

Measuring Empowerment in the Community Development Projects of Official Development Assistance

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Community Development projects have increased in the official development assistance (ODA) to achieve social development including empowerment in the target communities. In the community development projects, a major component is to develop/construct community infrastructure. There are voluminous researches and proposals for the indicators to measure the empowerment in the projects from researchers and donors. How to measure the empowerment by the infrastructure, especially focusing on its development/construction process, is still trial and error stage. This paper finds what indicators are used in community development projects with infrastructure components. This paper also discusses what indicators are appropriate and practical to find the relationship between empowerment emergency and infrastructure development/construction process referring to the past ODA projects.

Key Words: *community development, infrastructure, measuring empowerment, indicators, official development assistance*

1. INTRODUCTION

The number of community development projects are rapidly increasing as a key scheme of the donors. With participation as a critically important approach, the community development projects seek both of economic aspect of development and social aspect of development in the target communities. The donors funding to the community development projects are pursuing income generation, living standard/quality of life improving and expansion of well-being. Poverty alleviation of the community is set as the final target. Policy and institution improvement and capacity development for both government and community people are also included.

Economic development and social development are interrelated and are not necessary defined separately and clearly. Since after World War II, economic development had been a mainstream of the official development assistance (ODA). From 1990 ties, social development has been shed light on and become another mainstream of the ODA especially after the Social Development Summit in 1995 (United Nations 1995). World Bank published New Path to Social

Development in 2000 (Edstrom et al. 2000) for the special session stating the importance of social capital, which is a component of social development. From the concept that social development was a base to promote economic development, social development has been sifted its position equivalent to economic development position.

Those economic and social development aspects have a common and indispensable concept which is related to empowerment of the stakeholders who are not only community people but also NGO staff and local government staff. The biggest donor for the community development is World Bank using the scheme of community driven development (CDD). In CDD scheme, empowerment is one of the principles (World Bank 2015a). JICA also includes empowerment as one of project objectives of the community development projects explicitly or implicitly depending on the projects.

Currently over 400 CDD projects in 94 countries have been supported by World Bank with fund of almost 30 billion US\$ (Wong 2012). JICA also has invested the remarkable amount of fund for facilitating

community development. The names of the JICA projects are a rural development project, a community empowerment project, a rural infrastructure development project, a livelihood improvement project, a capacity development project and a social sector development project in addition to the name of community development project. Since 1990ties, JICA's investment has reached to at least 3 billion US\$ (JICA Knowledge site 2015)

Even though huge fund is used for the community development projects in which empowerment is a main target, the evaluations of the projects are still on the way in terms of the number of the projects and evaluation methods. The donors at present make strong effort to evaluate the projects in terms of relations between input/intervention including implementation methods and effect/impact. The most evaluations are conducted using the DAC evaluation five items: relevance, efficiency, effectiveness, impact and sustainability. Rigorous impact evaluation also recently started to avoid selection bias by World Bank.

Issues, however, still remain in the evaluations. They are:

- 1)Whether targeted beneficiaries are factually empowered or disempowered,
- 2)What factors of the intervention cause empowerment or disempowerment,
- 3)How the empowerment emerges by the factors, and
- 4)What context leads to bringing about empowerment.

There is another issue. To date, most of the conducted evaluations deal with a project as a whole. The effect/impact of sub projects is not clearly separated.

The community development projects are composed of multi sectoral sub projects. Infrastructure portion is distinguished in terms of the projects and percentage of used fund. Among 94 World Bank projects, fully categorized CDD and completed or ongoing since June 1982 to February 2015 in the World Bank database, 48 projects include infrastructure sub projects (World Bank www 2015b). For instance, KALAHI-CIDSS, one of World Bank funded community development project in Philippines, 90 percent fund was disbursed for community infrastructure at the end of 2003: 47% on water supply projects; 24% on road projects; 7% on school classrooms; 5% on multi-purpose buildings; 4% on day care centers; 3% on health centers (World Bank 2011, 2013a, World Bank www 2013b). JICA projects also spent huge fund for infrastructure (JICA knowledge site 2015). For instance, in Guatemala, Social Investment Fund Project for small scale local economic and social infrastructure development disbursed almost 99% fund to water and sewage, school and health center construction as social infrastructure and access road, bridges, irrigation and agricultural product storage

silo as economic infrastructure (JICA 2013). In this project, community people initiated sub project formulation approach was taken.

