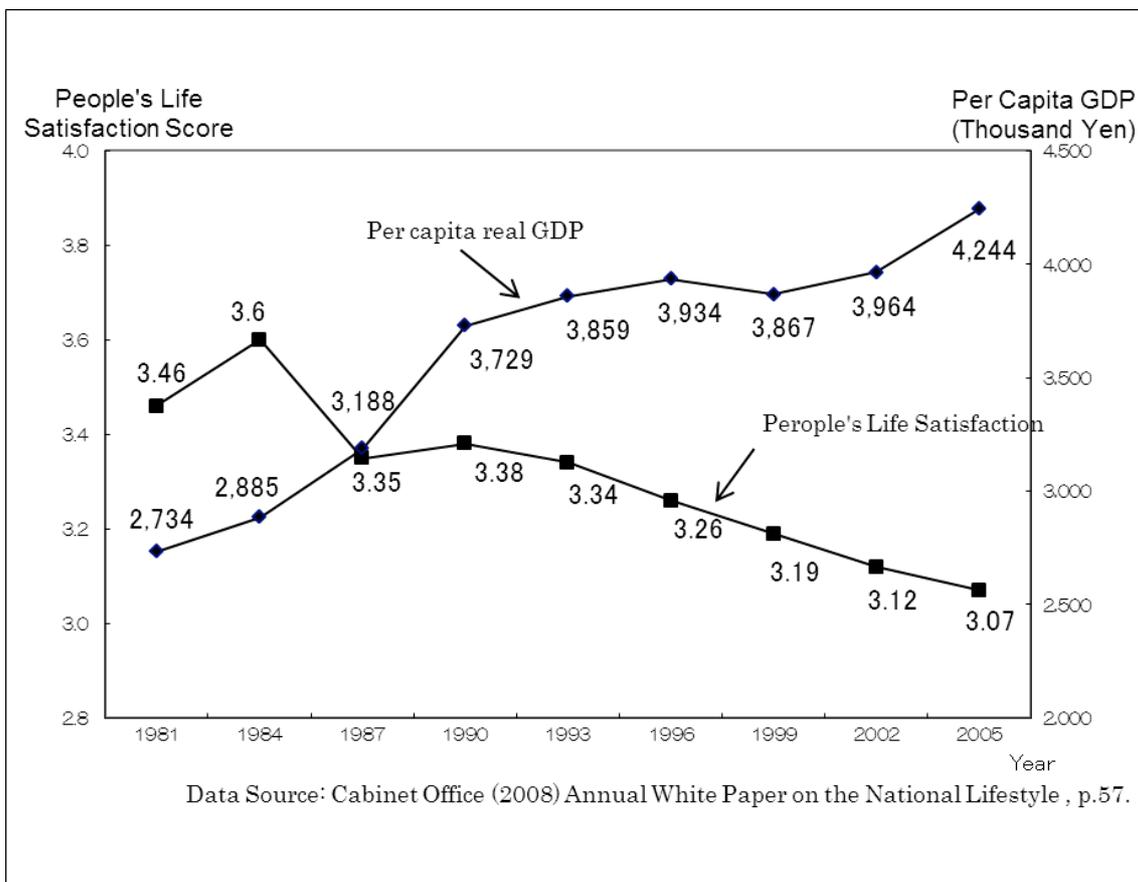


Fig. 5 Community dock as process evaluation by the usage of local community basic data and local people’s subjective data

Sen thinks that the provision of goods and services does not guarantee people a high level of well-being, and points out that people can choose a set of goods and services and transform them into more meaningful life path by the maximum use of their own

⁴ UNDP published its first human development report in 1990 (UNDP 1990) and has promoted development of human development index.

abilities and preferences. He emphasizes that society should give freedom to all regardless of conditions such as illness and disability, which is considered as the ultimate goal of development based on his capability idea. To realize this, the role of local community and living conditions has become critical. Among factors, which may hamper realization of society based on the capability concept, structural issues for causing social injustice like prejudice and discrimination are included. If one pursues society that improves people's well-being, local social structure needs to be changed simultaneously and local policy should be evaluated from that angle. In fact, depopulation in rural areas and local cities with a weakened local economy became a serious issue in Japan, and, in particular, the issue of subjective well-being and happiness of local people in these areas needs special attention. As an effective measure to solve these social issues, local agents should take actions to improve their own well-being by respecting and maintaining the good aspects of one's own community.

