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Public Participation Tools and Human Ecological Sustainability: Experiences of Grassroots Efforts in Small Communities of Cavite, Philippines and Concepcion, Paraguay

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Abstract

Public Participation advocates for people's involvement in decisions concerning public issues. It contrasts to the view that deciding over public issues should be left to authorities and experts. Increasingly, public participation is applied in decision-making regarding environmental and natural resource concerns. With the advent of the increasing pressure in human ecological sustainability, and the growing importance of people's involvement in environmental decision-making and governance, what are the facets of public participation tools? This study compared varying public participation tools in grassroots efforts in small communities of Cavite, Philippines and Concepcion, Paraguay. It compared the tools in terms of levels in participation, potentials and challenges towards promotion of human ecological sustainability. Likewise, the study analyzed features of the tools employed in Cavite and in Concepcion.

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Both Cavite and Concepcion cases utilized a variety of public participation tools. Types of tools ranged from 1.) passive information techniques like community orientation and radio program; 2.) group input techniques household survey and organizational meetings; 3.) community planning activities; 4.) community engagement with government and business corporation through dialogues and citizen's oversight committee; 5.) the use of media such as press conference and radio program; and 6.) techniques to gain access to resources such as demand for damage compensation and people's participation in government's call for project proposals. Moreover, Rosario and Concepcion's participation tools are dominantly confrontational public engagement and community planning techniques, respectively.

The Philippines and Paraguay has utilized public participation tools that attempted to increase civic capacities in environmental governance. Public participation in these contexts refers to increased decision-making and engagement of community regarding their local natural resources and environmental conditions. These tools are contextualized in a long tradition of social movements (Philippines) and the striving for strengthening of a nascent democracy (Paraguay).

The study hoped to find links in the contemporary practice of public participation in small communities of environmentally-vulnerable and developing countries. The outcomes of this study were hoped to contribute to the enhancement of the work of local governments, environmental activists, community-based organizations and public policy makers.

Keywords: environmental decision-making; human-ecological sustainability; public participation tools

1. Introduction

The flourishing interest in public participation stems from the growing recognition of the human rights to democracy and procedural justice [1]. Public Participation advocates people's involvement in decisions concerning public issues. It is in contrast to the view that deciding over public issues should be left to authorities and experts.

There are various tools, techniques and procedures that aim to facilitate public participation. These public participation tools varies in levels of people's participation and deliberative character. Moreover, public participation tools can take the forms of one-way information flow, gathering of public input or active participation in the decision-making process of policy creation[1].

As early as the 1970s, democratization of planning and managing environmental and natural resource has been discussed. Increasingly, public participation is applied in decision-making regarding environmental concerns. The Rio Declaration on Environment and Development in 1992 enshrines this concept [2]. The principle 10 of the declaration states:

“Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-

making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.” (Principle 10)

Human ecology is a field of study, a perspective and a practice concerning sustainable relationship between humans and the environment. To bring about sustainable human-environment interaction, the human-ecological system should have empowered and capable human institutions and organizations. Social institutions and organizations are important considerations in human ecology because they prescribe people's behaviour and actions toward the environment [3]. One way of empowering institutions and organizations is by improving the decision-making process regarding environmental issues.

The Philippines and Paraguay are both developing countries with some similar environmental trends. The Philippines is one of the global biodiversity hotspots. The Philippine ecosystem is also threatened by deforestation, destructive extractive industries like mining and quarrying, and pollution. On the other hand, Paraguay's Atlantic Forest, which also runs through the countries of Brazil and Argentina is one of the most threatened forest ecosystems in the world [4]. Other environmental issues of Paraguay are river pollution due to toxic dumping, land use and ownership issues, saline soil in the northern Chaco region, as well as expanding herbicide-intensive and monoculture soybean production.

This study hopes to employ a human-ecological frame through comparison and analysis of tools that build people's capacities for environmental decision-making and management.

With the advent of the increasing pressure in human ecological sustainability, and the growing importance of people's involvement in environmental decision-making and governance, what are the facets of public participation tools? This study compared varying public participation tools in grassroots efforts in small communities of Cavite, Philippines and Jhugua Guasu, Concepcion, and Concepcion City, Paraguay. In particular, the study aimed to:

1. Identify public participation tools employed in two cases of community-based endeavors in small localities in Cavite, Philippines and Concepcion, Paraguay;
2. Compare the tools in terms of focus, levels in participation, potentials and challenges towards promotion of human ecological sustainability; and
3. Analyze features of the tools employed in Cavite and in Concepcion.

The study did not intend to exhaustively discuss the public participation tools in the Philippines and in Paraguay. Rather, it hoped to find links in the contemporary practice of public participation in small communities of environmentally-vulnerable and developing countries.

Results of the comparison can provide insight on possible innovative techniques for eliciting and encouraging people's participation towards sustainable communities and ecosystems. The outcome of this study can be an

input in the work of local governments, environmental activists, community-based organizations and public policy makers.

2. Literature and Study Review

2.1 Public participation tools and Human Ecology

Public participation is a concept and practice of making people involved in decision-making affecting their lives. Public participation is grounded on the principle of the right to participate. This means that all groups and individuals that will be affected by a decision must be involved in decision-making. It was a response to improve centralized and top-down bureaucracies.

Public Participation can enable institutions and organizations to influence and produce actions and policies towards sustainable use and management of resources and environment. Thus, participation tools are necessary for developing capacities of institutions and organizations, which is key in advancing the goals of human ecology.

2.2. Public participation tools

Public participation is a crucial activity to promote shifting of power to those who are traditionally neglected and excluded in decision-making. It is about allowing poor people to influence social policies and in the process, realize their well-being [5]. Participation of ordinary citizens in civic life is not only about voting. Some people in the community are notably more involved in political and local decision-making activities such as contributing to large campaigns, joining protest actions and participating in governing boards.

In instances where civic volunteerism is low, development workers and advocates should use a number of ways to get people's participation. However, every context requires distinct ways of eliciting public participation.

The International Association for Public Participation [6] and Abelson et al [7] enumerated a number of tools for involving people in different kinds of occasions. They classified public participation tools as passive public information techniques, active public information techniques, small and large group public input, and small and large group problem-solving tools.

Passive public information techniques are very important tools in advocacy work. It includes written brochures, newsletter, fact sheets, and position papers, Feature stories, and press release. They are helpful in advancing a new concept or program because it can reach many people.

Active public information techniques include briefing or regular meetings, information hotline, information centers, open house and community fair. These tools are very helpful in allowing local people to grasp abstract and difficult issues.