Furthermore, how to measure empowerment gives rise to a vigorous argument among sectors and researchers. In education, health/medical sector, gender related sector and business sector, there is a voluminous research in both developing countries and other developed countries. In infrastructure sector, however, less research is found, especially in terms of infrastructure development/construction process and empowerment. There is a research by Wassenich et al. (2004) addressing infrastructure effects/impact in community development projects. Their research focused on the effect/impact of quality, accessibility improvement, service delivery improvement, utilization and cost and benefit of the constructed infrastructure facilities. Because infrastructure development/construction projects require huge amount of fund and affect societies in all ways, this issue cannot be overlooked.

From this background, this paper discusses what indicators should be developed and used to measure empowerment emergency specifically focusing on community infrastructure. This paper is structured by the following sections. The next section explains the scope of this paper and definition of empowerment and other necessary concepts. Section 3 reviews previous research on empowerment measuring and indicators. In Section 4, cases of community development projects are reviewed to find empowerment effect/impact and the factually used indicators. Section 3 and section 4 are based on the literature review and interviews to experts assigned to the projects. Section 5, in addition to referring to the Section 2 and 3 and taking into infrastructure characteristics, tries to propose appropriate indicators for empowerment by the infrastructure development/construction in the community development projects. Finally, Section 6 concludes and presents future work.

2. SCOPE AND DEFINITION

(1)Scope of this paper

This section makes this paper coverage clear. First, this paper addresses empowerment as a social development effect/impact. Second, the subject projects are community development projects in the developing countries and community infrastructure. Third, infrastructure has two aspects for emerging development effect/impact. One is process effect/impact from planning to completion and the other is constructed facility effects/impact. This paper selects process ones. Forth, this paper focuses on social, political and

psychological empowerment rather economic empowerment. In addition, individual level of empowerment is discussed and state /household level of empowerment is not addressed.

(2) Empowerment in general

It is necessary to clarify the empowerment definition used in this paper. Depending on the donors and researchers, the empowerment definition varies. The definition also is influenced by the sectors: business, education, medical/health, and gender and business development also in ODA. Ibrahim et al. (2007) listed 32 definitions quoting the definitions of other researchers and donors. Additionally, Zimmerman raised the risk to generalize the concept of empowerment (Zimmerman 1984).

World Bank, the biggest donor agency, has two definitions. One definition is that empowerment is the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control and hold accountable institutions that affect their lives (Narayan 2002). The other definition is proposed by Alsop et al. (2005) focusing on choice: Empowerment is defined as a group's or individual's capacity to make effective choices, that is, to make choices and then to transform those choices into desired actions and outcomes. Regardless the definitions, in 1980 ties, the World Bank started to incorporate empowerment concept into its functional role as a key factor to address poverty reduction.

In 1990ties, other donors also came to have an assistance scheme with empowerment components. JICA, the world bilateral biggest donor, defined the empowerment as "individual raises awareness and obtain independent decision-making capabilities and economic, social, legal, and political power and exercised those capabilities. Being able to make decisions by oneself helps erase social inequalities" (JICA 2007).

Referring to the definition of World Bank and JICA, in this paper, the terms of empowerment is used meaning that target stakeholders develop the capacity to aware, make choice affecting their desired social change and exert the capacity to take actions for the change.

(3) Empowerment Category

Empowerment is categorized into several dimensions, domains and levels which have variety of concept and definitions depending on the researchers (Nishimiya and Hanaoka 2014). Oakley et al. (2000, 2001) classified empowerment dimensions as psychological, social, organizational, cultural, economic

and political one with their components exemplification. GSDR (2015) classified empowerment as economic and social empowerment. Spreitzer (1997, 2007) also raised psychological empowerment components. Table 1 shows the definition and concept of each category of empowerment.

This paper deals with empowerment from social, political, organizational and psychological viewpoint using the concept or the definition of Oakley, GSDRC and Spreitzer because other researchers do not clearly define or make the concept.