In discussions over "affluence," some argue that multi-dimensional measures rather than a one-dimension economic measure like GDP is preferable in order to incorporate comprehensive nature of people's well-being into the measurement. In this context, after the human development index (HDI), considered as the most used and popular development index in the world, was developed in 1990, different indexes including the Canadian well-being index and the GNH (Gross National Happiness) index in Bhutan appeared.

Also, in 2009, under the initiative of then-French President Sarkozy, a report edited by Sen and Stiglitz (Stiglitz, Sen and Fitoussi 2010) was published, and showed that multi-dimensional well-being is needed to measure people's living conditions and societal progress. In late 2010, the government of Japan formed an expert group for the nation's happiness indicators and currently other governmental initiatives related to happiness are on the increase.

These efforts to develop new indicators show us that more people understand the importance of well-being measures than GDP; however, this does not tell the communities how to achieve this state of well-being. Thus, it is important to have a practical tool to enhance people's well-being that can be regularly monitored and evaluated jointly by local people and local government. In this context, community dock can be described as a systematic tool to ensure that local agents, like local people, local groups, shop owners, companies, NPOs and local government, start social experiments

or new local policies in order to achieve high subjective well-being and happiness level by influencing people's value systems.

4. Social and Economic Evolution on the Level of the Local Community Respecting the Spontaneity of the Local Residents as Inhabitants

As we have seen in the previous section, in a conventional system, experts and government officers are in charge of design, implementation and evaluation of policy measures and are expected to suggest solutions to improve local living conditions. Thus, to understand the present local living conditions, they collect various social and economic data at the local level and analyze them with their expertise and knowledge to identify barriers to better local living conditions, and to identify solutions to tackle them.

However, this procedure does not necessarily need local-initiatives and may not require an endogenous local development idea: local agents should engage in nurturing local living conditions. Conventional economic growth models and an unaltered institutions approach is not effective in solving the local issues incurred by post-war local development policy if endogenous initiatives are essential for high well-being and happiness. Emphasis on local community can make people think more about their own well-being by themselves in a concrete manner and their perceptions and values can be shifted toward accepting alternative institutional framework of their own local community.

With the globalization of the economy, culture, and the citizen, new problems like unemployment, depression, and suicide arise partly because of the weakened social ties and restructuring in the private sector. These social problems are in most cases found through the country. If this is the case, one might suggest that "Japan dock" (a country dock) instead of community dock be considered Japan as the unit of community in the age of globalization. However, if we expand our locality to the country level, more attention tends to be made to the country's average score, and importance of diversified characteristics of different local areas, which differ by local resources, social structure, life and natural environment, local culture, become less. According to a recent study, the level of people's life satisfaction and happiness are affected by mutual interaction and ties with family members, friends, neighbors at the local community (Helliwell and

Putnam 2004). If the living conditions of the local community together with the people's well-being are improved, a vision of the future can be drawn and policies can be implemented by understanding circumstances inherent to each local area. However, if the nation is recognized as the unit of analysis and community dock is applied at the national level, it is likely that there will be gaps between the national average and the local reality in domains of economy, education, health, culture, and environment. This may result in a standardization of local living conditions in one country because the national average is the benchmark in the analysis of local living conditions' data. This may reinforce the conventional, unfaltering, institutional framework that pursues economic growth such as, for example, per capita GDP.