Small group public input includes interviews and coffee klatches. Coffee klatches are informal ways of communicating with a few people in the neighborhood, but can lead to discussions with more depth. On the other hand, large group public input tools are techniques to get responses from a large number of participants (telephone interview, mailed surveys, internet-based survey and public hearing).

Tools on group problem-solving are also very helpful in local development work. Small group problem solving tools are negotiation, consensus-building, facilitation, focus groups and panels. This requires high skills from facilitators because participants can be very passionate about their stand on issues.

Further, large group problem solving includes workshops, referenda, deliberative polling and open space technology. In a community where people lack the confidence for speaking, employment of these tools can be challenging. Large group processes also need a lot of resources and should be initiated by either government bodies or big civil society groups or NGOs. Other means of categorizing public participation tools is according to process of communication between formal decision-makers and the public. Specifically, it refers to one-way communication versus two-way dialogue [1].

2.3. Public participation and environmental governance

Public participation in environmental policy is linked with the participatory perspective in development studies and practice [8] which refers to the building of people’s capacities to decide and implement actions for their community life.

Earlier, participation was discoursed from an emancipatory viewpoint. It was a radical response to empower the neglected, voiceless and disempowered groups in a community. Later, people’s participation is framed in the context of strengthening democracy and governance. Public participation recently is linked with strong civil society and the promotion of good governance. Governance of environment espouses “*informal, spontaneous, and dynamic arrangements*” in decision-making [8:15].

2.4. Conceptual framework

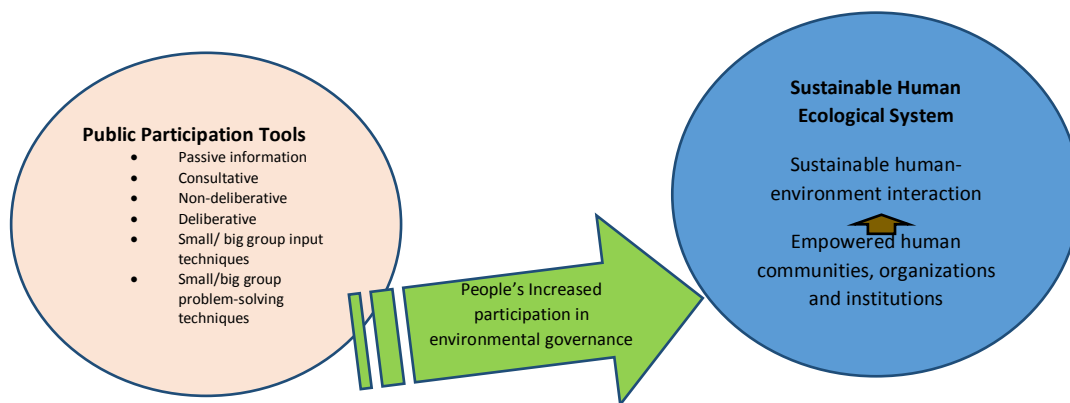


Fig. 1. conceptual framework

Fig. 1. explains that public participation tools are framed to improve environmental governance. This can be done through employment of participatory procedures in environmental decision-making and governance such as passive information tools, consultation, and solicitation of people’s input, problem-solving techniques and other activities that influence the outcomes of environmental decisions. Citizen’s participation in governance can help in managing varying values and outcomes of different stakeholders [9], increase the legitimacy of decisions, facilitate systematic recognition of problems and promote community awareness of environmental issues [8].

The College of Human Ecology, University of the Philippine-Los Baños conceives that empowered human communities, organizations and institutions are important goals in achieving sustainable human ecological systems. Empowered institutions are largely linked to improved environmental and natural resource governance.

From this perspective, public participation tools are imperative to the promotion of environmental governance and consequently, to human ecological sustainability.

3. Materials and Methods

3.1 Qualitative comparison of cases

Selection of case study is based on local areas where the authors have been involved and extensively collaborated towards community development programs. The areas both have local organizations that could benefit from the results of the study.

Data gathering for both cases utilized participant observation. Moreover, in Rosario, Cavite, a random household survey was conducted on August 2013 to profile and gather the perspectives of fisher folks and residents affected by the oil spill. Total number of household surveyed were 77 from *Barangays* (Village) Muzon I, Muzon II, Sapa II and Wawa II. In the case of Concepcion, Paraguay, secondary data were utilized. A comparative study was employed to offer insights on the similarities and difference in the tools, characteristics and challenges in two experiences of grassroots efforts in the Philippines and Paraguay. The comparative study also intended to build explanations on the features of public participation tools, rooted on the localities’ environmental and social context.

3.2. Study Areas

Table 1. Social and environmental context of Philippines and Paraguay

Social and environmental context	Philippines	Paraguay
Development/poverty conditions	<ul style="list-style-type: none"> • GDP (2012): \$250.2 B [10] • GDP per capita \$ 2,587 [10] • Pop: 96.71 M [10] • Land area: 300,000 square 	<ul style="list-style-type: none"> • GDP (2012): \$ 25.50 B [10] • GDP per capita: \$ 3,813[10] • Pop: 6.687 M [10] • Land area: 397,300 square

	kilometres	kilometres
	<ul style="list-style-type: none"> Poverty incidence (2012): 27.9 percent [11] 	Poverty headcount ratio at national poverty line (2011): 34.4% [10]
Significant historical events	<p>Philippines was colonized by Spain for almost 300 years. The Philippine past is also marked by American occupation for 40 years.</p> <p>President Ferdinand Marcos led a dictator regime through the Martial Law from 1972 until his ouster in 1986. Despite a repressive government, grassroots and mass organizing of farmers, laborers, women and students during Marcos period occurred. The social movement in the Philippines, similar to other Southeast Asian countries, is characterized as an intersection between working class struggle and nascent nationalism [12]</p> <p>In 1986, people's protest actions against Marcos' corrupt, fascist and anti-people administration culminated into a non-violent People Power Revolt.</p> <p>After the overthrowing of the Marcos regime, the new Constitution of 1987 was developed. This new constitution established the participation of people and civil society groups in the development process. This also ushered the proliferation of non-government organizations (NGOs) and community-based people's organizations (POs).</p> <p>In 2001, people's demonstrations led to a second People Power against President Joseph Estrada whose administration is marked by corruption and plunder.</p>	<p>War of the Triple Alliance from 1864 to 1870, a conflict which pitted Paraguay against Brazil, Argentina and Uruguay. By the end of the War in 1870, Paraguay was severely devastated and suffered a loss of up to 85% of its male population. Paraguayan government secured loans from Great Britain and also began selling vast tracts of land and buildings on the international market.</p> <p>In 1954-1989 General Alfredo Stroessner dictatorship. During Stroessner's dictatorship opposition was violently silenced, and thousands of people were tortured, exiled, deported, assassinated and "disappeared."</p> <p>Thus Paraguay is a very nascent democracy, with publicly held elections occurring only for the past 24 years</p>
Environmental issues	Philippines as one of the 17 mega diversity countries in the world. The country is also one of the 25 global biodiversity hotspots, with a total of 491	<p>Conversion of critical ecosystems for soybean cultivation</p> <p>Ranching and agriculture have already invaded extremely fragile forest land</p>

