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UNRAVELLING PROCESSES OF SOCIAL INNOVATION IN RURAL AREAS: A COMPARATIVE CASE STUDY BASED ON ACTOR-NETWORK PERSPECTIVE

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Abstract

Social innovations are frequently observed in the context of rural development, and they are considered as an opportunity to cope with societal challenges in rural areas. In the literature, social innovations' use to solve societal problems is strongly driven by the will of pursuing a better quality of life, which is usually tangible and practical for rural residents (e.g., the ICT, health care and environmental improvement practices). However, their outcomes are not only the intended tangible change but also characterised by intangible changes of society, e.g. processes and services, which have been discussed by many researchers. In this paper, we study the emergence of social innovations, driven by rural residents' engagements in solving societal problems. In particular, we focus on the questions on how practical problems in rural areas lead to intended tangible changes and beyond; and how social innovation emerges from the processes of rural transformation in practice. To answer these questions, we make use of the actor-network-theory (ANT) to study two empirical cases from Taiwan. From our results, we observe tangible and intangible effects of what we call "positive" and "negative" networks, and we argue that rural social innovation's occurrence is unpredictable due to the contingency of civic engagement processes in rural transformation. Furthermore, organising spaces for learning is critical for social innovation to take place.

Keywords

Collective action, Neo-endogenous development, Rural development, Taiwan

1 Introduction

Aging and depopulation have been considered as severe challenges in many rural areas (OECD, 2016). Such problems are explicit characteristics of marginalisation caused by a large scale of socio-economic and political inequality, which may locally lead to vicious circles of decline (BOCK, 2016). The question of how to support these rural areas to cope with such dilemmas for sustainable rural development remains challenging. In particular, nowadays, rural development concepts are based on "neo-endogenous" development putting networks as a critical factor for revitalizing rural areas (MURDOCH, 2000; LEE ET AL., 2005; LOWE ET AL., 2019). So that its success highly relies on a mixture of the bottom-up initiative, collective action and linkages with external networks (RAY 2006).

In this context, social innovation is understood as "as new solutions (products, services, models, markets, processes, etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources" (THE YOUNG FOUNDATION, 2012:18). Social innovation has been recently introduced as a driver for rural development (NEUMEIER, 2017; NOACK & FEDERWISCH, 2019), due to its potential not only to solve local problems with collective ways but also to induce social change and empower communities (NEUMEIER, 2012; BOCK, 2016). Moreover, social innovation is also considered as an opportunity to fight social inequality and exclusion (MOULAERT ET AL., 2013), which is particularly critical with regard to marginal rural areas. While previous research mainly focused on its immaterial dimension (NEUMEIER, 2012; HOWALDT AND SCHWARZ, 2010), also the material dimension as, e.g., tangible and practical aspects in terms of quality of life should be taken into account. Moreover, empirical studies on the processes of rural social innovation are few (BOCK, 2016; NEUMEIER, 2017; NOACK &

FEDERWISCH, 2019). Therefore, this study focuses on processes of rural transformation and their linkage to social innovation, through empirical cases of rural development from Taiwan to clarify its potential in rural areas.

In Eastern Asia, Taiwan has been influenced by urbanisation since the 1970s. The government of Taiwan started to use pilot projects to empower rural communities and to enable local initiatives embedded in rural development measures since 2003. Particularly, in 2010, the government established a national-level policy called “Rural Regeneration Act” with 150 billion NT (approximately 4.3 billion Euro) to support rural areas for balancing the urban-rural inequality. The policy was based on the concept of neo-endogenous development and one precondition for communities to participate in this programme was a 96 hours’ empowerment training, which expected all willing communities to regenerate their communities beginning from changes of residents’ perception to taking collective action, in order to create sustainable changes for solving societal problems (COA, 2012), which corresponds to the core values of social innovation. However, the outcomes of the policy are not always as promising as expected, so that some of the cases lead to civic movement and even social change with intangible outcomes, e.g., pursuing Satoyama initiative¹ beside tangible ones, while others will not. Therefore, we purposefully selected two cases from Taiwan to contribute with two different perspectives on the processes of transformation in rural areas and its connection with social innovation.

Hence, this study tries to answer the questions on how practical problems in rural areas lead to intended tangible changes and beyond; and how social innovation emerges from the processes of rural transformation in practice. More closely, we look at the interaction process taking into account the active role of humans and nonhumans in bringing tangible and intangible change. For this purpose, we apply the lens of the Actor-Network Theory (ANT) to consider the relations between human and nonhuman actants in two empirical cases of Taiwan. The following sections are structured as follows: As conceptual bases, we introduce the lens of ANT and the analytical framework. Then, the methodology is briefly outlined. In the result section, the two cases are presented in a comparative way. Finally, the conclusion is drawn to discuss the occurrence of social innovation in practice.