If an alternative way to expand social ties without paying attention to the existing gaps between urban and rural areas is considered, or if communities are labeled marginal villages, where more than half of the local people are aged above 65 years old, and seek advice and policy suggestion from external experts, the uniqueness and diversity of these local communities may be ignored. Rather, it is important to look at people-to-people relationships at the local community level and the perceptions of local people in the community about their own community local living conditions are to be improved. The evolution of a social system may be necessary, but simply transforming the existing institutional framework, which hampers people-centered development, to a new social institution, will not always form a new local community. Thus, targeting the unit of local community as a living sphere can be a practical tool in changing the ground framework of the societal institution.

5. A Summary of the Dynamism of Community Dock

In sum, community dock as shown in Fig. 2 consists of a) a diagnosis of a macro-performances of community, b) a change in the comprehensive lifestyle and value system through self-inspection and self-correction, c) a change of a community's own perception and motivation on community development, and d) a change of features and effectiveness of institutions. The dynamism of community dock works as an institutional ecology through mutual interactions among different institutions and among institution and local agents.

Conventional methods ask experts on development policy to design local living

conditions, conduct evaluation by analysis of local data and identify their problems, given the current institutional framework. This method does not encourage local people to be aware of themselves as initiators of improvement in their own local communities.

In Japan, the problems of deteriorating rural and urban areas has become serious and debates on how agents of local communities could improve their social well-being without depending on the government have increased. However, in the present system, an institution altering policy framework can be a root cause of these serious social problems. This institutional policy may result in an increase of the number of waning communities if the conventional development model is followed. Local people who know the local resources best, must sit in the central seat of local policy-making to induce local action for the realization of sustainable local development. Therefore, the development and application of community dock has potential as a new local revitalization tool.

It is important to explain what a participatory social assistance process is in order to make it clear that community dock is a transforming tool of institutional framework.

Social support, based on the conventional unaltered institutional framework, consists of external experts' policy recommendations through survey and analysis. Selection of the experts depends on the clients' needs. This implies that experts involved in one stage of the process are not always the same in another stage partly because the different stages face unique problems to solve. Also, experts do not work as a team and involve only a part of community development process; rather, each expert tends to work independently, not works as a team, even though they are involved in the same local problem. Therefore, the conventional framework receives policy recommended by individual experts but does not encourage interdisciplinary perspectives and approaches, indispensable for promoting comprehensive local development. Advice from experts is given through a form of research report and presentation, which does not ensure changes in local living conditions. In this context, evaluation is only about one third-party's external review on local development, which uses only macro- and micro-economic social indicators. Social support which incorporates comprehensive and consistent benefit to local community development is hard to expect.

On the other hand, the process of social assistance is characterized by the participation of local agents. Identification of local problems and its solutions by local

people, local groups, shop owners, companies, NPOs and local government requires experts who have interdisciplinary perspectives. In the case of community dock, external experts should collaborate with other experts and local agents, and play the role of facilitator who help local people to use own knowledge and ideas in the process of community development, and these experts will become involved in every stage of social change from policy formulation, implementation to evaluation in collaboration with local agents, which makes this process a community dock.

Community dock pays close attention to existing conventional objective data and respects new local data gathered as various voices from both external people and local agents, because it assumes that local people are the ones who know their own community well. Community dock initiates a community-driven local development process and comes up with effective policies. Once these policies are applied, changes that occur in a community can be measured not only by existing macro- and micro-social and economic data but also new subjective data given by local people, which helps local agents and external experts to examine jointly if the direction of local communities follows the vision formed by local people. Affluent local communities are the places where the level of well-being of local people becomes high accordingly as they develop. For this to be realized, evolution of the institutional framework is needed and must be transformed from unaltered to altered institutional framework.

For all of these reasons, community dock has the following potential:

- A tool to improve local living conditions through local people's initiatives
- A process-evaluation method by the local community involving local residents
- Lead in policy formulation by a collaboration of agents in local communities and external experts
- Improvement of local living conditions by local people's ideas with support of local actions and policies

Community dock is therefore “action”, “policy” and “movement.” Community dock is a bottom-up social movement as well as a social pilot program.