	<p>threatened species[13].</p> <p>Deforestation is an enormous environmental issue. Remaining forest cover is at 6%.</p> <p>Environmental destruction is also attributed to irresponsible large-scale extractive industries like mining and quarrying.</p> <p>Large-scale corporate agriculture characterized by mono-crop, inorganic chemical-intensive practices also destroys ecosystem quality. It also erodes subsistent farming and small farmers' food security.</p> <p>These environmental problems are also linked to social issues like displacement of indigenous peoples from their ancestral domains and displacement of livelihoods of small farmers and fisher folks.</p>	<p>Paraguayan forest loses 0.5 percent of forest cover each year between 1990 and 2000.</p> <p>Deforestation of the Upper Parana Atlantic Forest. According to a recent analysis from the Global Land Cover Facility of the University of Maryland, NASA, and the organisation Guyra Paraguay, 35% of the Atlantic Forest was lost in Paraguay between 1989 and 2003.</p> <p>Toxic dumping into the river (Mercury and chromium contamination of water bodies due to tanneries)</p> <p>Saline arid land in the Chaco.</p> <p>Paraguay is one of the highest producers of soy for the global market. This leads to further forest loss, eviction of indigenous communities and contamination on water and soil due to heavy fertilizer and pesticide use [14].</p> <p>Also, conflict involving land in the 162,000 hectare of Tranquilino Favero, the largest soybean producer in the country.</p>
<p>Some environmental political instruments</p>	<p>The Philippine Environmental Impact Assessment (EIA) system obliges big projects that have potential impacts to the environment to undergo impact studies, social acceptance from communities that will be affected, and mitigation plan.</p> <p>The Philippine Local government code also espouses the participation of people in deciding over local environment and natural resource use.</p>	<p>Paraguay issues moratorium on deforestation through the Zero Deforestation Law in 2004.</p> <p>Impacts studies and permitting systems for projects concerning the environment are handled by General Directorate for Oversight of Environmental Quality and Natural Resources (Dirección General de Control de la Calidad Ambiental y de los Recursos Naturales) of the Secretary of Environment</p>
<p>People's/citizen's participation and movements</p>	<p>In the early Philippine past, community life is already characterized by involvement of people in community management [15]</p>	<p>Paraguay undergone 35 years of dictatorship. During this period, repressive and conservative politics suppressed the organization and</p>

Social movements of peasants, workers, women and urban poor fighting for better political, economic and social conditions, were organized since late 60s.

One momentous gain of the Philippine social movements was the overthrowing of the martial rule of President Marcos. Many Philippine NGOs also rose after the 1986 People Power Revolt.

Philippine NGOs are also evolving over time, engaging into social legislations and actions, from anti-dictatorship and protest traditions [16].

Moreover, the 1987 Constitution and 1991 Local Government Code mandated the necessary contribution of people's organizations and NGOs in development planning [15].

In mid-1980s, NGOs concerned with environmental issues also increased [17].

Activist people's organizations and NGOs, equipped with skills on leadership, campaigns, advocacy, organizing and mobilizing, pursued action regarding offenses against the environment. Some of the prominent protest actions were the 1. Campaign against the mine tailings contamination in Marinduque Island by Marcopper Mining Corporation; 2. "anti-nuke" protest movement against the building of nuclear power plant in Morong, Bataan province; 3. the prohibition of commercial logging, wildlife trading, and declaring Palawan a protected area by the Haribon Foundation [17].

mobilization of peoples.

After the dictatorship, citizens rally towards democracy.

There were notable efforts in strengthening local democracy. For instance, the

Movimiento Contraloría Ciudadana Concepción (MCCC) was formalized and registered as an official open membership community group with the Municipal and State Governments to serve as mouthpiece for various community concerns.

Participatory budgeting is also introduced and practiced in some municipalities in Paraguay. Local people access financial decision-making process through giving inputs on how public money will be spent.

4. Results

The case of public action against an oil company in Rosario, Cavite, Philippines is presented here. Moreover, the case describing the experiences of *Movimiento Contraloría Ciudadana Concepción* (MCCC) in the city of Concepcion and the *La Amistad* in JhuguaGuasu, Concepcion are discussed.

4.1. Case: Protest Activities on Oil Spill Incident in Rosario, Cavite, Philippines

4.1.1. Geography and Demographics

Rosario is one of the 19 municipalities of Cavite province in the southern Luzon part of the Philippines. It is 30 kilometers south of the country's capital region, Metro Manila. Its income classification is first class municipality. It signifies that Rosario is a relatively wealthy municipality with an average annual income of PhP. 55 million (1,228,501 USD) or more.

Rosario has a large population, totaling to 92,253[18]. Additionally, the following demographic characteristics of the four most-affected barangays (villages) specifically Muzon I, Muzon II, Sapa II and Wawa II, were drawn from the household survey in August 2013:

Employment. Out of the surveyed households, 27.3% are unemployed, 7.8 are housewives, 22% are fishers, 9% are involved in fish-related industries, 19.5% are into retail selling micro-businesses, and 10.4% are in the service jobs (utility work, laundry service, tricycle driving, etc.).

Education. From the respondents, 33.8% are elementary graduate, while 32.5% are high school graduate. These comprise the highest fraction of the population in terms of highest educational attainment. Only 1 of the respondents surveyed is a college graduate while two respondents never went to school.

Most the inhabitants of Rosario are migrants from other provinces of the Philippines. Majority of the residents are also informal settlers. Facilities such as well-constructed roads and bridges, sewerage systems, water system and electrical system are lacking. Moreover, there are low financial assets in the community, as most of the respondents earn less than 114.8 USD per month. The fisher folk sector was classified to be second poorest sector in the country by the National Statistical Coordination Board in 2006.