Table 1 Empowerment Category

Empowerment Category	Researcher/organization	Definition or concept
Economic	Oakley (2000,2001)	Attaining income security, ownership of productive assets, Entrepreneurial skills
	GSDRC (2015)	To allow poor people to think beyond immediate daily survival and to exercise greater control over both their resources and life choices. For example, it enables households to make their own decisions around making investments in health and education, and taking risks in order to increase their income
Social	Oakley (2000,2001)	Leadership in community action, action for rights, social inclusion, literacy
	GSDRC (2015)	The process of developing a sense of autonomy and self-confidence, and acting individually and collectively to change social relations and the institutions and discourses that excluded poor people and keep them in poverty.
Political	Oakley (2000,2001)	Participation in local institutions, negotiating political power, accessing political power
Organizational	Oakley (2000,2001)	Collective identity, establishing representative organization, organization leadership
Cultural	Oakley (2000,2001)	Redefine gender rules and norms, recreating cultural practices,
Psychological	Oakley (2000,2001)	Self-image, identity, creating space, acquiring knowledge
	Spreitzer (1997, 2007)	Meaning, Competence, Self-determination and impact indicating the their interrelation and synergy effects

(4) Social capital

Social capital is defined by numerous researches and donors. This paper, as a widely acknowledged definition, adopts the World Bank's definition (World Bank 2011b): "Social capital is referred to norms and networks that enable collective action. It encompasses institutions, relationships, and customs that shape the quality and quantity of a society's social interactions". World Bank also shows the five key dimensions to apply social capital to practical and operational level: Group and network, trust and solidarity, Collective action/cooperation, social cohesion /inclusion and information/communication. World Bank regarded building social capital as a base of empowerment emergency as well as remove social barrier and making state institutions more responsive to poor people (Grootaert 2003a, 2003b).

Nishimiya and Hanaoka (2014) introduced a new interpretation of empowerment. Their idea regarded social capital improve and expansion as a components of the empowerment emergency. They also raised the static aspect of social capital. Accordingly change of

social capital can be used for the empowerment measuring indicators.

(5) Community infrastructure

In this paper, community infrastructure is defined as follows:

- 1) It is comparatively small scale infrastructure in terms of construction cost, term and size,
- 2) It is comparatively not difficult to construct from engineering view point, and
- 3) It directly affects community people's daily life, safeness and security and increase people's well beings.

In development assistance projects, the community infrastructure covers:

- 1) Feeder roads, agricultural roads, school roads (not trunk roads) and small bridges/culverts,
- 2) Water supply facilities (tanks, tube wells, channels and distribution pipes),
- 3) Irrigation facilities (channels, intakes and dams)
- 4) Sanitary facilities (toilets, sewage treatment facilities) and health facilities (clinic buildings),
- 5) Energy facilities (solar power facilities, mini hydro power stations),
- 6) Education facilities (School/nursery buildings),
- 7) Community centers, and
- 8) Disaster prevention facilities (dikes, drainages)

3. MEASURING EMPOWERMENT OVERVIEW

There are voluminous and previous researches on measuring empowerment and indicators by the researchers and the donors. Issues and criteria also are raised and proposed by the researchers.

(1) The indicator selection issues

First, Narayan (2005) raised methodological issues in selecting indicators of empowerment. Those issues are whether to measure: intrinsic (people's value) or instrumental (people's power regardless people have value the power) aspects, specific or universal aspects, individual or collective aspects, whether to include psychological determinant, whether to collect qualitative or quantitative data, and how to clarify causality between input and effect/impact.

Second, Ibrahim et al. (2007) added two issues to the Narayan's raised issues. One is dynamics aspect stressing the necessity of collecting panel data. The other is measurers: by whom, Self or others.

Third, Oakley et al. (2000) also presented three key issues: Indicators are identified and operationalized for long-term impact and immediate outcome, how many of indicators are appropriate, and how to develop indicators to satisfy stakeholders.

In addition to the selection issues, it is noteworthy to refer to SMART property of indicators for the selection (Roche 1999). Roche stressed the indicator selection should pay attention 6 points: Specific, Measurable/unambiguous, Attainable/sensitive, Relevant/easy to collect and time bound (when a certain change is expected).

(2) Indicators proposed by previous researches

The proposed indicators are diversified by contexts, sectors and researchers. Depending on the researchers and the donors, the proposed indicators are developed in several domains, levels, dimensions and sectors. Although domain, level and dimension are differently used by the researchers, several common indicators are found: for instance, voice and participation related ones. The difficulty of development of the indicators also exists due to the unobservable empowerment nature. Proxy indicators have to be developed and have to provoke the augment of measuring indicator's appropriateness and validation.