6. Methodology of Community Dock: Framework of the community dock: a social system design method with civic participation

We thus far have explained the concept of community dock. The community dock

is a comprehensive reflective method to monitor and evaluate changes of local living conditions by local people. The community dock basically utilizes subjective assessment of one's own local living conditions and various basic data⁵ collected mainly by the local government (Figure 6). This section gives an outline of its methodology to make the community dock better understood.

Objective data collected by the government is comparable to technical diagnostic data on a patient's body using advanced medical instruments such as X-rays or endoscopes. In sum, the community dock makes local people evaluate local living conditions from multi-dimensional aspects such as local economy, local health, local

⁵ This paper defines "basic data" as objective basic local profile data and "subjective data" as local people's views and opinions about their own lives and communities.

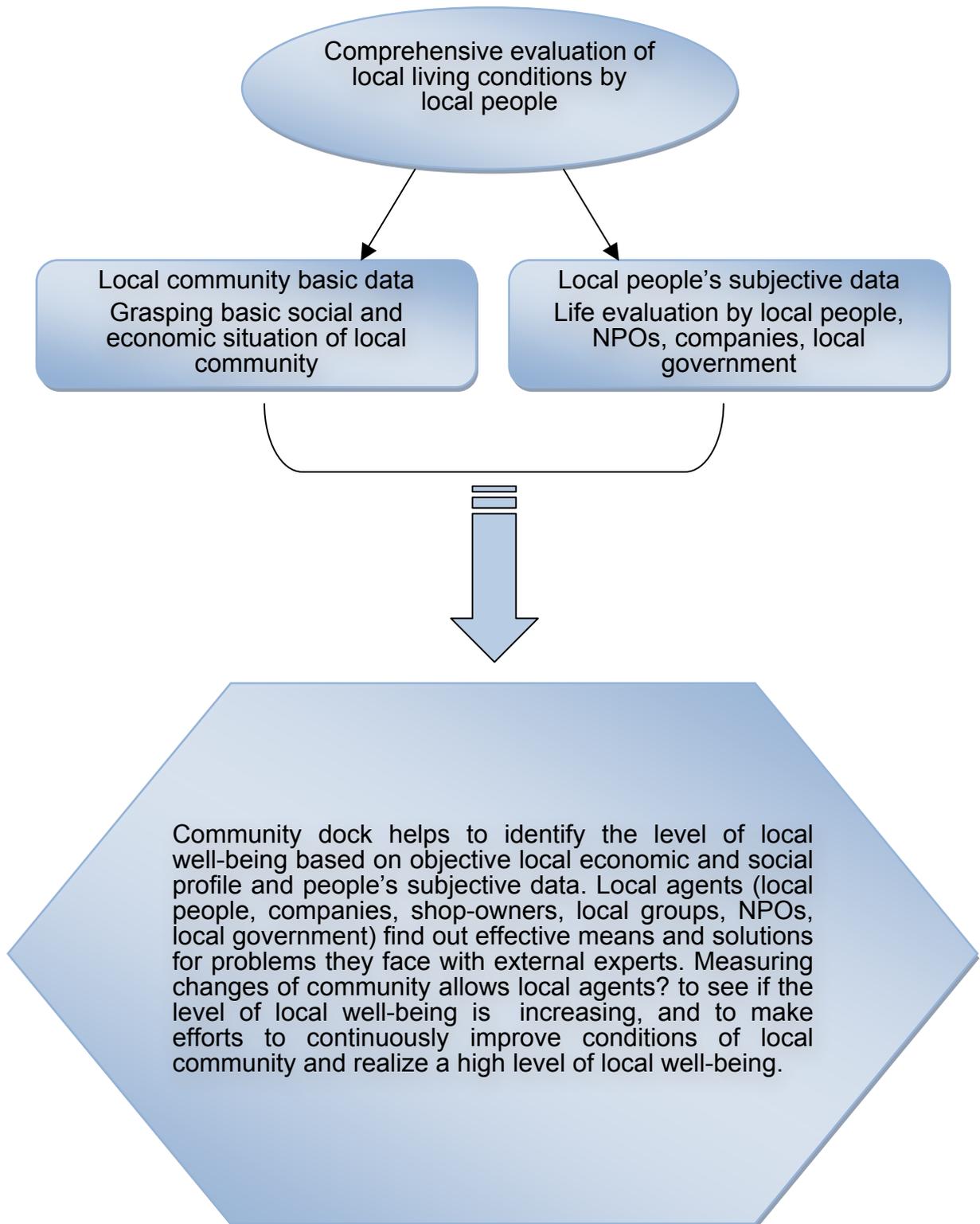


Fig. 6 Community dock as process evaluation through the local community's basic data and local people's subjective data

education, and local environment with objective data of their own community.

The local assessment method, however, changes if local conditions are viewed from the perspective of economic growth or human-development. If local conditions are examined from the growth approach which carefully examines economic data like the level of local GDP and Gini-coefficients, then a view of the local economy is clear. However, if the human development approach is followed, data on education and public health as well as the economy are required to calculate the human development index (HDI) and analyze the level of HDI⁶. Local economic conditions should be evaluated by economic indicators like per capita income, the unemployment rate, and Gini-coefficients in the local area in addition to local educational conditions by school enrollment rate and literacy rate, and local health conditions by longevity and suicide rate. With these local data, we can evaluate local living conditions from a community dock view.

In the case of human dock, a medical doctor asks examinees, “How do you feel about your own health?” which helps patients to reflect on their own health conditions by looking into the data obtained by a medical check-up. By doing this, the patient may realize something new about his or her own health, which may make the patient reflects on his or her present health management and treatment and make them change to improve their own health in the future. Community dock is similar to this human dock and aims at improving comprehensive health and the well-being of the local area and local people. In other words, the