Other local capacities include presence of infrastructures including fishport and Materials Recovery Facility in purok Muson Uno. There were also local organizations. These were formed through the initiative and efforts of the people, as articulated by the respondents, to represent the voices of the small fisherfolks. Two organizations, particularly *Samahan ng mga Mangingisdasa Cotabato* and *Nagkakaisang Mangingisda ng Cotabato*, aim to empower the fisherfolk sector.

4.1.2. Environmental Conditions

Fishing is a major economic activity in Rosario. The municipality has a major fishing port, which is in Barangay Sapa. Aside from selling fresh fish and sea food, the locality is engaged in small-scale processing industries

related to fishing. This includes production of smoked fish (*tinapa*), dried fish (*daing*), fish paste (*bagoong*), and fish sauce (*patis*).

The people said that they catch various crustaceans such as crabs, shrimps and fish such as milkfish, *Kabayas* (short mackerel), *Lawlaw* (herring), *Tanuige* (mackerel), etc. Other types of fish abundant in Rosario are mackerel, slipmouth, herring, goatfish, tuna, and catfish. Rosario produced an annual fish production of 2,880.00 metric tons in 2009 [19].

Local residents were also threatened by a proposed expansion of the port of Rosario, as well as a proposed reclamation area. This project intends to demolish a significant part of the people's settlements. Of the households surveyed, more than half (54.5%) said that their house belongs to the proposed demolition area, while 24.7% said they are not included.

On August 8, 2013, a massive oil spill occurred in the coastal area of Cavite, making any fishing activity impossible. This was linked to the existing off-shore oil depot of a multinational oil company, Petron. On August 9, 2013, the municipality of Rosario was declared under state of calamity, because of the oil spill.

At first, the Petron company denied that it caused the oil spill. However, after investigation by the Philippine Coast Guard and the National Disaster Coordinating Council, they confirmed that the source of the oil spill is the leak in the underwater pipeline of Petron's oil depot.

4.1.3. Impacts of Oil spill

The two major perceived effects of the oil spill according to some of the respondents include loss of about fifty percent of income and health problems including asthma and nausea. The sea is the primary source of livelihood in the community before the advent of oil leakage. Their fish produce are sold to their local fish port, wherein buyers from proximate and far provinces gather to buy. However, the respondents articulated that oil spill made this natural capacity unproductive for several days.

4.1.4. The Close Petron Depot Movement (CPDM)

The said oil spill through an ill-maintained oil depot in the coast of Rosario caused significant loss of livelihoods for poor fisher families, health impacts and environmental degradation. In this condition, the environmental problem came as a result of irresponsible corporate practice, low intervention of the government in regulating and demanding accountability from the business firm, and the lack of people's voice in decisions regarding the oil spill catastrophes.

Because of the disastrous oil spill, local fisher organizations joined by a national militant fisherfolk group *PambansangLakas ng KilusangMamamalakaya ng Pilipinas* (National Fisher folk Movement Strength of the Philippines) or *Pamalakaya* started in mobilizing and consolidating the community. Since this is not the first oil spill accident by Petron, the alliance revived its earlier call to shut down the Petron depot in Rosario. This

resulted to the founding of Close Petron Depot Movement (CPDM). CPDM is an alliance of community organizations of fisher folks and urban poor settlers.

4.1.5. Dialogue and press conference

CDMP undertook the process of negotiation with the Department of Environment and Natural Resources (DENR), protest actions with the oil company, advocacy activities and conducting of relief missions.

CDMP and Pamalakaya appealed with DENR to close the oil depot of Petron in Rosario. Further, the fisherfolk groups demanded that the government execute a “cease and desist order” to Petron to terminate its operations. The group also urged authorities to file criminal and appropriate charges against the oil company in order to demand accountability to affected fishing households.

CPDM assisted the community to demand damage compensation from Petron Corporation. In particular, the alliance asserts for the payment of P 20,000 (447 USD) to each fisher to compensate for the devastation to livelihood of small fishermen. A six-month relief assistance was also demanded. CPDM asserted that this is feasible, given the multi-billion earning of Petron. Full recovery of fishers will take a long period because of the catastrophic spill. Aside from livelihoods, the oil spill also posed health risks to residents not just in Rosario but in the neighboring municipalities of Tanza and Naic, Cavite.

In particular, community members representing the Close Petron Depot Movement (CPDM) attracted public attention through a press conference in August 17, 2013. CPDM claims that their victory in pressuring of Petron is the provision of calamity financial assistance instead of Petron’s earlier offer of “calamity loans”.

4.1.6. Public Participation

Alongside negotiations and protest activities, CPDM also conducted a series of relief missions to devastated households. Other agencies and organizations helped in providing assistance to the relief operations, such as academic institutions and church groups. Relief operations were not just distribution of relief packs. It became a community meeting to discuss the environmental issues such as the oil spill, natural hazards and impending demolition. It also became an avenue to encourage people to participate in citizen actions.

People’s views about the disastrous oil spill were also gathered using survey. It profiled the affected households. Moreover, questions about oil spill impacts and satisfaction with Petron’s responses (inadequate financial assistance, etc.) regarding the oil spill were asked. Majority of the respondents (50.6%) are not satisfied with the responses of Petron. A total of 24.7% said they are satisfied with the assistance of Petron

4.1.7. Challenges

In the beginning, Petron offered calamity loans to affected families. CPDM expressed disappointment with this assistance because it could take advantage of oil spill victims through interest earnings from loans. CPDM

claims that the press conference to attract public attention towards Petron's negligence of its responsibilities to fishers resulted to the provision of financial assistance.

Petron finally offered financial assistance to oil spill victims, instead of calamity loan. Boat owners that employs 4 to 5 fishers were offered Php. 5,000 (116 USD). Also recently, Petron oil depot in Rosario was finally closed.

These kinds of public participation tools however, necessitate striving effort. Not many people are motivated to join in confrontation actions because of lack of interest, fear of opposing the business or government, and dislike for protesting. Further, devising these advocacy and confrontational tools to be more deliberative and evocative is still a challenge.

4.2. Case Study: Concepcion City's Community Oversight Committee and JhuguaGuasuBeekeeping Project, Paraguay

Public participation experiences from two localities in Concepcion, Paraguay are presented in this case: the activities of the MCCC in Concepcion city and the La Amistad in JhuguaGuasu.