Among the previous researches of the indicators, distinguished research is conducted by Alsop et al. (2005). They, by reviewing the researches of Bennet (2003), Kabeer (1999) and Krishna (2003), integrated and organized the framework of empowerment measuring. Regardless of sectors, levels, domains and dimensions, they identified two common factors: agency and opportunity structure. They defined agency as an actor's ability to make meaningful choices, that is, the actor can envisage options and make choice. This concept may be interpreted as capacity to choose. On the other hand, they defined opportunity structures as the formal and informal context within which actors operate. Opportunity structure may be interpreted a kind of social system and /or social environment surrounding the actors. In this concept, opportunity structure has common feature with social capital especially informal structure.

Alsop et al. (2005) proposed the indicators of empowerment using change of agency and opportunity structure as intermediate indicators which are contributory factors to degree of empowerment. Then, Alsop et al. interpreted degree of empowerment, the final measurement item, from three viewpoints: presence of choice, use of choice and effectiveness of choice. Then empowerment measurement indicators for agency, opportunity structure and degree of empowerment are presented through applying their measuring framework to the empowerment related projects in Mexico, Honduras, Nepal and Ethiopia. Their indicators are presented by domain (State, Market and Society) and level (Macro, Intermediate

and Local). Partly they presented indicators using the already developed indicators in social capital measurement and living standard measurement: Integrated Questionnaire for Measuring Social Capital (IQMSC, Grootaert et al. 2004), the Social Capital Assessment Tool (SCAT) (Krishna and Shrader 1999) and the Living Standards Measurement Survey (LSMS). (World Bank 2015c)

Other researchers also proposed numerous indicators by the sector, the dimension and level. World Bank introduced indicators proposed by several researchers and other donors in the sector of gender, governance and in peace and conflict situation (Narayan 2005). In addition, Oakley et al. (2000) introduced the indicators to measure internal and external empowerment and indicators of group empowerment. In the gender sector, the greatest number of indicators is proposed. These proposed indicators, however, do not specifically address the relations between infrastructure development/construction and empowerment nor addressed the process of infrastructure development/construction and empowerment emergency.

(3) Composite indicators

Composite indicators also are proposed by UNDP, USAID, JICA and some researchers. UNDP developed the Gender Empowerment Measures, integrated difference between man and woman regarding three gaps: Political participation, Economic participation and power over economic resources (UNDP 2004). USAID, the International Food Policy Research Institute, and the Oxford Poverty and Human Development Initiative developed Women's Empowerment in Agriculture Index (WEAI) integrating five areas: production, resources, income, leadership and time use (Malapit, J.H. et al. 2014). JICA also proposes the Group Empowerment Indicators (GEI) as a project progress monitoring tool for stakeholders (Nzioka et al. 2012, Aikawa 2013). GEI is calculated combining of leadership, cooperative actions of the members and gender issues. Bennet et al. (2005) also developed Empowerment Index (EMI) and Social Inclusion Index (SII)

4. CASES OF COMMUNITY DEVELOPMENT PROJECTS

This section, selecting cases of the community development projects including infrastructure component as sub projects, reviews factual situation of the projects. Those projects are selected from the projects funded by the World Bank and JICA. Table 2 shows the project outlines with contexts, input and ef-

fect/impact related to empowerment.

From the effect/impact listed in Table 2, the used indicators of those projects can be extracted. Compared with the researchers proposed indicators, it is found that limited indicators are used. One of the reasons of this limitation is interpreted as practicality for data collection in terms of cost, evaluators' work load and problems whether is understandable or not by the stakeholders expected to answer. It is also necessary to pay attention to the finding that the change of perception and action factually taken.

It is worth noting that social capital related data are taken and analyzed. Besides the projects in Table 2, Wong (2012) and Wassennich et al. (2004) organized the evaluations of World Bank CDD projects from a viewpoint of social capital. OED, World Bank (2005) also includes indicators related to social capital in empowerment measurement indicators.

5. DISCUSSION OF APPROPRIATE INDICATORS

In this section, infrastructure characteristics are reviewed and identified then the indicator development issues are summarized. Next, taking considerations factually collected data referring the projects listed on Table 2, empowerment measuring indicators are discussed and proposed for the community development projects.