community dock collects voices over local living conditions from local agents such as local people, local government, companies, shop owners and NPOs by asking questions such as: “Are you satisfied with your own local life and in what way? ” “Do you have complaint?” “Do you feel secure about your local area?” “Do you trust people?” With the answers to these questions and the results as local data, agents in the local area can evaluate, analyze, and search for solutions and their implementation, and reevaluate local living conditions.

The purpose of the community dock is to promote the improvement of local living

⁶ Domains of community dock are listed as the economy, education and health in this paper following the human development index by UNDP. However, in reality, local resources, culture and tradition, environment, economy, and social structure varies with local areas. Local considerations should allow local people to select factors influencing the level of people’s well-being from the human development point of view.

conditions initiated by local agents through mutual collaboration, following the direction of the community's own development. For this to be realized, conditions of local society need to be regularly assessed in a multi-faceted manner, which requires two types of data (objective and subjective) as in the human dock. Analysis of time-series data allows both local agents and external experts to find out if there is a place where any improvement of local living conditions is needed, and, if so, how it can be accomplished, and, if not, what needs to be changed to improve local life conditions through a community dock process.

It is important to ask who should lead analysis and use of the data revealed by the community dock. As we have seen, the community dock is the agency-based endogenous tool to improve the local living condition developed as an analogy to the human dock (health check-up system), therefore, local entities like local people and groups, companies and shop owners, NPOs, and local government are the main users. In the process of the community dock, the role of the academia and experts should remain as simply assisting the locals in data collection and analysis, which is different from academia and government's conventional role in giving technical advice on local policy and policy evaluation their own in-depth analysis.

External experts in the process of the community dock understand local conditions and identify local issues by analyzing the time-series data on local people's attributes (gender, age, race) and local characteristics (job, income and social strata). These experts want to bring local people and institutions together to communicate among themselves as to the development of their communities and to promote concrete actions such as the introduction of local community currency.