2 Theoretical foundation

2.1 Lens of Actor-network theory

The Actor-Network Theory (ANT) was developed by Bruno Latour, Michel Callon, and John Law in the early 1980s (CRAWFORD, 2004). It uses a constructivist approach to describe how the interactions between human and nonhuman actants influence the outcome. By this, it refuses the traditional dualism between human actors and the material world and relates human and nonhuman entities (“actants”) through a heterogeneous network (MURDOCH, 2000; LATOUR, 2005) Thus, the terms “actor” and “actant” are interchangeable and refer to either human or nonhuman entities.

As “networking” is one key driver for both the neo-endogenous rural development and the social innovation concept, we operationalise networking with the help of the ANT. There are three reasons why we consider that the lens of ANT can contribute to this case. Firstly, the translation approach of ANT provides a comprehensive framework to clarify how different actants interact and how networks are constructed in the processes of transformation (WOOD, 1998). Secondly, both the role of human and nonhuman actants can be observed through the construction of actor-networks in the content of rural social innovation. Finally, actor-networks

¹ Satoyama Initiative: is UN initiative origins from Japan, which aims to pursue a future with the harmonious coexistence of humans and nature.

provide a view to understanding the nature of a social innovation in rural development, which helps us to explore it in practice.

Translation is a critical process in ANT, which transforms related actants from the social and natural worlds into networks (CALLON, 1986; LATOUR, 1987; LAW, 2009). It is also understood as all the power loaded interactions, negotiations and displacement of interests, through a series of iterations in which the network of actants is changed (CALLON, 1990). The result of this process is a situation in which certain actants control others (CALLON, 1986).

In this study, we adopt CALLON’s (1986) “*four moments of translation*” as the approach to construct a network among actants. These moments are (1) Problematization: a dynamic process that researchers try to define actants within a common problem. The purpose is to identify the desired goal that a system of alliance looks for and associates with. The obligatory passage point (OPP) is the key at this moment, which forces the actants to converge on a certain topic, purpose, or question. (2) Interessement: a group action that researchers attempt to interpret the connection in order to stabilise the identity of other actants and to lock allies into the network (CALLON, 1986: 203). (3) Enrolment: a process to provide a series of concrete statements and interpretations for the role and coordination among actants after the previous moment of interessement. (4) Mobilization: a process to ensure the spokesmen are representative that the reality of nature and society is the result of negotiation represented by the spokesmen. After the process of translation, all actants connect to each other in a heterogeneous network stabilising at a certain space and a particular time (CALLON, 1986: 213). However, these four moments are not strictly separated and may overlap in practice (WOOD, 1998).

2.2 Analytical framework

This study draws attention to the emergence of social innovation in the process of rural transformation through the lens of ANT. Therefore, we divide the transformation processes in neo-endogenous rural development into four phases: initial status, beginning to change, taking actions and present status. Based on the perspective of ANT, the development path of a certain issue in communities is driven by actor-networks which are built by human and nonhuman actants. Through the trajectory of development from past to present, some cases have outcomes with social innovation, but some cases have not. The framework is conceptualised in Figure 1.

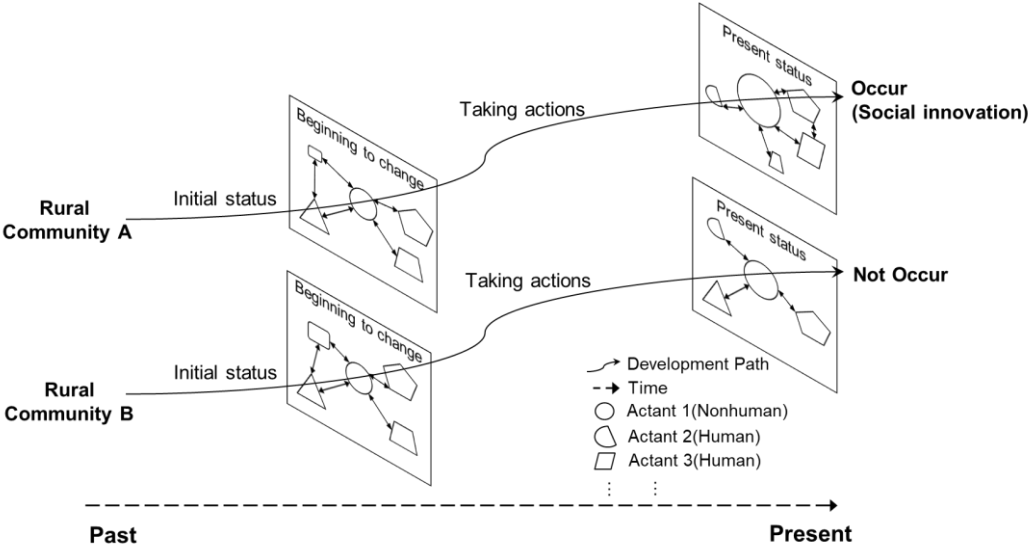


Figure 1: Analytical framework

In addition, the study took the lens of ANT using a “freeze-frame” to look at a system of alliance (Latour, 1987: 138). Moreover, we concentrate on two time phases, namely “beginning to change” and “present status” to construct actor-networks to highlight and dissect the processes of transformation for the selected cases. The analytical framework lays the bases to compare different rural communities who are concerned with communal, environmental problems and have been observed to respond differently to policy incentives. One community ends up with features of social innovation, while the other does not, to study in a comparative manner.