(1) Identifying infrastructure characteristics

Nishimiya and Hanaoka (2014) discussed and identified several characteristics and idiosyncratic aspects in infrastructure sector compared with other sectors. They stressed that infrastructure sector has:

- 1) Irreversibility, difficulty of move and modify after construction completion,
- 2) Need of more stakeholders involvement including human power for planning/ implementation,
- 3) Need of huge volume of material, equipment/tools and labor forces,
- 4) Need of more load of consensus building (project scope and implementation methods),
- 5) More visibility for progress of physical change,
- 6) Directly influence to daily life, and
- 7) Indispensability of land as the sites.

In addition, infrastructure includes the activities/jobs for more and easy participation in case of unskilled works. Uncertainty/unforeseeable aspect should also draw much attention during construction. It is common among infrastructure development/construction projects to modify design or take actions against unforeseeable occurrences such as disaster, political turmoil, sub surface conditions of the site and so on. Finally, collective and cooperative work is inevitable at all stage of infrastructure development,

especially physical construction works.

(2) Consideration of indicator development issues

In addition to the infrastructure characteristics, to develop the indicators, there are issues identified in Section 3. Among the issues raised by the researchers, this paper places importance on both of collective and individual, both of intrinsic and instrumental, psychological. Furthermore, practicability to collect data has a priority to develop indicators.

(3) Proposed indicators

In addition to considering the issues in the above (2), the authors recognize that the indicators should be composed of perceptual one and action taken related one. For instance, perceptual indicators are related to perception of capacity increase, self-confidence increase and so on before and after, or with and without. From the previously proposed indicators by other researchers, indicators of self-esteem, self-efficacy, and self-control and self-awareness are added.

Eylon et al. (2000) distinguished a focus on perceptions of empowerment as well as a focus on empowering structures, policies, and practice. They stated that perception of empowerment focus on individual reactions exerting influence to the structures, policies, and practice. So far, however, less research has been found to discuss indicator issues separating perceptual and action related empowerment measuring indicators.

Table 3 tabulates the the proposed twenty two indicators to measure empowerment emergency in infrastructure sector in the community development projects. Those indicators are set to find empowerment emergency by the infrastructure development/construction process as examples. Social capital related indicators are included from the discussion so far. For the column of relation to infrastructure characteristics, more distinguished aspects are listed according to the authors' subjective criteria. Most of indicators are proposed factually based on the collected data in the project in Table 2.

6. CONCLUSION AND FUTURE WORK

By the literature review, case review of the JICA and World Bank projects and by interviews to the experts assigned to the community development projects of JICA, the issues of indicator development for empowerment are clarified and the sample indicators for measuring empowerment by infrastructure development/construction process are proposed. The

setting of indicators took into consideration infrastructure characterizes, raised issues and data collection practicability. The development of those indicators is also referring to the empowerment definition and measuring model discussions. Twenty two indicators categorized as perception and action.

There are needs of further research and discussions. One problem is that some of the proposed indicators may have interrelation, not independent. It is necessary combine some indicators for also reducing the numbers of the indicators. Those indicator development processes still need more reflections from infrastructure characteristics and also difference from other sectors. Time to measure the indicators is also a remaining issue because some effect can be found immediately after the intervention but impact (DAC evaluation's impact) of including unexpected ones may bring about after certain time has passed.

In addition, there is another need of discussion on which indicators should be quantified. All qualitative indicators can be converted into quantitative one, for instance, using Rikert scale. Conversion to quantitative one, however, may depend on the context and/or objectives of the subject projects.

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Table 2 Community Development Projects Cases