7. Step-by-step procedure of community dock through a Community Currency pilot project

In this section, we explain in detail what community dock is through a particular case of the Community Currency (CC) pilot project

Community dock requires two types of survey work, (a) how and to what extent changes can be made in local economic activities and social welfare activities (such as voluntary work) by the introduction of CC (direct impact assessment) and (b) how and to what extent can changes be made in local people's living conditions and life

satisfaction after the introduction of CC (indirect impact assessment). Community dock provides a venue for local agents to take a continuous flow of actions with direct and indirect impact data by comparing changes in these data between before and after the introduction of the CC project. This process allows the local agents to examine if some changes occur, and to discuss if the CC project needs to be modified, or alternative ways created for a better outcome for local life conditions.

The following describes the step-by-step procedure of the community dock method using the CC project

Step 1: Design of community dock and preparation for implementation

When the community dock is applied to the CC project, a procedure, which consists of the following two components must be designed:

- (1) A framework to measure changes in the local community by the introduction of the CC.

First, local data called 'baseline data' on the economy, social system, and environment to assess possible changes occurring after the CC project is applied. In particular, (a) direct impact of the currency expansion by quantitative analysis of social network data, and (b) confirmation of local economic and social development strategy should be made.

- (2) Design of a method to capture changes in local living conditions from the view point of local people in the community

Next, the present conditions of local life must be confirmed by examining the baseline data through people's perceptions. Broadly speaking, two concrete activities are included in this step: (Figure 6).

- Understanding the conditions of the local community by selecting social and economic data (economic indicators, social indicators, environmental indicators, etc.) from the existing statistics on the local community
- Evaluating the local living conditions by local people's subjective data such as life satisfaction, hope, values, and individual attributes collected by survey and/or group interviews.

Step 2: Introduction and implementation of community dock

The process of community dock needs to be initiated from the use of the baseline

data to assess the present level of well-being of local people and their community. A systematic social survey on a regular basis provides local agents with information to monitor and evaluate changes in local well-being. A social survey allows the identification of key determinants of well-being and/or issues related to the level of local living conditions. By sharing these data with local governments and local people, a collaborated dialogue will identify problems and hopefully find effective policy solutions like introduction of CCs, which eventually improve local economy, strengthen social capital and local well-being.

Step 3: Process of self-evaluation and readjustment by community dock

The mechanism of expected policy change induced by community dock is a comprehensive endogenous transformation process (Figure 7). In other words, local agents can trace social and economic changes of the local community by setting the baseline data as the starting point of the whole process with the introduction of CC. For example, after the local community starts its CC, they can follow if social ties in a local shopping street and those among local people have changed from the baseline level. If needed, local agents can think of possible modifications of platform like the CC itself. Furthermore, local agents can follow changes in local living conditions from the local people's subjective assessments, which lead to policy adjustment, policy proposals and re-examination of policy implementation.

When we apply community dock, team-formulation requires careful preparation. Community dock can be categorized as action research and it promotes a process-oriented system for policy change. Thus, those who are the key members of the community dock will be able to differentiate the user of the data and its way of use.

First, members of community dock should understand well the needs of the dock method. With positive understanding of the community dock, the members can participate in the dock smoothly, which helps capture more precise data on local living conditions. In the case of action research, understanding by the research members is a must, which is applicable to the community dock in that local agents like local people, local government, local groups, local companies, and NPOs will understand the main purpose of the method and system of the dock.

Second, participation of a group of researchers, who have expertise and

experiences of community development, is essential for the design and implementation of the community dock. Community dock collects and analyzes data by way of various social surveys, and builds up a local knowledge database. To do this, academic researchers who have social survey and analytical skills play a crucial role. However, the researchers should not impose such survey methods and contents, but should promote collaboration to design surveys and implement them through good communication with local resources.