3 Methodology

3.1 Research procedure

The methodology consists of three consecutive steps. Firstly, through a desk review of literature and grey documents of rural communities in Taiwan. The selection of two rural communities, “Gongrong” and “Picheng”, with similar societal problems in a given period under the policy instrument “Rural Regeneration” was realised. In order to target study, the similarities and differentiation of rural transformation processes related to social innovation, the selected cases have different outcome features.

Secondly, the field research was conducted through in-depth interviews with 12 experts in Gongrong and 10 experts in Picheng as the informants. Here the experts are the people who were actively participating in the development of the selected communities. We interviewed a number of stakeholders, in Gongrong case, there were five informants from the Local action group (LAG), five informants from the neighbour group Ankang and two informants from the national government (UNU-IAS & IGES, 2018). In Picheng case, there were four informants from LAG, two informants from consultants, two informants from the national government, one informant from the local government and one informant from the farmers’ association (PCDA, 2012). The purpose of this step is to clarify and map the development path from different stakeholders’ perspectives. Thirdly, the outcomes of the in-depth interviews were combined with outcomes of the desk review for constructing actor-networks. The two cases were constituted based on qualitative content analysis, and crossed-cutting differences and similarities were identified (BARTLETT & VAVRUS, 2017).

3.2 Background of two selected cases

Gongrong community is a scattered settlement located on the edge of the densely populated city Greater Taipei (seven million people) in Northern Taiwan. The community has 236 settled people in an area of 210 hectares in the shallow mountain along the right-hand side of Balian creek next to the Yangmingshan National Park (SCCA, 2011). The community was developed since 1720, mainly relying on agriculture. The ancestors farmed the lands along the contour of the shallow mountains, which created a special terraces landscape. Urbanisation started in the 1950s (HUANG, 2013). Its influence on rural depopulation is reflected in a progressive lack of labour force and affected agriculture extensively. It was also in the 1950s when conventional farming was popularised in Taiwan (HUANG, 2013).

At the beginning of the 2000s, the community had serious environmental problems due to a long-lasting overuse of herbicides, both hillside, and in the Balian creek, which caused not only the disappearances of local species but also landslide and debris flows caused huge losses in terms of the lives and property (SCCA, 2011). The community started to change with a bottom-up initiative since a retired teacher returned to his hometown in 2003, and adopted the policy instrument “Rural Regeneration” to bring about change. More concretely, he proposed education events to the community for taking actions, as well as for collaboration with the neighbour community Ankang to protect the environment of the Balian creek (UNU-IAS & IGES, 2018). In 2016, the community applied the “Satoyama Initiative” moving towards a

future with harmonious coexistence of humans and nature by taking “Balian Creek Satoyama initiative” as their vision (UNU-IAS & IGES, 2018).

Picheng community is located in the Jianan Plain, southwest Taiwan, which is among the biggest rural areas with important agricultural production. Thus, the residents of Picheng mainly rely on agriculture. The community has roughly 400 settled people in the area of 418 hectares. Similar to Gongrong, the long-term rural depopulation since the 1950s caused a shortage of labour, and conventional farming has been driving the cultivation and agriculture for a long time.

Picheng was named literally by its feature” farm ponds” in the Chinese language, which characterised its former favourable conditions for agricultural production, due to 16 farm ponds in the community. However, before 2006, due to lack of awareness in terms of environmental protection. Those farm ponds became the places where household wastes and rubbishes were dumped. Also, public and idle spaces became dilapidated places where rubbish and waste were gathered. As a result, the community was flooded during the rainy season now and then due to rubbish jammed and damaged the drainage system (PCDA, 2011). In 2006, a retired piano tuner as the initiator began to search for ways to change the local environment. He convinced some residents to join his movements and started to train volunteers for environmental protection. He initiated a series of actions to improve the environment from 2007 to 2016, including 16 projects for farm ponds’ and dilapidated spaces’ cleaning. However, nowadays, the community has stopped to propose any further projects and movements.

4 Results

In this section, the content is structured in a comparative way through the four time-phases initial status, beginning to change, taking actions, and present status. The actor-networks are constructed as they emerge in the time phases “beginning to change” and “present status.