Situated on the eastern shore of the Paraguay River, Concepción is the capital city of the Department of Concepción located in north central Paraguay. The 2012 population is approximately 75,000 people total in the urban and sub-urban areas. The major economic activities of Concepcioneros (people from Concepción) include small business owners, large wholesale goods distributors, public employees, construction and many activities within the formal sector.

4.2.1. The MovimientoContraloríaCuidadana Concepción (MCCC) in the city of Concepcion

Paraguay undergone 35 years of dictatorship under Alfredo Stroessner. Despite efforts to strengthen democratic political processes, governance is still challenged by political culture of corruption, nepotism, "phantom projects" and favouritism.

Until 3 years ago, there were only 6 paved streets in the entire city of Concepción (population 75,000), and the rest were dirt mixed with some gravel. The rainwater drainage system is highly inefficient or even non-existent in many neighborhoods, and when the frequent, heavy rains fall, many Concepcioneros' homes are flooded and transit becomes risky or impossible. Furthermore, due to a severely outdated and deficient (and in some places non-existent) sewage management system, when the flooding does occur it often enters the sewage pipes and flushes them into the streets, creating immediate and serious health concerns.

A local community organization emerged as a response to the inadequate social services provision in Concepcion. The *MovimientoContraloríaCuidadana Concepción* (MCCC) was formalized and registered as an official open membership community group with the Municipal and State Governments with the principal goal of "elevating and dignifying the quality of life of citizens."

MCCC established meetings with government representatives, or in written form as a letter or informal report, or sometimes via interviews aired on local radio stations. In this way the group is attempting to increase transparency and accountability on the part of the local government.

The MCCC also develops and submits project proposals to the local government in an attempt to meet community needs, specifically in the area of health and “neighborhood issues,” such as water, sewage, electricity, security, etc. Furthermore, on occasion the group acts as a sort of consultant for existing or new neighborhood groups who need assistance in elaborating and submitting their own projects. In one such case in 2008, the MCCC assisted the CONAVI neighborhood group Comisión de Fomento Villa Sagrada de Familia (CFVSF) in developing and submitting to the Municipal Government a project proposal for the improvement of the existing sewer and water drainage systems in their neighborhood. The justification given by the CFVSF is that over time, the population of the neighborhood has grown to approximately 500 inhabitants and the current systems are outdated and/or incomplete and are incapable of functioning properly given the number of users. The consequences of the deficient system cited in the proposal are existing health problems such as parasites and acute diarrhea, especially among children, due to exposure to raw sewage. Furthermore, due to inadequate drainage, low areas and ditches fill with water that becomes stagnant, attracting flies and other pests, as well as emitting a foul odor which is bothersome to neighborhood residents and a deterrent to potential visitors. Moreover, when torrential rains occur and the neighborhood floods due to inadequate drainage, many neighborhood residents must spend money to repair or rebuild certain parts of their home or other infrastructures on their property.

The proposal submitted by the CFVSF to the Municipal Government in 2008 was not considered by the administration in power at that time. The CFVSF submitted the same proposal again (with minor revisions) in the middle of 2012, about half way through the term of the administration currently in power. The proposal was accepted for consideration and currently the four possibilities, or actions, included in the plan are being analyzed, each ascending in complexity and cost. In all cases the proposal is that the Municipal Government finances all inputs, labor and maintenance costs for updating and expanding the sewage and drainage system on public property. With respect to private property, each household in the neighborhood is responsible for financing the updating and/or expansion of their own sewage and drainage systems and connecting them to the public network.

4.2.2. Comité La Amistad (a farmers’ committee in JhuguaGuasu, Department of Concepción, Paraguay)

The project goal of *Comité La Amistad* is to assist small farmers in understanding and implementing techniques for the improved conservation and management of natural resources. Under this project is the beekeeping component. This project component aims to assist small farmers in understanding and implementing improved beehive management techniques in order to increase honey production for consumption and sale.

The organization is comprised of 10 young farmers (ages 15 to 30) from the community of JhuguaGuasu, Concepción, Paraguay. The committee was formed and officially registered with the municipal and departmental governments in early 2005. The goal of the committee is to collectively learn about and implement

conservation agriculture techniques on their family farms, as well as the introduction of beekeeping as a complimentary food and income generating activity. Jonathan Bibee, a co-author of this paper, was Peace Corps Volunteer in JhuguaGuasu from 2003 to 2006 and was asked by the committee to provide technical assistance and information related to these activities.

In 2005, *Comité La Amistad* elaborated and submitted a business plan to compete in a departmental youth business plan competition sponsored by the municipal and departmental governments of Concepción and GTZ, a German development agency (now GIZ). The project won first prize and the committee was awarded \$500 in order to collectively build and purchase beekeeping infrastructure with the aim of bottling, labelling and selling the value-added honey at local supermarkets. As part of the prize, committee members attended regular workshops on basic accounting, marketing and business management practices. Their commitment was to implement what was learned and contributed their time, energy and interest.

The members of the committee all grew up together and worked on each others' family plots in the small rural community of JhuguaGuasu. Thus, even before the formation of the committee there was a strong element of embedded trust and recognition of each person's specific skills and knowledge.

4.2.3. Public Participation Activities and Tools Utilized in the MCCC and La Amistad Experiences

The organized citizens' group MCC engaged with the Municipal government of Concepción in order to design a project to improve sewage and drainage infrastructure in certain neighbourhoods. This was achieved through a series of meetings in which brainstorming and dialogue were the tools most frequently utilized to prioritize and make decisions. Another participatory tools used by MCCC is community mapping. Community mapping in Concepcion is done in order to pinpoint locations of deficient or non-existent drainage and sewage infrastructure. This was conducted by certain neighbourhood commissions and the locations indicated were sometimes photographed and the photos appended to the map.

Radio in Paraguay is a very effective tool for engaging the public. Although more passive, radio is the principal source of information and entertainment for Paraguay's rural public. Other than music, local and international news, community events are announced, community meeting times and places are mentioned repeatedly and local government officials and those from civil society are often on the air to present and debate local issues. With regard to rural farmers, who comprise a large part of the listening audience, the early morning segments of many radio stations include technical advice and discussions related to agriculture, often with local and external experts invited as guests. Topics include, but are not limited to, bee-keeping, soil conservation techniques, importance of forests, how to reforest native species, agro-forestry, crop diversification, fish culture, rabbit raising, beeswax candle-making, beeswax-based products, value added process with honey, gardening, etc. In this way radio in Paraguay engages the public by providing them information and options they would not otherwise have access to.