Project Name	Context	Specific aspect/ participation degree	Intervention/ input	Outcome/effect/Impact Bold: perception, not bold: Action
Guatemala Social Investment Fund Project Yen Loan 2,962 Mil Yen	Development gap of indigenous people, Less aid projects so far(target regions), Middle level education & income Governance problem for project implementation Target communities less experience of collective actions for project implementation	Only social/economic infrastructure, Proposal by the communities, Three party agreement including community, Co finance (WB,KFW), Social Investment Fund(FIS) capacity development included Participation degree varies.	Fund for 940 community infrastructure projects (school, health facilities, water supply, road/bridge, irrigation and silo) Partly Operation and maintenance training	Sense of self control, ownership, willingness increase Change awareness Community activities increase and activated Operation and maintenance facilitation but depending on the training and cases. Community appreciated needs reflection, A third of community leader recognize that the whole community participated. Some community increase willingness new project formulation
Indonesia Local Infra. Development II Yen Loan 29,200 Mil Yen	Middle level education, middle income Variety of ethnic nature, Development Gap	Infrastructure only Community cluster formulated, Construction contract between CBO and contractor, Important policy of community participation in several stage, but party participation by laborers employed by the contractors P degree medium	Fund for infrastructure of 11,024 village, (road/ bridge, water, irrigation, sanitary, market etc.),	CBO Capability increase (mobilization, planning of sub projects) Stakeholders participation increase in the meetings, Upper level administration participation increase and good experience for participatory approach Good Operation and Maintenance but depending on cases and infrastructure
Rural Development Project in Tajik-Afghanistan Border area or Gorno-Badakhshan Autonomous Region(CBRD) 330 Mil Japanese Yen, Technical cooperation	Inland, conflict affected, history, mountain area and less industrial development, Low income, high educations International migrant worker, Border area to Afghanistan(same ethnic) Independence from the Soviet Union	Only community infrastructure, 70% of project cost(remaining fund used mostly for administering, CBO proposed sub projects, Competition in selection process with accountable and objective method, construction by contractors New CBO and local government organization set up as conditionality Medium P Degree	Fund for infrastructure of 44 CBO (Road, bridge, irrigation, water supply, health facilities, community center, toilet and mini hydro power stations, Training for CD, facilitators, new CBO(Community based organization) setting up	Voluntary land provision and Support contractor Additional self-construction projects, finding new fund. Change : Ownership .trust increasing, Government staff attitude change, CBO started new activities by their initiatives including OM system set up (water supply) Trouble shooting capacity developed CBO new own fund raising for other projects, Intervention for disputes Local government organization expand their role and activities by their initiative Use traditional mutual support and collective action(Hasher)
Sri Lanka Agri. and Rural Development for Rehabilitation/ Reconstruction through Community Approach Trincomalee (Trinca) 490 Mil Japanese yen, Technical cooperation	Conflict affected, Post disaster, ethnic and involuntary displacement people, development gap(low income)	Community infrastructure (20%) and Community contract(up to 2mil Japanese Yen, the CBO contracts with the contractors.), community contribution to sub projects conditionality Higher P degree	Fund(road, community hall, storage house, irrigation etc.), project management training, engineering training, light construction equipment provision	The communities' increase of sense of self-confidence, control, esteem, skill obtaining. Network to other communities enhanced Organize new marketing group, Inter actions between ethnics, membership in CBO(5%UP), Meeting record taking(64% UP) Number of meeting (120-173 times)increase, Book keeping record rate up
Kenya Smallholder Horticulture Empowerment and Promotion Unit Project 349Mil Japanese yen Technical Cooperation	Low income, variety of tribes, development gap, middle level education, less knowledge of marketing Market access roads bad condition	For infrastructure, community force account scheme (training provided and by the community work force), the target groups made action plans. P degree medium	Infrastructure minor component 4.4m Japanese yen allocated to road construction (Do-nou/ LBT) and Training Horticultural farmer organization capacity development is main component.	For infrastructure Target groups raise capacity(engineering and management) GEI(Group Empowerment Index) All group up(average 2.5) Aware raising of group forming /collective work, sense of confidence, capability up to obtain material for construction One group succeeded to take a road maintenance job outside of the community. Source: Nzioka et al. (2012)
KAKAHI-CIDSS Philippines 183.00 Mil US\$ Phase I, and additional 104.82 Mil US\$ WB Loan(CDD) 100.00 Mil US\$ Phase I and additional 59.12 Mil US\$	Development gap, middle income, Mindanao are included(Conflict affected area)	Community infrastructure main(Sub projects), Community selects sub project Community contract, Fully participate Cost Sharing High P degree	As of 2010 Infrastructure main(Fund distribution: Health/education/water 44.5%, Road/bridges 36.5%, Environmental protection/conservation 9.6) Training for project management 5,645 sub projects, 4,583 barangays (villages)	Awareness of village assembly mechanism (participation, accountability and transparency) up, Willingness to contribution to the projects Mutual assistance activities increase., Trust up, Increase local assembly attendance/group membership, Change village leader attitude(more service oriented) Reduce conflicts numbers in Moro Islamic Liberation Front Negative: decrease community own activities depending cases Source: World Bank(2011,2013)
Indonesia Kecamatan Development Project(KDP) World Bank Loan(CDD) KDP1-3 and KDP3b total 1,319.9Mil US\$ (WB/IDA Loan 893.9Mil US\$)	Partly conflict affected area Infrastructure and economic gap compared with urban area Influenced by Economic crisis in Suharto era Decentralization policy introduced Past high fiduciary risk(corruption)	Village proposed any sub projects(Open Menu and Block grant, Community contract), Competition among villages Participatory monitoring(Communities) Community participated all stages from planning, implementation (construction) to OM High P degree	Infrastructure main(Road, bridges, water supply, sanitation facilities, irrigation, public building, rural electrification, health post, school building)	Awareness raised(people can decide by themselves) Self-esteem increase Ownership increase Extension of the community voluntary contribution to the project implementation(fund or in-kind) Intergroup relation improved(ethnic, religion and class) Reengineering relationship between citizens and the state of local level Little impact on conflict at an aggregated level