4.1 Initial status

The environmental statuses in the studied communities were not just caused by a single event in a specific moment, but by several actants acting for a long-term period of time in a network, assuming that the environments used irresponsibly in order to achieve one’s interests. As a result, the respective environments have been overused or polluted.

In Gongrong case, the environment had experienced severe deterioration before 2003, caused by local politicians, farmers and the subsidy of fallow. The environment here as a passive nonhuman actant includes farmlands, water resources, hillside, and biodiversity in the community and accepted the results of interaction from other actants, which is “severe environmental deterioration”. Looking at what causes such deterioration, the obligatory passage point (OPP) is that actants believe that benefits from overusing resources are more important than its effects (OPP1 of Gongrong). Therefore, a network has been shaped with negative environmental effects. Here we call it as “negative” network to illustrate the relation with the environment (see network of OPP1 in figure 2).

We start with a look at what interests in the Gongrong case link those actants together and how they enroll in actions. Firstly, local politicians in the township council had the power to force the local government for local development. However, the limitation of resources forced them to develop more places in order to get political benefits. Therefore, they took actions such as “Balian creek diversion for the industry” and “Hillside development”. The leader from the LAG of Gongrong mentioned the situation at that time:

“The government (the township councilman) developed the watershed of the region by establishing the landfill in the valley... even allowed the Lungyen Life Service Corporation expanded on the hillside. Therefore, a lot of soils and rocks which were created by hillside

development followed the waterways to the creek. Such serious problems destroyed the natural system of Gongrong completely.” (The leader from the LAG of Gongrong)

Secondly, the subsidy of fallow, which was established on the national level in order to deal with the problems of abandoned farmlands in the 1980s, encouraged farmers to turn abandoned farmlands to arable farmlands, so they enrolled in the network by continuously approving the subsidy. However, in order to get subsidies, farmers had to rely on herbicides due to the shortage of labour for dealing with a large number of abandoned farmlands. As a result, the environment was damaged at that time. A member from the LAG of Gongrong described:

“The environment at that time, people used a lot of herbicide. It was all bare farmlands. For instance, one hectare of farmland, they also used massive herbicide to the whole farmlands. You could see whole bare farmlands and no single grass could survive. In the end, it seems that soils could not cultivate any crops.” (A member from the LAG of Gongrong)

The network of overusing natural resources in Gongrong was shaped. The consequences were not only the disappearance of local biodiversity, erosion of the soils but also a pessimistic view on future agricultural cultivation.

Similar environmental problems also happened in Picheng in the early 2000s. The most remarkable issues are highly polluted farm ponds and dilapidated spaces due to the residents dealt with wastes and rubbishes by dumping into farm ponds and some unused spaces. It had been continuing for a long time since conventional farming having been popularized in the 1970s (Huang, 2013). There were no needs for organic compost fertilizer for agriculture anymore when chemical fertilizer being extended into households. Therefore, the residents started to dump decomposable wastes into farm ponds and unused spaces without environmental awareness. Moreover, the farmers considered their farmlands can be cultivated by conventional farming in order to maintain their production and to get stable incomes. The Obligatory passage point is that actants believed that benefits from polluting the environment were more important than negative effects (OPP1 of Picheng). Hence, a network emerged just like in the Gongrong case making the environment filthy progressively, which shaped a stable network with negative environmental development (see the network of OPP1 in figure 3).

4.2 Beginning to change

Gongrong began to change since 2003, when a retired teacher, as a key person, became aware of the environmental deterioration and stipulated that education is the key to change. He perceived the unawareness of residents:

“When I came back, I saw such environmental deterioration...; however, long-term residents even had no feelings like the boiling frogs without awareness.” (The leader of Gongrong LAG)

He expressed the situation to his friends and formed the initial group aiming for restoring the environment like in their childhood, which resulted in a positive network for change. At the same time, officials from SWCB² looked for cases to promote empowerment training (the pilot project of Rural Regeneration). The initial group considered that training is the key to their actions. Therefore, they collaborated with officials of SWCB to restore the environment through education. However, in the beginning, they had difficulties in convincing local farmers (see step 1. in figure 2) who overused herbicide to join the action, due to mistrust of local farmers believing that the initial group was active for political purposes (see step 2. in figure 2).

Until February 2004, the situation had been changed due to a political intervention of Balian creek interception of water resources that occurred by the local government. The initiator realized that the interception would destroy the local water resources system for farming, which was the root of living in Gongrong. Therefore, he disseminated the information in the community and led residents to protest against the local authority for overtaking resources (see

² Soil and Water Conservation Bureau (SWCB): the authority for implementation of Rural Regeneration Policy.

step 3. in figure 2). In the end, the protesters successfully expelled such political influences. After the event, local farmers started to become aware of the environment and to trust the initial group (see step 4. in figure 2). Some farmers started trying to participate in the training and looked for better ways to farm (see step 5. in figure 2). The new obligatory passage point (OPP 2) was shaped by actants who believed that the environment should be restored through education, which created a network with “positive” environmental effects. Here both positive and negative networks existed in parallel and interacted upon the environment of Gongrong.