Aside from information dissemination through radio, *La Amistad* conducted workshops and meetings to analyze and strategize conservation and livelihood activities. Brainstorming was frequently utilized in various contexts,

usually within groups in order to determine a consensual felt need and then to propose solutions to meet that need. This was conducted informally with paper and pencil, or sometimes with chalk and a blackboard. Other participatory planning tools that were used are problem and solution tree, priority matrix, farm mapping and community mapping.

The problem and solution tree was often used as a follow up and included the brainstormed ideas for further analysis by the group. Conversely, this can also be used as a sort of asset identification and multiplication tool, in which the roots of the tree are group-identified community assets and the fruits are other related opportunities or elements in the community which can be enhanced by those assets.

The Priority Matrix was used to prioritize projects, as well as stages or tasks within projects, via group discussion and final voting on the sequence of events. This was conducted informally as a group using paper and markers or chalk and a chalkboard.

Farm mapping in JhuguaGuasu with individuals and the committee as a whole in order to identify optimal apiary location based on proximity of bees' natural resource needs (i.e., pollen, nectar, water). This was done informally in community member's homes with paper and markers.

The youth business plan competition was an initiative of the municipal and departmental governments of Concepción in partnership with the German development agency GTZ (now GIZ). Other than providing \$US 500 of start-up capital for the winning proposal, the competition was also a forum for citizens' positive engagement with local government. Due to the dictatorship under Alfredo Stroessner from 1954 to 1989, many Paraguayans are still averse or distrustful of interactions with the government. This business plan competition helped to foster constructive interaction among youth and the government because it required all participants to obtain the entry forms and other documents from certain departments within the local government buildings, thereby allowing the youth to meet the people working there. Furthermore, the youth presented their proposed projects to a panel of judges comprised of members of the local government and GTZ staff, as well as an audience including other youth competitors and their friends and relatives. In this way the youth business plan competition was an innovative tool for promoting public participation.

4.2.4. Cultural Challenges in Paraguay

Again due to the Stroessner dictatorship which brutally oppressed dissent and diversity of ideas, encouraging group formation and cooperation in Paraguay can at times be difficult. Often people are reluctant to express their ideas for that their contribution will not be accepted or valued. This can be overcome with patience and persistence in inviting people to participate, as well as fostering a welcoming and inclusive atmosphere during group events.

Punctuality and accountability can also be a challenge when working in Paraguay. Both of these can be overcome by establishing clear, binding, mutually agreed upon group norms, as well as a strong ownership of the project or endeavour on the part of the stake holders. Those involved must feel that they themselves and/or the community will benefit from their individual and collective contributions.

Low literacy rates are common among the middle aged and older members of Paraguay's rural population. At times people with low or non-existent literary skills may avoid participation due to potential embarrassment or feeling of shame by exposing their inability in a public forum. Thus it is critical for the facilitator to encourage the participation of everyone who is interested in attending the meeting or event. Tools or activities can always be modified to include more speaking, and perhaps pictures and drawings. Furthermore, responses and ideas written by others which are meant to be public should also always be read aloud so that those who cannot read are able to understand and participate. Moreover, where trust is present among participants small groups can be created which mix participants of higher and lower literacy levels in order to foster cooperation and peer-to-peer learning.

Finally, and not only pertinent to Paraguay, is the challenge of including the ambivalent, inactive or marginalized members of the community. It is far too idealistic to strive for 100% participation. However, if a few key people in the community are involved in the group, they through their social networks can recruit others to participate who would have otherwise remained isolated. These key people do not necessarily need to be the most powerful or influential, although they are normally well respected, charismatic and viewed as honest and hardworking members of the community. Furthermore, showing off a positive tangible result, or a recognizable successful achievement will surely attract others who wish to attain the same benefit. This may not always be appropriate for all projects, as many require a certain quantity of people to participate throughout the established timeframe. However, when appropriate, showing off success is a sure way to garner new participants. Seeing is believing!

4.2.5. Challenges Related to Tools Utilized

Community and farm mapping is usually easy (and fun!) to facilitate with the children through young adults age groups, as they are accustomed to writing utensils and are eager to make marks on a clean sheet of paper. However, with respect to middle-aged adults and older, sometimes these age groups are reticent to pick up a marker and start to draw (often for the same reasons cited above.) Therefore, it may require the facilitator to begin to draw first and then kindly pass the marker along to a participant.

Once again, related to literacy, tools that "in the textbook" require reading and writing skills must be modified so as to include those participants who cannot read or write. This means that the ideas and results generated by utilizing tools such as brainstorming, the problem and solution tree and the priority matrix must at a minimum be verbalized. Additionally, the facilitator must make further creative, innovative modifications to the tools in order to stimulate participation and ensure understanding on the part of all group members.

Finally, too many tools at once often confuses people. One tool per meeting should suffice. This is normally all there is time for in a standard committee meeting in rural Paraguay, which usually lasts for 1 or 1 ½ hours. When one tool is completed, if possible it should be brought to the following meeting and reviewed by participants in order to remind them about the results and inform those who were not in attendance at the previous meeting. Upon review of the results, the subsequent new tool should be introduced, explaining how it relates to the previous one and the information it aims to provide.

4.3. Analysis of Public Participation Tools in Rosario, Philippines and Concepcion, Paraguay

This section discusses the a.) comparison of public participation tools in Rosario and Concepcion; b.) the analysis of the public participation tools in relation to human-ecological sustainability; and c.) the features of the tools.

4.3.1. Comparison of Public Participation Tools

The types of public participation tools utilized in Rosario and Concepcion range from passive information propagation, group input techniques, to more deliberative and persuasive methods like participatory community planning, the use of broadcast media, dialoguing with government and methods to gain access to resources.