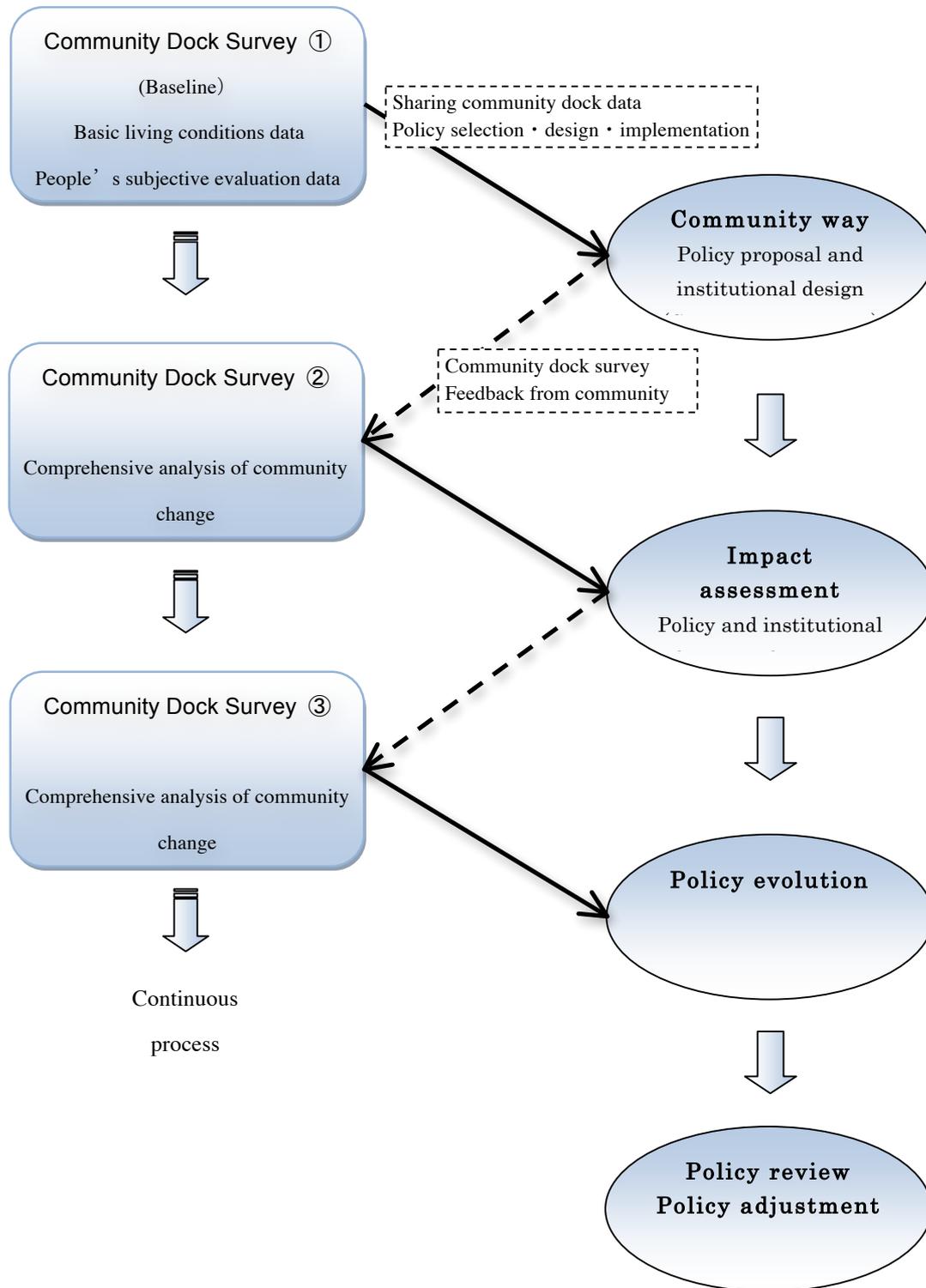


Fig. 7 Mechanisms of policy-change through the introduction of community dock

8. Conclusions: The Potential of Promoting Social Evolution through Community Dock as an Institution-Altered Type of Policy Instrument

There is a limit on a problem-solving method led by the external experts when face to face with challenges in a community that is economically and socially exhausted. The conventional methods of policy design, implementation and evaluation might cause these situations. In this paper, we have advocated for an examination of community development through local people’s eyes that should help them revise or build a new form of institutional framework and system in order to improve local living conditions and people’s well-being. We have proposed “community dock” as such a method.