From 2005 to 2010, the community took courses in the empowerment training. Conceptually, the training used a participatory approach, which involved local voices and needs to dig local potentials and to train local capacity for future development (SWCB, 2011). However, the participation of the training course was not very good in the beginning, as, e.g. 20 people were registered for the training in 2005, but only six people completed it eventually. Later, the initial group took another approach to mobilise locals by their interests, and they asked participants in what training courses they would be interested, instead of using sophisticated course contents and telling participants what to do to decrease pesticides, herbicides and chemical fertilizers. The new courses provided knowledge about how to cultivate a better quality of crops or fruits with an alternative eco-friendly way.

Furthermore, the initiator also expressed the importance of protecting the Balian creek to their neighbour group Ankang (see step 6. in figure 2). People from Ankang and residents from Gongrong joined the actions, some of them aiming for protecting the environment, and others looking for friendship. Therefore, the participation increased after the adjustment of the courses and due to improved communication (see step 7. & 8. in figure 2). In 2008, the enlarged group composed of the initial one and farmers, residents, and Ankang people, established the Balian Rural Regeneration Advancement Association (BRRAA) as LAG. In addition, the initiator became the leader of the LAG, with 25 people as the core cadre (see step 9. in figure 2).

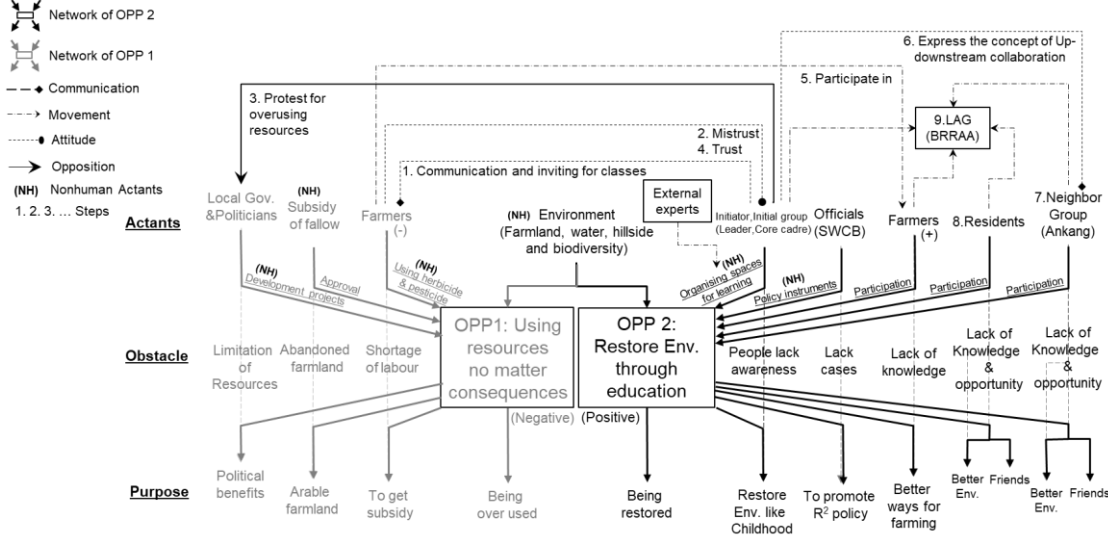


Figure 2: The positive and negative networks in Gongrong (Beginning to change)

In Picheng, the change began similarly due to one individual initiator, namely a retired piano tuner who believed that the environments could be improved. He realized that he needs supports from other residents to establish an organisation to connect public resources and local problems. He convinced some residents to join his actions for improving the environments (see steps 1. & 2. in figure 3). They established Picheng community development association (PCDA) as the LAG in 2007 (see step 3. in figure 3), and the initiator became the leader afterward. However, similarly, some residents decided to withdraw from the activities due to political reasons (see step 4. in figure 3). At this time, the officials from SWCB were looking for cases in order to promote the pilot project of Rural development. They collaborated with and supported the LAG

by policy instruments (see step 5. in figure 3). They also introduced consultants to assist the community's development (see step 6. in figure 3). The consultants were enrolled in the network due to the duty of rural regeneration projects. Moreover, the LAG also applied the other environmental projects from the local government (see step 7. in figure 3).

The OPP here is actants' belief that using government projects can improve the environment (OPP2 of Picheng). A positive network that pursues restoring the environment was shaped by the leader and residents from the LAG, SWCB's officials, the local environmental projects, and also linked to the environment, specifically farm ponds and idle spaces. At the same time, both "negative" and "positive" networks existed and interacted in the environments.