Table 2. Types of public participation tools in Rosario, Cavite, Philippines and in Concepcion, Paraguay

Types of tools	Rosario, Cavite, Philippines		Concepcion, Paraguay	
	Tool	Description	Tool	Description
Passive information	Community meeting	<ul style="list-style-type: none"> • People were invited to gather in the small chapel • Environmental issues like oil spill disaster and typhoon were discussed • call for action were expressed particularly the invitation to join campaigns on Close Petron Depot • relief missions during disaster emergencies also commences with community meetings 	Radio program	A weekly radio program whose target audience is local farmers. The aim of the program is to discuss agricultural issues and provide technical recommendations for implementing conservation agricultural systems, such as no burn/no till, crop rotation and diversification, etc.
Group input	(large group input) Household survey	<ul style="list-style-type: none"> • In partnership with an academic institution, volunteer students administered household surveys to gather the opinions of people regarding the oil 	Meetings Participatory Analysis for Community Action (PACA tools) of	Community and Farm mapping were conducted to identify community assets and needs Brainstorming is a common tool to

	spill disaster		Peace Corps	informally deliberate on felt needs and desired goals. Problem tree and Problem solution tree are used for deeper analysis of problem and possible responses. Priority matrix is used to prioritize projects and to sequence the activities of the plan
Community planning			Livelihoods / Natural Resource Managementplanning	Results of the community analysis tools (brainstorming, problem tree, solutions tree, community and farm mapping) are translated into collective visions and goals. Projects are developed (such as beekeeping and honey production). Stages, activities, and specific tasks are also identified.
Engaging government and business	dialogue	•	Dialogue with the Department of Environment and Natural Resources (DENR). The CPDM demands the government to order	The MCCC Concepcion case: Community oversight committee In JhuguaGuasu, the young farmer organization Meeting with government to insist authorities to address social service needs of the community.

		the oil company to close its Rosario oil depot, and to pay just damage compensation	members were trained to develop and present a business plan	The departmental government sponsored a youth business competition in order to promote entrepreneurship at the local level.
Media	Press conference	<ul style="list-style-type: none"> The CPDM organized a press conference to attract public attention towards the inaction of Petron regarding the oil spill. The demands for appropriate damage compensation and closure of the faulty oil depot is also expressed. 	Radio	Advertisements and reminders about various community events, such as town hall meetings and agriculture workshops.
Gaining access to resources	Demanding for damage compensation	<ul style="list-style-type: none"> Through press conference, dialogues with DENR and community education, demands for just damage compensation were articulated 	<p>Sending project proposals to government</p> <p>Business plan competition participation</p>	<p>In Concepcion, certain neighbourhood commissions submitted drainage and sewage infrastructure improvement proposals to the municipal and departmental government.</p> <p>In JhuguaGuasu the youth farmer's committee submitted a value-added honey production plan for a department-wide youth business plan</p>

competition
sponsored by the
departmental
government and
GTZ.

Table 2 showed that both the Philippine and Paraguayan cases employed a variety of tools to involve people regarding environmental discussions and actions. Tools evoking different levels of participation were utilized. Common types of tools utilized were passive information techniques, group input techniques, tools to engage government, business and media as well as strategies to demand resources from government or business. On the other hand, techniques on community planning was mostly employed in the case of JhuaguaGuasu and Concepcion. Techniques characterized by militant demands against a corporation is shown only in the case of Rosario, Cavite.

The case of Rosario, Cavite, Philippines demonstrated confrontational public participation. Protest public participation activities were staged against a business company through actions like community education and awareness-raising, press conference and dialoguing with government.

In Concepcion, Paraguay, public participation is more focused on participatory natural resources management through capacity building on planning, project development and management. Concepcion case showed participation tools towards claiming of better local infrastructures, as exemplified by the MCCC. Further, most of the tools in the JhuguaGuasu aimed at building people's skills for planning and deciding over local environment and natural assets.

4.3.2. Public Participation and Human Ecological Sustainability

Sustainable human-ecological systems require sound management of social and biophysical environments. The public participation tools used in Rosario and Concepcion contributes to human ecological sustainability in several ways: 1.) public participation is used to influence community's use of natural resource and environment; 2.) public participation is utilized to influence the management of environment; and 3.) public participation is mobilized to increase of people's resources.

Influence Community's Use of Natural Resource and Environment. In the case of JhuaguaGuasu, most of the participation tools were directed towards community education of the sustainable use of natural resources. Local people participate in education and entrepreneurship activities on holistic agriculture system through sustainable bee keeping and honey production.

Influence the Management of natural resources and environment. The collective effort of the fishers in Rosario demonstrated people's assertion of power in managing the aquatic resources and environment and the oil spill incident. The CPDM through activities like media coverage (press conference), community education

and dialogue with government agency demanded the accountability of the corporation regarding its environmental violations.

Increasing of People's resources. Both the cases of Rosario and Concepcion exemplified public participation towards increasing of people's resources. In particular, new infrastructures, funding for projects and compensation for environmental damage were sought.

4.3.3. Features of the Public Participation tools

The features of the public participation tools were analyzed in terms of related patterns in the processes and motivations/contexts where the tools are utilized.

4.3.3.1. Community Organizing and Public Participation

Public involvement in community problem-solving and decision-making is not a simple endeavor in the local community contexts of Philippines and Paraguay. This necessitates positioning public participation in more sustainable community building process.

Both the Rosario and Concepcion cases utilized public participation tools in the context of grassroots community organizing. Community organizing (CO) ensures broad participation of people in local development endeavors through selection of committed local participants, awareness-raising and analysis of local issues, capacity-building of local leaders, formation of community-based organization, sharing of vision and implementing development initiatives. From a community psychology perspective, CO can contribute to changes within individual community members and their relationships [20]. It also builds collective efficacy [20] or the willingness of people to pursue common goals. Furthermore, community organizing can increase the sense of community [20].

Through community organizing, local capacities for community involvement are enhanced, thus enriching and supporting public participation process.

4.3.3.2. Potentials and Challenges of the Tools

The whole range of public participation tools utilized in Rosario and Concepcion was able to elicit people's involvement related to human ecological issues. People became participants in discussing environmental issues such as oil spill, inadequate social services and sustainable bee keeping. People are also involved in influencing decisions regarding human ecological matters through demands for damage compensation for oil spill victims, proposals for infrastructure improvement and proposals for livelihood projects. Another potent force of the public participation tools is its capacity to prepare community members to engage powerful entities such as government and business through dialogue, protest activities, business plan competition and oversight of public services.

However, there remains many challenges in involving people in decision-making and problem-solving. In the case of Rosario, going against a very powerful corporation holds many risks for small fishers. The feeling of powerlessness affects the grassroots organizing process. Also, confrontational political public participation have its costs [21]. Not many people are willing to participate in protest activities because of fear of further oppression. Confrontational public action is also feared by poor people as they risk losing favor of the government and businesses.

There are also cultural challenges to public participation. A long period of subservience to dictatorship could hamper people's capacity and impetus for participation in public life. Willingness and accountability of people to allot time and energy for collective activities is also arduous.

In terms of the tools, the challenge is to sustain the creation of spaces where people can discuss and deliberate solutions to human ecological issues. Although passive information techniques are important for information propagation, sustained efforts for more deliberative and problem-solving techniques are needed. In Rosario for instance, means to involve people in planning dialogues and oppositional activities could be innovated.