Source: The authors tabulated from: JICA knowledge site (2015), World bank CDD data base (2014, 2015) and Wong (2012) and others noted in the column of the table
Note: CBO (Community based organization), P Degree (Participation degree categorized by the authors), OM (Operation and Maintenance)

Table 3 Proposed Indicators related to infrastructure development

Indicators	Perception and/or action	Infrastructure characteristics relation	Collected in the cases Table 2	Social capital related	Remarks
Trust	perception	Collective/cooperative aspect Visibility Need of human power Need of consensus building Visibility of progress	Yes	Yes	inside of the group, community and organization, to other groups, communities and organizations
Network	both	Same above and need of huge volume of resources	Yes	Yes	-ditto-
Tie/cohesion	perception	Same above		Yes	inside of the group, community and organization
Discipline	both	Same above and Irreversibility	Yes	Yes	included corruption cases number, situation of consensus building
Collective/cooperative actions	both	Collective/cooperative aspect	Yes	Yes	especially factual construction work
Mutual aid/support tradition	both	directly affect daily life Collective/cooperative aspect	Yes	Yes	Bayanihan(Philippines), Hasher(central Asia and others), Yui and original fushin(Japan)
Skill/knowledge engineering	perception	Participation easiness to unskilled work and engineering jobs	Yes		Basic engineering knowledge, Numeracy included
Skill/knowledge project management	both	Irreversibility, difficulty of move,/modify Need of huge volume of resources, Consensus building	Yes		Time, material, labor and scope etc. Skill of mobilization ,access to information and ability to reach agreement are included in World Bank concept(OED 2005)
Skill/knowledge Negotiations/voice	both	Irreversibility, difficulty of move /modification	not found		Negotiation and voice for what, by whom, when , where and how
Actions against unforeseeable occurrences	action	Uncertainty/unforeseeable aspect	Yes		Design modification , specification modification
Participation	both	Participation easiness Visibility	Yes	Yes	Change time over from the initial and conditional participation t*
Productivity	both	Same above	not found	Yes	For instance, earth moving volume, individual/collective
Confidence	perception	Visibility, participation easiness, Uncertainty /unforeseeable aspect Need of huge volume of resources	Yes		Experiencing work performed
Self-control /efficacy sense	perception	same above	Yes		Decision making by own, actions taken by own initiative
Self-reliance/ independency	perception	same above	not found		
Sense of ownership	both	Affect daily life(Facility effect/impact included) Visibility Need of huge volume of resources Participation easiness	Yes	Yes	Set up of maintenance system/organization during project implementation is counted as an action effected by the process.
New and voluntary activities	both	Affect daily life(Facility effect/impact included)	Yes	Yes	Contribution to construction as unpaid laborers and material, land, food service
CBO activities	both	Affected daily life(Facility effect/impact included) Collective/cooperative aspect	Yes	Yes	Membership, meeting frequency, other new activities in the project and different from the project
Job distribution	both	Need of huge volume resources Collective/cooperative aspect	not found	Yes	Fair, consideration to the vulnerables and/or the excluded
Claims/dispute	action	Need of huge volume resources Uncertainty/unforeseeable aspect	Yes	Yes	Almost all construction projects have cases of claims and dispute
Attitude	Perception	Collective/cooperative aspect Visibility, irreversibility Stakeholder involvement Affect daily life(Facility effect/ impact included)	Yes	Yes	Community members, leaders, government staff responsibility Community leader's responsibility is included in World Bank concept of indicators(OED 2005)

Note: *Participation in this table is not input factor. By the project progress, participation increase is found in the project in terms of number of participants, frequency of participation and importance of decision topics.