However, a part of residents took a step back and lost their trust in the leader due to some rumours suspecting him to aim for money and personal benefits (see steps 8. & 9. in figure 3). Such voices were not only revealing mistrust in the community but also isolated the leader and the LAG. From 2007 to 2010, Picheng community members participated in volunteer training, recycling, environment cleaning and farm ponds pollution control, and by 2011, 64 people had completed the empowerment training. Consequently, a part of the residents started to be aware and residents who were dumping wastes decreased. Otherwise, around 2008, "Small Landlords and Big Tenants (SLBT)" policy was established to encourage elderly farmers or farmers unwilling to cultivate to rent out their farmland to professional tenants (COA, 2015). In addition, a subsidy policy for field corn was introduced to encourage big tenants to cultivate field corn by conventional ways on a large scale. The negative network was enhanced by the new actant, the policy SLBT and field corn subsidy (PCDA, 2011).

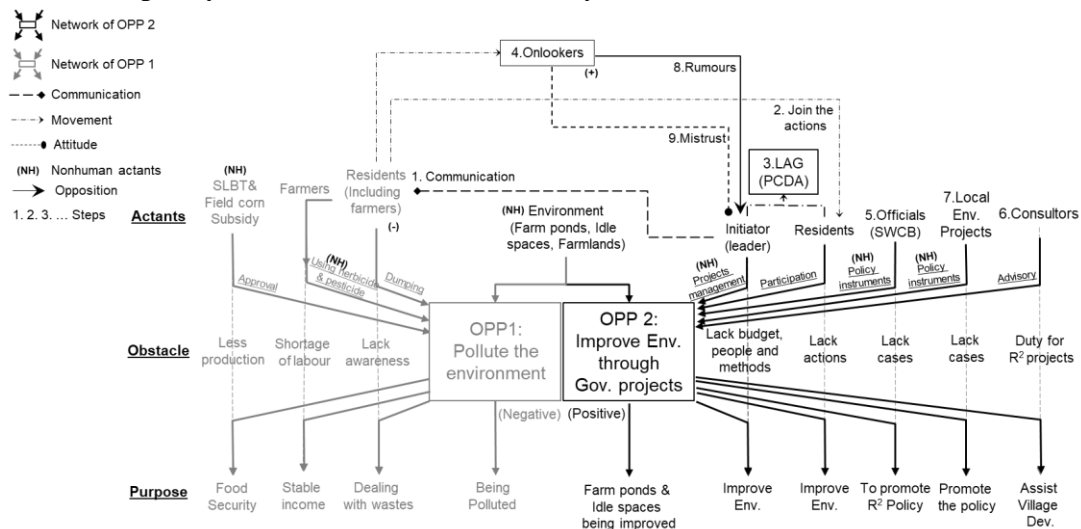


Figure 3: The positive and negative networks in Picheng (Beginning to change)

4.3 Taking actions

In Gongrong case, they started the change with a few people taking training courses of rural regeneration since 2005. Until 2009, more than 118 people were participating in the training and actions. Among these people, the habit for regular Friday meetings to learn and exchange developed since 2011. The activities also raised the interests of other residents and people from Ankang, who looked for a better environment or friendship. One interviewee said:

"In the past, only the important event such as elections that people get together... But since the training began, activities, courses created more opportunities for meeting each other. Now sometimes we meet each other three times per week. Everybody feels so close and know each other just like brothers and sisters." (A member of Ankang)

The term "friendship" has been mentioned several times during the interviews. Both the courses and the meetings provided space for farmers and residents to discuss local issues and future

development, which encouraged more residents to join actions. The positive network was stabilised by new actors joining. During this period, they undertook a series of actions (1) to restore the environment, including self-organised patrol for Balian creek to protect waterways, (2) to construct wetlands to deal with wastewater and use it for educational purpose, (3) to operate a farmers market in 2012 to support eco-friendly production, (4) to restore abandoned farmland so that cultivated land went up from 21 ha in 2011 to 52 ha in 2018, (5) to increase eco-friendly farming from 1.3 ha in 2011 to 32 ha in 2018 and (6) to bring back once-vanishing biodiversity by more species, such as crabs, fishes, and frogs, etc. (UNU-IAS & IGES, 2018)

Also, Picheng residents have implemented projects of rural regeneration during the time from 2011 to 2016 with altogether 16 projects to improve the environment, including two main farm ponds cleaning and reconstruction and seven filthy spaces cleaning and reformation for public leisure purpose. The environment of Picheng has been changed and improved dramatically. However, although there were 64 people completing the training, the projects mainly relied on the leader to be implemented. In addition, the community has tried to change the agriculture and local industry by using some projects. However, each of the projects could not be sustained. Agriculture in Picheng is still driven by conventional farming until now. A consultant pointed out that lack of core cadre to share responsibilities and create ideas as a fundamental issue and the low level of continuity in their commitments influenced the change process, especially for the subsequent maintenance of the improved environments. One of consultants said:

“Picheng in these few years almost no people from middle age participated in the process of its development. The whole subsequent executive power is getting weak.” (One of Consultants)

4.4 Present status

In 2016, a turning point slightly changed the path of development in Gongrong community as officials from SWCB introduced a documentary of the Satoyama initiative to the leader. He shared the concept with other members of the LAG and they used an event as “Satoyama Festival” to express the concept to others. Through the processes of preparation and participation, they got familiar with the core concept and developed a common vision so that meanwhile, the festival has become the most important annual event in the community. They decided to adjust their approach by pursuing Satoyama initiative for “a society in harmony with nature” to achieve the purpose of revitalising the community. The OPP has transformed from restoring the environment to pursuing Satoyama Initiative (Figure 4). In other words, the purpose is not only a purely environmental concern but also the consideration of socio-ecological production landscapes and rational use of resources to revitalize the community.

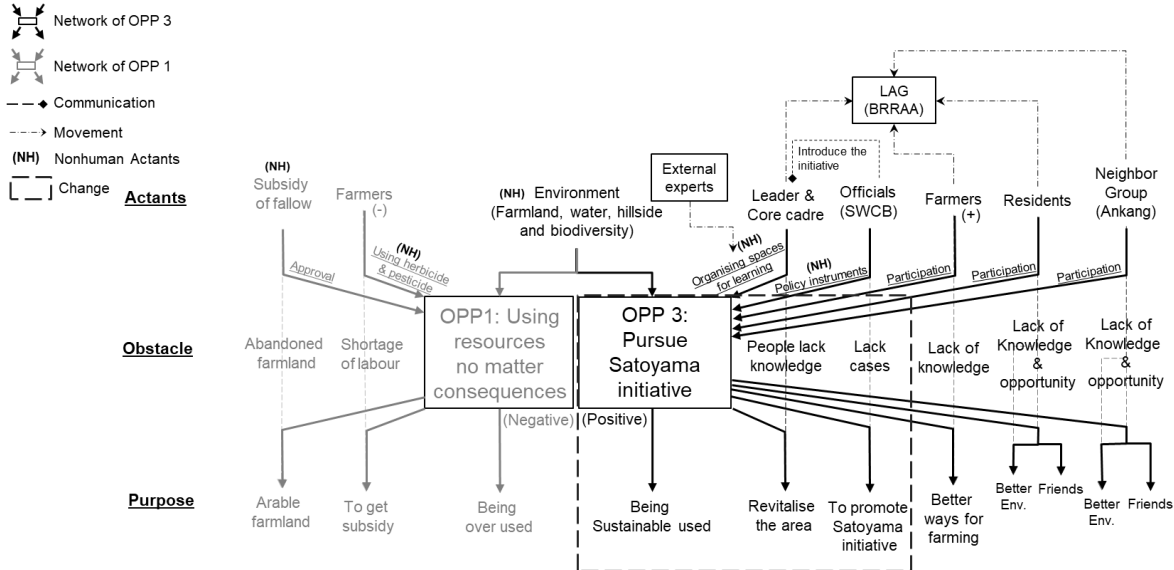


Figure 4: The positive and negative networks in Gongrong (Present status)

In Picheng case, the lack of core cadre reflected on subsequent maintenance of the improved environments and also the future. The leader argued the dilemma of the age in Picheng:

“The residents are already 80 to 90 years old...what they are looking for? They only need a stable life; they do not have time to change. My mother is already 90 years old, she told me ‘every day when I open my eyes, it is glad to see the sunshine’. what do you expect for her to do?” (The leader from the LAG of Picheng)

The community stopped to propose any projects to governments waiting for the change of the people. They believe that maintaining the environment is the only thing they can do for now. Moreover, the consultants left due to the end of the projects. Still, the environments were successfully improved and a few residents still followed the leader looking for a better future; even the officials from SWCB kept encouraging LAG to take action. However, the residents in LAG were few at the end. The new OPP3 is shaped like figure 5 shown.