Appropriate participation tools for the varied needs of target participants should be continually reimagined. Community planning tools should be sensitive to literacy levels of participants. Likewise, people who are uncomfortable with confrontational public action should also be provided with other avenues to understand, evaluate and influence decisions of decision-makers.

Another important hurdle is to encourage the broadest participation, which includes the least heard and serviced sectors. For instance, combining a variety of tools such as confrontational, advocacy and non-confrontational techniques can broaden community members' involvement in human ecological decision-making.

4.3.3.3. Development catalyst-initiated and organic public participation

Public participation process demonstrated by the Rosario and JhuguaGuasu cases are profoundly initiated by community development practitioners. Development workers such as community organizers and outside volunteers have a big role in assisting people to voice out their concerns and interests regarding important community matters. These development practitioners facilitate education and information activities and prepare communities to engage the formal decision-makers.

On the other hand, the case of MCCC in the city of Concepcion shows public participation instigated by local leaders. Local leaders emerged from the community to promote access of their fellow community members to decision-making procedures. The MCCC helped capacitate other community organizations to develop project proposals. This local committee is also able to dialogue with local government authorities.

4.3.3.4. Confrontational public engagement and community planning techniques

Piven and Cloward stated the importance of confrontational techniques [21]. These tools are necessary since institutions will not pay attention to demands unless intimidated by a disruption/confrontation. Confrontation

techniques are “*a whole range of non-institutionalized tactics for confrontation, including those aimed directly at legislatures or administrations and those which have the intention of creating a social-political climate in favour of one or other of the competing policy options. These tactics include the flexing of social muscle (demonstrations), financial muscle (boycotts), or industrial muscle (strikes), as well as a range of other activities such as the publication of reports to denounce undesirable situations, letter-writing campaigns that target politicians, spectacular actions to capture public attention...*”[21:8-9].

The case of Rosario, Cavite demonstrated how confrontational techniques were used to pressure agencies to respond to environmental degradation and devastation to people’s livelihoods. The case of MCCC also demonstrated confrontational public engagement through written letters to local politicians regarding important neighborhood issues.

Confrontational public participation tools became useful in these cases for successful claiming of rights. In particular, these tools were able to contribute to obtaining damage compensation, public pressure for the closure of a faulty oil depot and holding local government accountable for social services.

Alternatively, JhuguaGuasu employed public participation tools focused more on community planning. Food and Agriculture Organization (FAO) defines participatory planning as “*a process by which a community undertakes to reach a given socio-economic goal by consciously diagnosing its problems and charting a course of action to resolve those problems*[22:32].”

Participatory community planning emerged as an alternative development theory and practice. It puts emphasis on people-centered development processes which enable poor and marginalized groups in the community to design and implement community improvements according to their goals. It encompasses participatory rural appraisal techniques that allows people to understand and critique their reality and action planning techniques.

Community planning tools became successful participation tools in JhuguaGuasu. These tools built the capacities of local leaders to understand their local environment and resources, pinpointing community needs and collectively developing actions to enhance resources and address needs.

4.3.3.5. Context of Public participation in Philippines and Paraguay

Types of public participation tools used are closely linked to socio-political-historical context of the two localities in the study. DeCaro and Strokes [23] claims that many factors influence people’s participation in environmental self-determination. Social-ecological systems which include social, cultural, economic and political and governance settings can affect public participation. Similarly, these complex contexts guide development practitioners/catalysts in their choice of public participation tools.

As mentioned, Rosario’s case focused on public participation through protest activities. Public attention was drawn to seek for social justice regarding a massive oil spill. Non-violent, disruptive/confrontational citizen’s actions are part of Philippines’ socio-historical context. Social movements or people power revolts have overthrown two presidents in the country’s past. Moreover, different marginalized sectors have formed broad

alliances of social movements that continuously advance the interests of farmers, fisher folks, women, children, indigenous peoples, etc. in the development agenda.

The long history of social movements and the continuous consolidation of grassroots sectors set the background for the Close Petron Depot Movement. It was perceived to be instrumental in boosting ordinary people's impact in environmental management. On the other hand, sustaining public participation and continuous consolidation of "fisherfolk" sector to rally against environmental justice pose challenges to development workers. Particularly, the protest organization needs to face the social 'costs' of going against a big firm. It also needs to innovate organizing process in order to mobilize a larger number of people. Also, in a community where most of the people are concerned with the daily means of survival, how do community organizers encourage people to participate in political activities?

Meanwhile, public participation tools utilized in JhuguaGuasu and Concepcion were also tailored to the Paraguayan socio-ecological-historical setting. The long period of dictatorship impeded people's capacities for participation. Hence, building capacities of citizens for designing and implementing local projects became imperative. Furthermore, monitoring of governance, as well as developing the capacities of people to engage the government became the theme of people's participation in the Paraguay localities.

5. Conclusions

Public participation aiming towards human-ecological sustainability as shown in the case of Rosario and Concepcion refers to increased influence in decision-making and engagement of community regarding their local natural resources and environmental conditions. The utilization of public participation tools allowed for creative and informal arrangements for small communities to access decision-making procedures. People are prepared and supported for public engagement. Spaces for discussions about a local concern are opened. Action planning is also facilitated. Public authorities are also given the opportunity for engaging communities. Public authorities are enabled to do action planning and consultation with the people. Occasions where they can listen and speak with people, are activated.

The cases of Rosario, Cavite, Philippines and Concepcion, Paraguay presented experiences of the utilization of a variety of public participation tools. Information is disseminated to increase people's knowledge about human-ecological issues. People have also partaken in discussion of communities' interests and inputs, and directly engaged decision-makers like local governments and a powerful business. Rosario and Concepcion experiences both locate public participation in the context of grassroots community organizing. Both external and local community development catalysts are important in promoting public participation. Furthermore, the motivation and the forms of public participation tools are heavily influenced by the socio-historical-environmental context of Philippines and Paraguay.

Some recommendation for future studies could be in assessing the effectiveness of these public participation tools in environmental governance. For instance, some research directions could include assessment of the

importance, gains and risks of confrontational public participation in the context of environmentally-degraded and marginalized communities.

In terms of improving public participation practice, the continuous rethinking and adapting of tools to respond to community's capacities and limitations is imperative. For instance, how do we innovatively conduct protest engagements? Also, in the context of long-running dictatorship, how do we further assist community to gain confidence in decision-making, deliberating and addressing human ecological concerns?

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