As shown in Table 3, the community dock method as an altered institutional framework has some distinctive features different from a conventional unaltered institutional framework.

**Table 3 Comparison of Policy Methods for Community Development:
Unaltered institutional vs. Altered institutional frameworks**

	Unaltered institutional framework method	Altered institutional framework method (Community Dock)
Core members	Experts and researchers	Collaborating team of external experts/ researchers, local agents
Role of researchers	One-way advice from experts	Two-way dialogue and mutual discovery
Role of local agents	Passive and Inactive	Positive and Active
Methodology	Analysis and evaluation based on scientific evidence	Method for social evolution, Process evaluation
Area of expertise	Particular field of discipline	Interdisciplinary
Output	Research articles, research reports and policy recommendations	Workshops, recommendations for social evolution, practical reports
Agents of action	Government	Agents of Community (local people, local groups, companies, NPOs, local? government)
Approach	Top-down	Bottom-up
Planning Approach	Detailed plan	General plan and adjustment
Challenge	Risk of authoritarian system	Formulation and implementation of a collaborated team

In an unaltered institutional framework method, external experts conduct assessment, which is similar to a medical diagnosis test and propose solutions based on their specialized knowledge to the questions local people face. Next, policy implementation follows the experts' recommendations. On the other hand, in the case of an altering community dock, in a method of altering an institutional framework method, experts collaborate with local agents of action in a horizontal relationship, not vertical one. Community dock acts to improve the comprehensive well-being of local people as assessed from various aspects such as economic, social, cultural and environmental. For this very reason, an interdisciplinary approach needs to be incorporated into the community dock approach and each member of the dock team is expected to have a comprehensive view and interdisciplinary attitude.

Local agents of action play an active and positive role in community dock although they are seen as inactive and passive in an unaltered institutional framework method. Local agents of action, which include local people, local groups, companies and NPOs, should engage actively and positively in community dock.

There is a clear difference in methodology. A conventional unaltered institutional framework method relies heavily on assessment of a community's living conditions measured by economic and social indicator data. On the other hand, community dock strives to trace an economic social change of the community by utilizing not only extensive data on basic local living conditions. but on people's subjective satisfaction and assessment from the vantage point of local people to realize sustainable local development.

Differences can also be found in style of outputs. Community dock categorized as action research does not end by completing academic papers. Rather, community dock makes an emphasis on giving feedback to local agents in workshops, social improvement proposals, and action reports.

In creating a plan of implementation, a difference between community dock and conventional methods is clear. While careful planning is taken as a given, implementation through community dock requires more flexible planning is required by allowing policy for the design and implementation process with collaboration among different stakeholders of the community.

Promoting community revitalization and development from the standpoints of the local agents is more beneficial than through the conventional approach, which only

measures local revitalization by the level of local GDP and therefore establishes policy priorities to increase the GDP. In contrast, community dock finds and formulates policies effective in making local living conditions better through a bottom-up process. Eventually, people become more convinced that enhancement of inter-connectedness and social relationships among local people makes local living conditions better in the long run.

Community dock needs to be promoted by a collaborated team of external experts and the agents in a community. In reality, formulation of a team involving the agents concerned in community development is not an easy task. Also, communication between experts and non-experts is not easy, either. Thus, a collaborated team needs to be built with the strong support and understanding from local people and key local institutions.

We have proposed community dock as an altered institutional policy method. In future research, we will examine the effectiveness of the community dock method through a trial experiment within a local community.

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