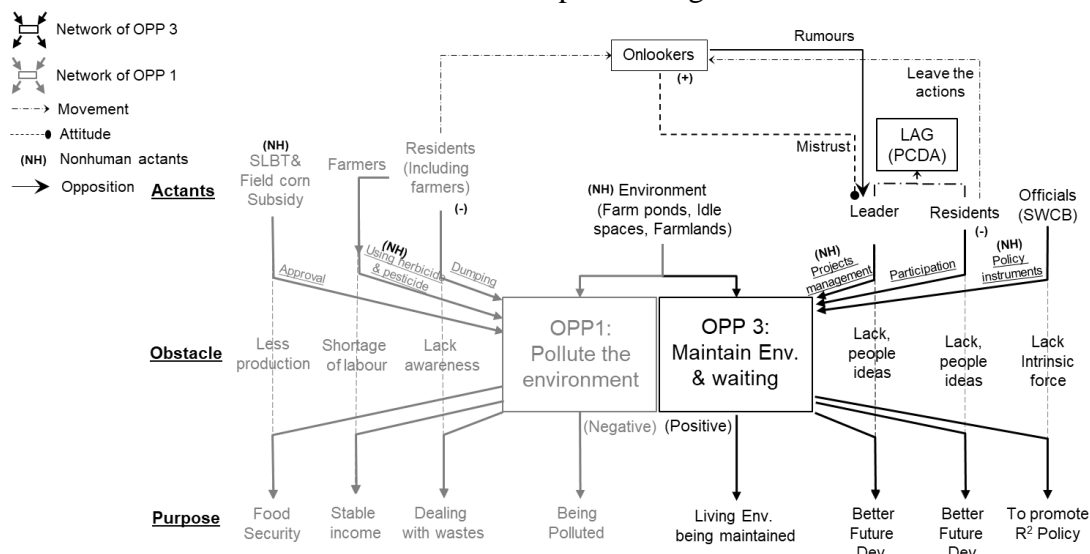


Figure 5: The positive and negative networks in Picheng (Present status)

5 Conclusion

ANT, as a material-semiotic method, gives attention to how relations assemble, instead of why something happens and provides a different view to other social theories (Law, 2009). The approach allowed us to understand the emergence of social innovation in rural transformation. Our study illustrated the process of transformation in two rural communities through different time phases. In the Gongrong case, we observed tangible, environmental improvements and residents’ change of perception about environmental restoration, even to Satoyama initiative. In Gongrong, both tangible and intangible outcomes were observed, which corresponds to successful social innovation and ultimately to the expectation of social innovation” enhance society’s capacity to act” (THE YOUNG FOUNDATION, 2012; BOCK, 2016). In the other case of Picheng community, although collective action took place for a while, its outcomes only revealed tangible environmental improvements but without social innovation dimension.

From the results, we have observed that both human and nonhuman actants are critical for transformation in both cases. For nonhuman actants, the situation of environments drove and motivated different actants to take actions and search for change. The policy instruments of SWCB provided guidelines for development and external resources such as funds, knowledge, and experts, which were essential for boosting social innovation. In particular, spaces for regular meetings, discussion and learning were organised in the Gongrong case only. Such spaces provide an opportunity for interaction, knowledge exchange from external experts, and learning (Willett & Lang, 2018). These nonhuman actants were also the key differentiation between Gongrong and Picheng. For the human actants, the initiator is critical as a beginning

of a new network and the leader strongly influences the direction of development and internal cohesion and external connection in communities as a whole (Wellbrock & Knierim, 2014). In addition, the results showed the crucial role of the core cadre in disseminating new initiatives. and how building trust was a challenging and time taking process for initiators and leaders.

Looking closely to how changes begin in the time phase “beginning to change”. Despite we can understand how the networks of positive and negative environmental effects are assembled. However, we cannot predict whether social innovation occurred or not in the consequent time phases, mainly because social innovation emerges by a series of civic engagements. Social innovation can only be identified until the shift of collective goal for better solutions (e.g., the OPP of Gongrong shifted from restoring the environment to pursuing Satoyama initiative) and tangible practical outcomes (e.g., the expansion of eco-friendly farmlands) are both realised; otherwise, the existence of social innovation remains blurry. This observation implies that the unpredictability of civic engagements can also lead to outcomes without social innovation, i.e., the case of Picheng. Furthermore, if we look at the intentions of actants, both cases showed similarity in the intention to solve problems of society (environmental deterioration) and to attain their goals (improve the environments). In Gongrong case, we saw that the majority of human actants were farmers and residents whose purposes in the positive network seemed irrelevant in terms of social innovation, such as a better way for farming or friendship. Even the leader or officials of SWCB did not realise they were doing social innovation but knew the importance of education, learning, and empowerment, as critical collective actions for civic engagements. In other words, this implied the intentions for pursuing intangible changes. Nevertheless, to field actors, social innovation seemed more of a supplementary outcome that results from the interaction and collective actions of various actants working to solve societal problems. Therefore, the emergence of social innovation might be unintentional (Noack & Federwisch, 2019), which correspondingly explain the unpredictability of civic engagement. Based on the findings, we argue that rural social innovation, its occurrence exists unpredictability, therefore pose a question for further studies in terms of social innovation in rural development that “If we can only catch social innovation when its outcomes realised, whether it can be facilitated in practice and how?”

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